COMMUNICABLE DISEASE THREATS REPORT

CDTR
Week 19, 7-13 May 2017

All users

This weekly bulletin provides updates on threats monitored by ECDC.

News

WorldPride Madrid, June 2017, ECDC rapid risk assessment

ECDC has published a rapid risk assessment to assess the risk of outbreaks and transmission of communicable diseases during the WorldPride festival period taking place in Madrid in June 2017. For respiratory and vector-borne diseases, the risk is considered low, for food and waterborne diseases the risk is low to moderate, for vaccine-preventable diseases, it is moderate and for sexually transmitted infections, the risk is moderate to high.

WorldPride Madrid 2017 is the global lesbian, gay, bisexual and transgender festival to held in Madrid between 23 June and 2 July 2017.

Due to the current epidemiological situation in Spain and rest of the EU, prior to attendance, participants should consider seeking advice from their healthcare provider and ensure they have valid health insurance or obtain a European Health Card, if applicable. They should ensure they are up-to-date with routine vaccination courses and boosters as recommended in their country of residence, and discuss the need for additional vaccinations or booster doses.

In addition, participants should obtain advice on STI-prevention prior to attendance. Men who have sex with men (MSM) in particular, should check their vaccination status against hepatitis A and B, in the context of the ongoing hepatitis A virus (HAV) infection outbreaks affecting MSM in EU countries. They should also ask their healthcare provider about national recommendations on HIV pre-exposure prophylaxis (PrEP).

During the event, participants should follow standard hygiene measures and advice on the prevention of food and waterborne diseases to decrease the risk of gastrointestinal illness, and consider general hygiene practices when consuming food and drink. Participants should practice safer sex using condoms to prevent sexually transmitted infections, including HIV and hepatitis B and C. They should avoid faecal-oral exposure during sexual activity and ensure proper personal hygiene to prevent other infections.

After the event, if experiencing symptoms of infection or in case of unprotected sexual contact with a person or persons of unknown infection status, the participants should contact a healthcare provider for advice on testing for STIs, including HIV and viral hepatitis. They could use the European Test Finder tool to identify the most conveniently located testing centre.

Outbreaks and spread of vaccine-preventable diseases are of particular concern during mass gatherings of any type due to the large number of people gathering in a concentrated geographical area.

Read the rapid risk assessment: Potential public health risks related to communicable diseases at the WorldPride festival in Madrid, 23 June–2 July 2017.

Read more

WorldPride Madrid 2017

Hepatitis A outbreaks in the EU/EEA mostly affecting MSM

I. Executive summary

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EU Threats

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

Opening date: 12 December 2016 Latest update: 12 May 2017

From June 2016, several EU countries have reported confirmed cases of hepatitis A infected with three distinct strains of sub-genotype IA virus. Most cases are reported among adult men who have sex with men (MSM). The main prevention measure in the context of the current outbreaks is hepatitis A vaccination for MSM. The ECDC guidance document 'HIV and STI prevention among men who have sex with men' encourages Member States to offer and promote vaccination of MSM against hepatitis A. In addition, information on vaccine availability should be included in health promotion programmes that target MSM (e.g. information at MSM sex venues).

➔Update of the week

Since the beginning of 2017 and as of 8 May 2017, 242 hepatitis A cases have been detected in Portugal. Of the 242 cases 93% are men. More than half of the 242 cases (57%) acquired the infection through sexual contact. Lisbon and the Tagus Valley Regions are the most affected areas with 79% of the cases.
Of the 242, 42% of the cases are associated with the cluster VRD_521_2016.

Type E botulism likely associated with fish consumption – Germany and Spain

Opening date: 29 November 2016 Latest update: 12 May 2017

Since November 2016, Germany and Spain have reported cases of botulism caused by botulinum neurotoxin type E (BoNT E) linked to consumption of salted and dried roach ("vobla").

➔Update of the week

On 4 May 2017, Germany reported a new laboratory-confirmed case of botulism in a 53-year-old man living in northwest Germany. The patient, who had clinical symptoms compatible with foodborne botulism, remains in a critical condition. The botulinum neurotoxin type E was demonstrated in patient sera and *Clostridium botulinum* type E was detected by PCR in left-overs of the fish consumed by the patient. Preliminary information indicates the source to be dried and salted roach (*Rutilus rutilus*), locally purchased on 29 April 2017. A second suspected case of foodborne botulism in southern Germany is currently under investigation.

ECDC epidemiological update

Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 12 May 2017

A measles outbreak in Romania has been ongoing since February 2016. 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 5 May 2017, Romania reported 5 290 cases including 25 deaths. In 2016, a number of additional 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/EEA countries have been epidemiologically linked to the current outbreak in Romania.

➔Update of the week

In addition to Romania, the following EU/EEA countries have reported measles cases in 2017: Austria, Belgium, Bulgaria, Czech Republic, Denmark, France, Germany, Hungary, Iceland, Italy, Portugal, Slovakia, Spain and Sweden.

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Non EU Threats

Travel-associated Legionnaires' disease – Dubai, UAE – 2016/2017

Opening date: 10 November 2016 Latest update: 12 May 2017

The ECDC ELDSNet surveillance scheme on travel-associated Legionnaires' disease (TALD) has observed an increase in the number of cases of Legionnaires' disease associated with travel to Dubai, United Arab Emirates (UAE) since October 2016.

➔Update of the week

On 8 May 2017, the UK reported a case of Legionnaires' disease with travel to Dubai. The case is a 49-year-old male who spent five days of his incubation period staying at a hotel in Dubai, before falling ill on 18 April. Two additional cases have been reported on 12 May. The first case fell ill on 14 April, following travel to Indonesia with a short stay in Dubai from 5 to 6 April. The second case fell ill on 25 April, after a stay in Dubai from 15 to 23 April.

On 9 May 2017, Sweden reported a probable case of travel-associated Legionnaires' disease. The case is a 58-year-old male, who fell ill on 28 April 2017 and had stayed in Dubai from 12 April to 23 April 2017.

Yellow fever – South America – 2016/2017

Opening date: 16 January 2017 Latest update: 12 May 2017

Yellow fever is a mosquito-borne viral infection present in some tropical areas of Africa and South America. On 6 January 2017, Brazil reported an outbreak of yellow fever that started in December 2016 and is still ongoing. Bolivia, Colombia, Ecuador, Peru and Suriname have also reported cases of yellow fever in 2017.

➔Update of the week

Between 27 April and 4 May 2017, Brazil has reported 14 additional confirmed cases in the states of Espírito Santo (9) and Minas Gerais (5), and has discarded 164 suspected cases.

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 12 May 2017

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then and up to 11 May 2017, 1 463 cases have been reported to WHO, including at least 552 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. From week 41/2016, 665 cases have been reported, representing a significant increase compared to previous seasons.

➔Update of the week

Since the last update, 24 additional cases, including two deaths, have been detected in China according to the health authorities in Hong Kong.

Influenza A(H5N1) and other strains of avian flu – Non EU/EEA countries

Opening date: 15 June 2005

Highly pathogenic avian influenza viruses A(H5) of Asian origin are highly infectious for several bird species, including poultry. Human infections with influenza A(H5) viruses have been caused by influenza A(H5N1) virus in several non-EU/EEA countries and by influenza A(H5N6) virus in China. Other avian influenza subtypes, including H7N7 and H9N2, have infected people sporadically. Many of these infections have been mild or even subclinical in humans, but some have been severe and have resulted in deaths. ECDC is following the development of these viruses and is monitoring infections in humans.

➔Update of the week

In April 2017, Egypt reported one additional human case of influenza A(H5N1). The case is a 35-year-old man from Cairo governorate. This is the third case reported from Egypt this year.

Cholera – Multistate (World) – Monitoring global outbreaks

Opening date: 20 April 2006 Latest update: 12 May 2017

Several countries in Africa, Asia and the Americas are reporting cholera outbreaks. The current situation in Yemen and Somalia is of particular concern as cholera outbreaks are occurring during major humanitarian crises.

➔Update of the week

The Gulf of Aden region is the main affected area with Somalia, Yemen and Ethiopia reporting major cholera outbreaks since the beginning of 2017. These outbreaks are expected to intensify and spread with the start of the rainy season.

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II. Detailed reports

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

Opening date: 12 December 2016 Latest update: 12 May 2017

Epidemiological summary

From June 2016 and as of 28 April 2017, 674 confirmed cases have been reported that are associated with these outbreaks. Of the 665 cases with available information on gender, 631 (95%) are males. Of the 622 of these with available information on age, 558 (90%) are between 18 and 50 years of age. The majority of the cases with available information on sexual orientation (n=353, 83%) are in MSM.

Event 1, cluster VRD_521_2016, 336 cases are associated with this cluster, which was first reported by the UK in December 2016. Forty-three cases (20%) of those with available information on their travel history travelled abroad during the incubation period. Of these, 35 travelled in different EU countries including 18 to Spain.

Event 2, cluster RIVM-HAV16-090, 268 cases are associated with this cluster, which was initially reported through the Early Warning and Response System (EWRS) on 14 October 2016 by the Netherlands and through EPIS-FWD on 31 January 2017. The first two Dutch cases reported visiting the EuroPride festival in Amsterdam between 23 July and 7 August 2016. As of 28 April 2017, 63 cases (29%) of those with available travel history travelled abroad during the incubation period. Of these, 49 travelled in different EU countries including 27 to Spain and five to Germany.

Event 3, cluster V16-25801, 70 cases are associated with this cluster, which was reported through EPIS-FWD on 11 January 2017 by Germany. Ten cases (20%) of those with available travel history travelled abroad during the incubation period. Of these, seven travelled to different EU countries.

ECDC assessment

The European hepatitis A outbreaks mostly affecting MSM are rapidly spreading and are likely not to have reached their peak yet. The definition of confirmed cases is based on viral RNA sequencing, which is performed on a large proportion of strains and in a timely fashion only in a minority of EU countries. Spain and Italy were reported as two of the most affected countries by these outbreaks in the previous ECDC rapid risk assessment; most of the sequencing results from these countries, particularly from Spain, are still pending. The reporting of confirmed cases provides a good indication of the outbreak dynamic. However, due to the challenges in complete and timely reporting of sequencing results, the current figures represent a substantial underestimation of the true extent of these outbreaks.

Actions

ECDC is supporting a European study to describe the full extent of the outbreak and identify possible risk factors and characteristics independently associated with the three currently ongoing clusters. ECDC published an updated rapid risk assessment on this threat on 23 February 2017 and an epidemiological update on 28 April 2017. ECDC is preparing a new update of the rapid risk assessment.

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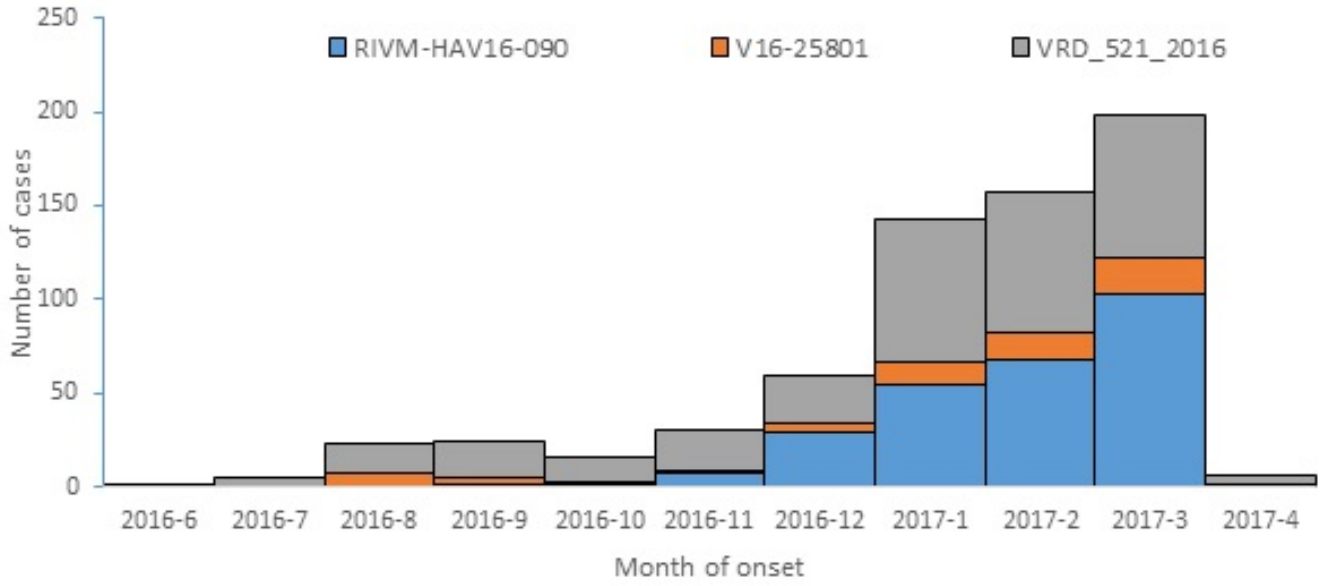
Number of hepatitis A confirmed cases by month and genetic cluster, EU Jun 2016-Apr 2017 (n=674, 9 cases missing month of onset, or month of sampling or month of receipt by the reference laboratory if month of onset is not available)

ECDC



Type E botulism likely associated with fish consumption – Germany and Spain

Opening date: 29 November 2016 Latest update: 12 May 2017

Epidemiological summary

On 22 November 2016, Germany reported two laboratory-confirmed cases of foodborne botulism neurotoxin type E (BoNT/E) in adult males from two neighbouring federal states. Both patients are of Russian origin and had consumed 'dried and salted roach (*Rutilus rutilus*)' purchased in separate locations of the same chain of grocery stores specialising in eastern European foods. Both developed symptoms in early November. The implicated fish product has been distributed within Germany and to several other EU/EEA Member States. Germany issued an RASFF notification (2016.1621) on 25 November 2016, leading to recalls in the countries concerned. Two fish samples taken from one patient's home have been confirmed to contain the BoNT/E coding gene.

On 25 November 2016, Spain reported two suspected cases of botulism in a Russian couple residing in Spain. Both had consumed 'Plötze Salz (*Rutilus rutilus*)' and developed symptoms on 5 and 6 December 2016. The results of the clinical samples were negative and the two cases were classified as probable.

On 7 December 2016, Germany reported an additional suspected case of botulism from a third federal state. The patient developed symptoms on 24 November 2016. This patient is also of Russian origin and had consumed 'dried and salted roach (*Rutilus rutilus*)' purchased from the same distributor and supermarket chain as the two previous cases in Germany. The case was later confirmed.

On 19 December 2016, German authorities reported an additional confirmed case. The case is a 55-year-old woman of Kazakh origin. She had consumed dried roach on 10 or 11 December 2016. The fish was purchased in a store belonging to the previously implicated chain of stores on 12 November 2016, more than a week before the recall of the roach. The woman fell ill on 11 December 2016. The *C. botulinum* type E toxin gene was identified by PCR in the patient's stool and also in the leftovers of the fish. The patient's husband ate some of the fish, presented with a positive stool sample but remained healthy. Apparently, the family had not received information about the recall of the fish.

The Netherlands reported one BoNT/E case in April 2016, suspected to have been infected via home-preserved salmon.

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However, this case is not related to the current outbreak. Albania, Austria, Denmark, France, Italy, Lithuania, Luxembourg and Slovenia have not reported BoNT/E cases in 2016.

On 4 May 2017, Germany reported a new laboratory-confirmed case of botulism in a 53-year-old man living in north-west Germany. The patient, who had clinical symptoms compatible with foodborne botulism, remains in a critical condition. The botulinum neurotoxin type E was demonstrated in patient sera and *Clostridium botulinum* type E was detected by PCR in left-overs of the fish consumed by the patient. Preliminary information indicates the source to be dried and salted roach (*Rutilus rutilus*), locally purchased on 29 April 2017. A second suspected case of foodborne botulism in southern Germany is currently under investigation.

Sources: ECDC botulism page | RASFF | Media

ECDC assessment

The clustering in time and very likely link to the consumption of commercially available dried and salted roach (*Rutilus rutilus*) indicates that this fish product may be a common source. Six human cases have a Russian origin and one case has a Kazakh origin. The implicated fish product has been distributed to several EU/EEA Member States and intensive recall measures have been initiated in the countries concerned following German RASFF notification.

Botulism neurotoxin type E is not an uncommon contamination in fish products, which have been poorly eviscerated and/or self-salted at home. Contamination in commercial fish products has also been reported. For this outbreak, the populations at the greatest risk are those who traditionally consume salted and dried roach ('vobla'). The risk to other population groups is very low in EU/EEA. In view of the rapid initiation of recalls and targeted public warnings, the risk that new cases linked to the outbreak will appear in the EU/EEA is considered to be very low. The main residual risk of exposure relates to consumers still keeping the product at home who may not been made aware of the public warnings, or stores that may not have received notification of the recall and are continuing to sell the implicated fish product. There is no risk of person-to-person transmission.

Actions

ECDC is following this event through the Epidemic Intelligence Information System for Food and Waterborne Diseases (EPIS-FWD). ECDC and the European Food Safety Authority (EFSA) distributed a joint rapid outbreak assessment on 20 December 2016.

Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 12 May 2017

Epidemiological summary

EU/EEA countries with updates since last week:

Austria: Since the beginning of 2017 and as of 5 May, Austria has reported 75 cases. This exceeds the cumulative number of cases reported in 2016.

Bulgaria: Since mid-March 2017 and as of 3 May, media in Bulgaria have reported 71 cases. Thirty-seven cases are confirmed, mostly in the city of Plovdiv (34). This represents an increase by six cases since the last report on 24 April.

Czech Republic: As of 9 May 2017, the Moravian-Silesian region has reported 90 measles cases, including 82 confirmed. Thirteen confirmed cases have been reported among healthcare workers.

Romania: Between 1 January 2016 and 9 May 2017, Romania has reported 5 290 cases, including 25 deaths. Cases are either laboratory-confirmed or have an epidemiological link to a laboratory-confirmed case. Infants and young children are the most affected group. Thirty-eight of the 42 districts have reported cases, Caras Severin (West part of the country, at the border with Serbia) being the most affected with 966 cases. Vaccination activities are ongoing in order to cover communities with suboptimal vaccination coverage.

Portugal: Since the beginning of 2017 and as of 9 May, Portugal has reported 28 confirmed cases, of which 18 (64%) are older than 18 years of age, 17 (61%) were unvaccinated, 12 (43%) are health professionals and 13 (46%) were hospitalised. One death has been reported. On 10 May, media reported an additional case, bringing the number of cases to 29.

EU/EEA countries with no updates since last week:

Belgium: Since 20 December 2016 and as of 16 April 2017, Wallonia has reported 288 cases, of which 163 are confirmed, 81

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probable and 44 clinical (ECDC 2012 definition). The outbreak affects all provinces of Wallonia, with the exception of the province of Luxembourg. Thirty-seven cases are among healthcare workers (31 confirmed, four probable and two possible). Of the 288 cases, 111 (38%) were hospitalised. Two of the cases had acute encephalitis. No deaths are reported. The index case of the outbreak in Wallonia 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 outbreak 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 in an unvaccinated adult who was infected during a holiday in Asia.

France: Since 1 January 2017 and as of 31 March, France has reported 134 cases, three times more than over the same period in 2016. The cases are mainly linked to an outbreak in Lorraine (60 cases). Two cases of encephalitis and 15 severe pneumopathies have been recorded since the beginning of the year.

Germany: Since the beginning of 2017 and as of 16 April, Germany has reported 504 cases. This is an increase by 42 cases since the previous update. In the same period in 2016, Germany reported 33 cases.

Hungary: Between 21 February and 22 March 2017, Hungary has reported 54 cases. Health authorities have lifted the quarantine from the hospital in Mako, Southeast Hungary, as no new cases were detected in two weeks.

Iceland: On 31 March 2017, Iceland reported two cases in two 10-month-old unvaccinated twin siblings. 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.

Italy: Since the beginning of 2017 and as of 30 April, Italy has reported 1 920 cases in 18 of the 21 regions. Among these, 176 cases occurred among healthcare workers. Most of the cases are above the age of 15 years and 88% of the cases were not vaccinated.

Slovakia: On 24 April 2017, Slovakia reported an imported case in a 25-year-old, unvaccinated Italian who studies in Kosice. In Slovakia, the last endemic cases were reported in 1998 and the last imported cases in 2011 and 2012.

Spain: An outbreak started in the first week of January in Barcelona metropolitan area, due to an imported case from China. As of 7 April, 46 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.

Sweden: On 30 April, Sweden reported five cases in the Southern part of the country. Since the beginning of 2017 and as of 21 March, Sweden has reported 15 cases in Stockholm area, including three imported cases.

ECDC assessment

Measles outbreaks continue to occur in EU/EEA countries. There is a 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 the EU/EEA) were declared to have reached the elimination goal for measles, and 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: Belgium, France, Germany, Italy, Poland and Romania.

More 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. Since 10 March 2017, ECDC has been reporting on measles outbreaks in Europe on a weekly basis through epidemic intelligence activities.

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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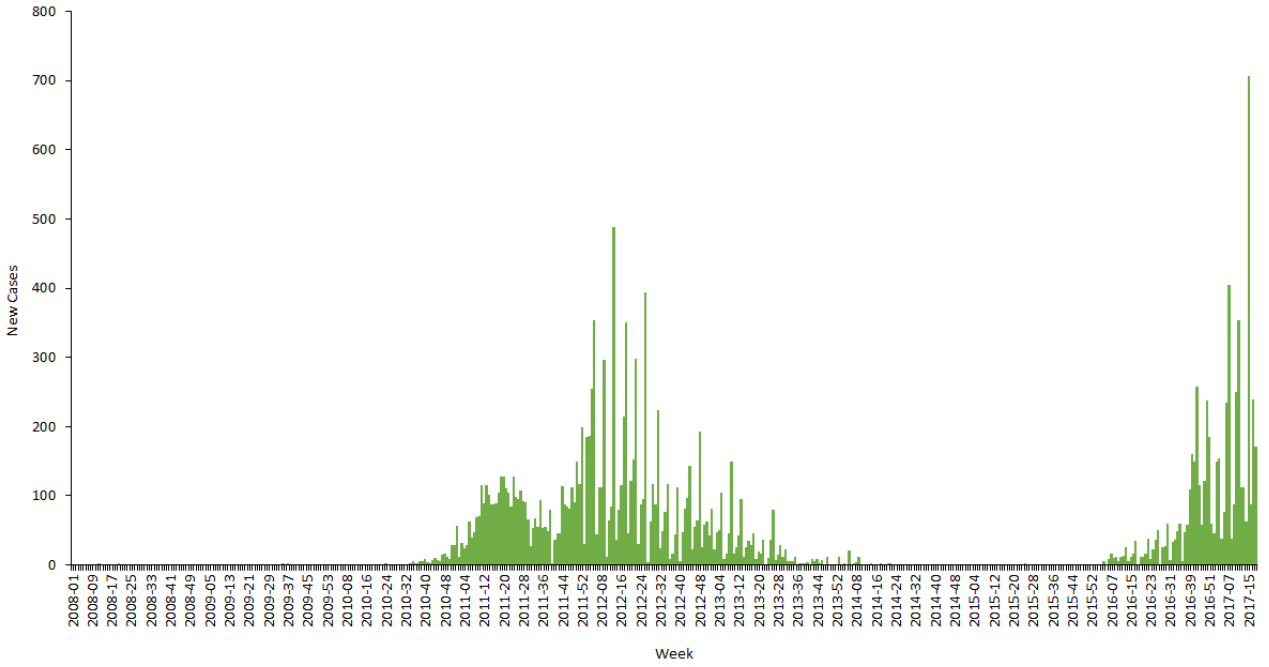
New measles cases per week of reporting, week 2008-01 to 2017-18, Romania

Data source: National Institute of Public Health Romania and TESSy (ECDC)



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

Travel-associated Legionnaires' disease – Dubai, UAE – 2016/2017

Opening date: 10 November 2016 Latest update: 12 May 2017

Epidemiological summary

As of 12 May 2017, 12 EU Member States as well as Switzerland have reported 58 TALD cases with onset of symptoms since 1 October 2016 and with travel history to Dubai within two to ten days prior to illness. Cases were reported by the United Kingdom (27), Sweden (8), the Netherlands (6), Denmark (4), France (3), Germany (3), Austria (1), Belgium (1), the Czech Republic (1), Hungary (1), Ireland (1), Spain (1) and Switzerland (1). Fifty-one cases are associated with commercial accommodation sites and five with private accommodation sites. For two cases, the information was not available. Ten cases spent time in another location in UAE or in a country other than their home country during their incubation period. One case was reported as fatal.

All cases but one are laboratory confirmed. Three cases had their infection further characterised as *Legionella pneumophila* serogroup 1, sequence base type 616, and one as *Legionella pneumophila* serogroup 1, sequence base type 2382. Sequence base type 616 is uncommon in Europe and has been associated with other cases of Legionnaires' disease returning from Dubai in previous years. Sequence base type 2382 is the first such identification worldwide and appears to be closely-related to type 616. One case has been characterised as serogroup 13. UAE authorities have informed ECDC that no increase in cases of statutory notifiable pneumonia was observed in Dubai between October and December 2016.

ECDC assessment

Cases continue to be reported with onset of symptoms in recent weeks, indicating that there is a persistent source of *Legionella* exposure common to travellers with travel history to Dubai. However, it cannot be ruled-out that some travellers may have acquired their infection elsewhere if their travel stay in Dubai was shorter than the range of the incubation period. The increase in cases observed between October 2016 and May 2017 is above that observed in previous years.

Actions

ECDC monitors this event through ELDSNet. ECDC is in contact with EU Member States, the ELDSNet network, the World Health Organization and UAE for information sharing. ECDC published a rapid risk assessment on its website on 23 December 2016 and

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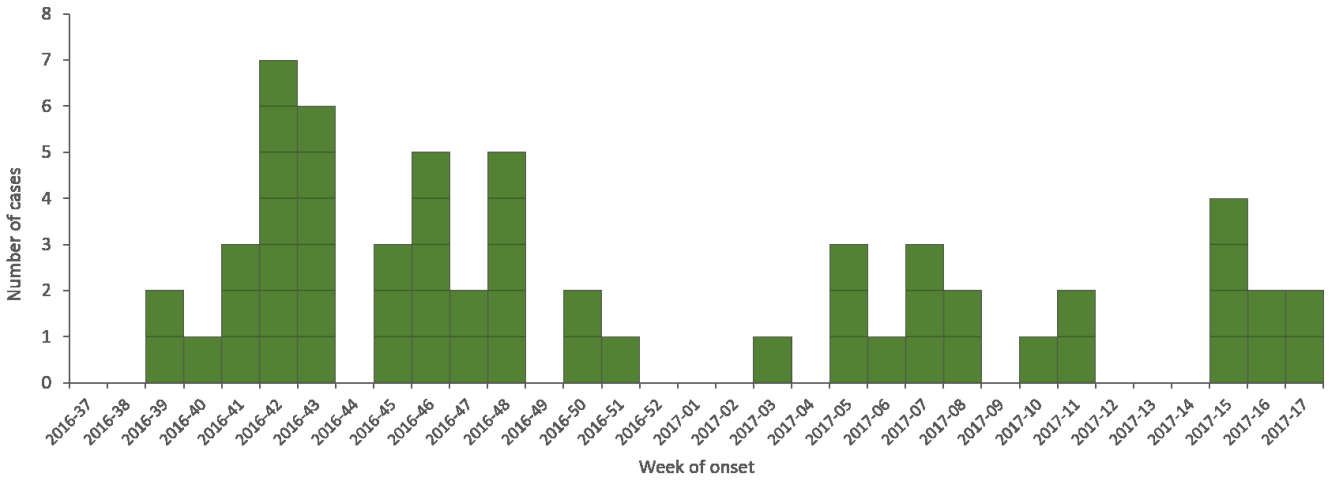
shared an updated rapid risk assessment with the European Commission and EU Member States on 13 January 2017. The conclusions of the rapid risk assessment remain valid. ECDC also posted an epidemiological update on 7 April.

Distribution of travel-associated Legionnaires' disease cases with history of stay in Dubai, United Arab Emirates, by week of onset from 37-2016 and 17-2017, as reported to ELDSNet by 12 May 2017 (n=58 cases)

ECDC



Yellow fever – South America – 2016/2017

Opening date: 16 January 2017 Latest update: 12 May 2017

Epidemiological summary

Brazil:

Between 6 January and 4 May 2017, Brazil has reported 1 392 cases of yellow fever (663 suspected and 729 confirmed), including 294 deaths (45 suspected and 249 confirmed). The case-fatality rate is 21.1% overall and 34.2% among confirmed cases.

States reporting suspected and confirmed autochthonous cases:

- Minas Gerais has reported 708 cases (224 suspected and 484 confirmed), including 180 deaths (16 suspected and 164 confirmed).
- Espírito Santo has reported 518 cases (306 suspected and 212 confirmed), including 94 deaths (23 suspected and 71 confirmed).
- São Paulo has reported 54 cases (37 suspected and 17 confirmed), including seven confirmed deaths.
- Rio de Janeiro has reported 23 cases (12 suspected and 11 confirmed), including four deaths (one suspected and three confirmed).
- Pará has reported 16 cases (12 suspected and four confirmed), including four confirmed deaths.
- Tocantins has reported four cases (three suspected and one confirmed).

States reporting suspected autochthonous cases:

Ten states have reported 69 suspected cases: Goiás (25, including 2 fatal), Paraná (16, including 1 fatal), Bahia (6), Rondônia (6), Distrito Federal (4, including 2 fatal), Rio Grande do Sul (4), Amapá (2), Maranhão (2), Mato Grosso do Sul (2) and Santa Catarina (2).

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On 11 May, media reported the first confirmed case of yellow fever in the state of Amazonas, but no official confirmation has been found as of 12 May.

Other countries in South America:
From the beginning of 2017 to 8 May, five other countries have reported suspected and/or confirmed cases of yellow fever: Peru (14), Colombia (2), Bolivia (1), Ecuador (1) 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 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 updated its rapid risk assessment on 14 April 2017. ECDC is also producing epidemiological updates and a map for travel advice.

Distribution of confirmed human cases of yellow fever in Brazil by week of reporting from 6 January to 4 May 2017

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 12 May 2017

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In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then and up to 11 May 2017, 1 463 cases have been reported to WHO, including at least 552 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) 223 cases, and the fourth wave (weeks 2015-41 to 2016-40) 120 cases. A fifth wave started in October 2016 (week 2016-41), with 662 cases as of 11 May 2017.

The 1 463 cases were reported from Zhejiang (306), Guangdong (258), Jiangsu (245), Fujian (106), Anhui (96), Hunan (91), Shanghai (56), Jiangxi (50), Guangxi (30), Hubei (29), Sichuan (28), Beijing (25), Henan (23), Hong Kong (21), Shandong (21), Guizhou (17), Hebei (15), Xinjiang (10), Chongqing (6), Taiwan (5), Gansu (4), Liaoning (4), Jilin (3), Tianjin (3), Tibet (3), Macau (2), Yunnan (2), Shaanxi (1), and 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:
- 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
- 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 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.

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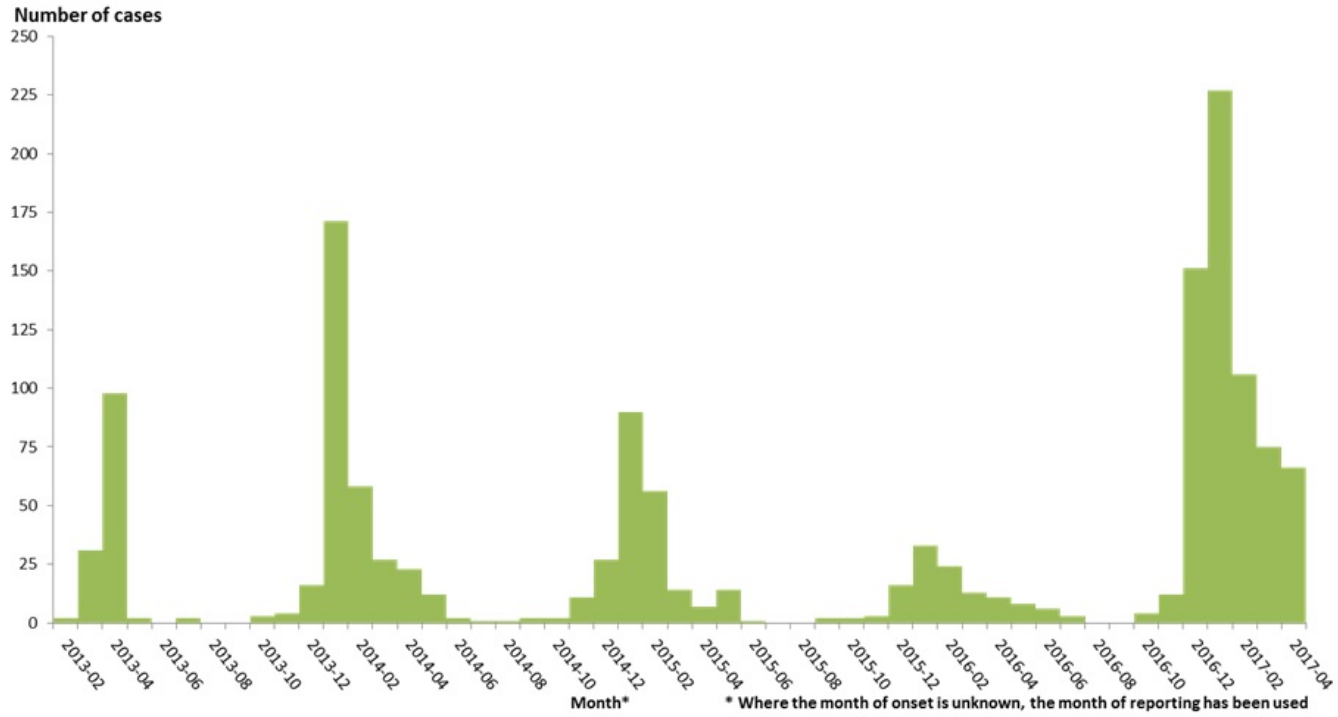
Distribution of confirmed cases of A(H7N9) by first available month, February 2013 to 30 April 2017

ECDC, WHO, Hong Kong



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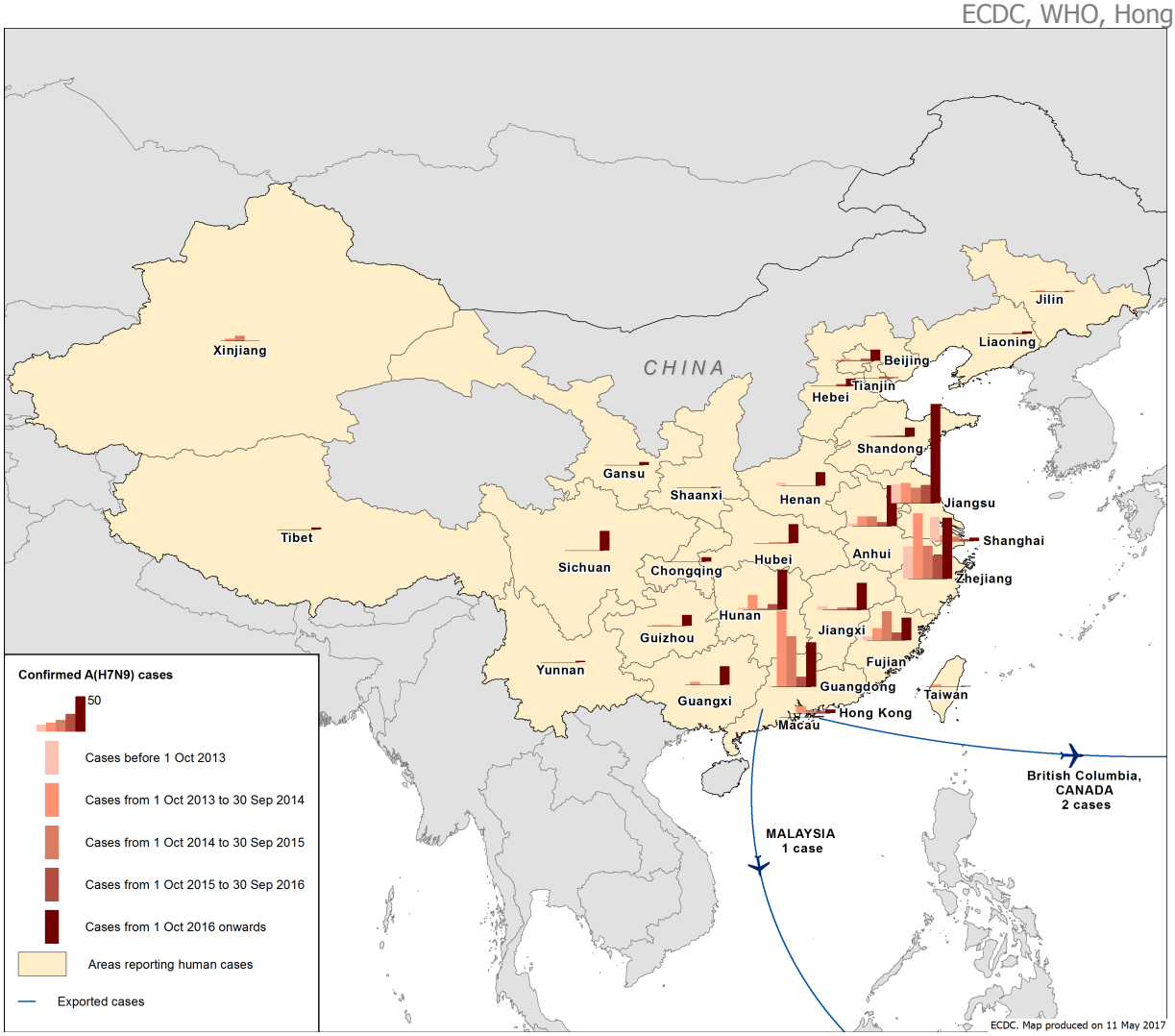
Distribution of confirmed cases of A(H7N9) by five periods (weeks 2013-7 to 2017-19)

ECDC, WHO, Hong Kong



Influenza A(H5N1) and other strains of avian flu – Non EU/EEA countries

Opening date: 15 June 2005

Epidemiological summary

Influenza A(H5N1): Since 2003 and as of 11 May 2017, 859 laboratory-confirmed cases of human infection with avian influenza A(H5N1) virus, including 453 deaths, have been reported from 16 countries. The latest case was reported in April 2017 by Egypt.

Influenza A(H5N6): Since 2014 and as of 11 May 2017, 16 laboratory-confirmed cases of human infection with avian influenza A(H5N6) virus, including six deaths, have been reported globally. All cases occurred in mainland China. The latest case was reported on 1 December 2016.

Sources: ECDC rapid risk assessment | ECDC webpage | EMPRES | OIE | WHO

ECDC assessment

When avian influenza viruses circulate in poultry, sporadic infections or small clusters of human cases are possible in people

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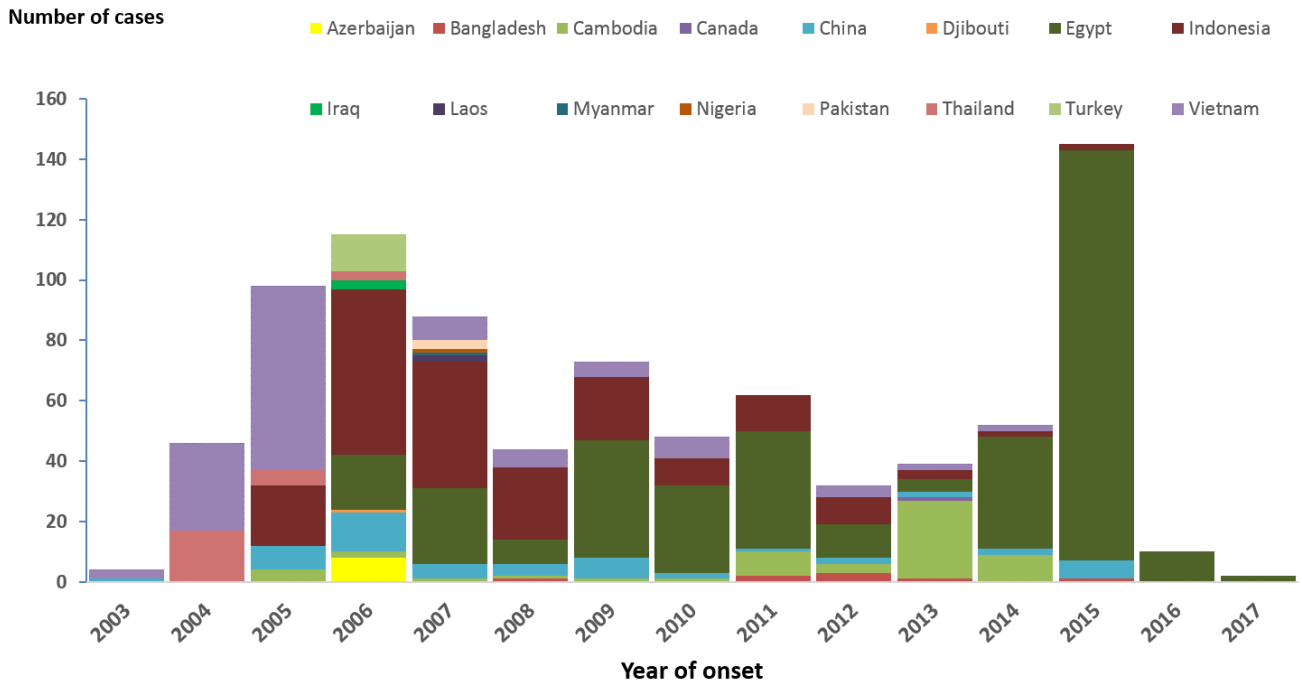
exposed to infected poultry, in households, or contaminated environments, at live bird markets. The viruses remain poorly adapted to humans, and transmission from birds to humans is infrequent. Only limited clusters of human cases have been reported since the first human epidemic of A(H5N1). No sustained human-to-human transmission has been observed. The risk of foodborne transmission, e.g. through the consumption of eggs or meat, is considered to be extremely low.

Actions

ECDC monitors avian influenza strains through epidemic intelligence activities in order to identify significant changes in the epidemiology of the virus. ECDC re-assesses the potential of the A(H5N1) risk to humans on a regular basis.

Distribution of confirmed human cases of A(H5N1) by country of reporting, 2003–2017, as of 11 May 2017

ECDC



Cholera – Multistate (World) – Monitoring global outbreaks

Opening date: 20 April 2006 Latest update: 12 May 2017

Epidemiological summary

***Americas**:*

Haiti: From 1 January to 15 April 2017, Haiti has reported 5 095 cholera cases, including 69 deaths (CFR: 4.1%), in all 10 departments. This represents an increase by 563 cases since the last update in early April, as well as a 59% decrease compared to the same period in 2016.

Dominican Republic: Since the beginning of 2017 and as of week 2017-14, the Dominican Republic has reported 62 cholera cases, including two deaths (CFR: 3.2%), in 10 of the 32 provinces. This represents an increase by 53 cases since the last update in early March, as well as a 91% decrease compared to the same period in 2016.

***Africa**:*

Somalia: Since the beginning of 2017 and as of early May, Somalia has reported 31 674 cholera cases, including 618 deaths (CFR: 2.0%), in 13 of the 18 regions. This represents an increase by more than 10 000 cases since the last update in early April. About 59% of the cases and 67% of the deaths occurred in the South West State. OCHA attributes the outbreak to widespread water shortages, food insecurity and displacement that have stretched sanitation facilities beyond their capacity.

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Ethiopia: Since the beginning of 2017 and as of 20 April, Ethiopia has reported 26 966 cholera cases, including 731 deaths (CFR: 2.7%). This represents an increase by 2 388 cases since the last update in early April.

South Sudan: New cholera outbreaks were confirmed in Yirol West, Mayom and Fashoda counties. Since the start of the outbreak in June 2016 and as of 28 April 2017, South Sudan has reported 6 900 cholera cases, including 222 deaths (CFR: 3.2%), in 10 of the 28 states. This represents an increase by 753 cases since the last update in early April. The case-fatality rate is particularly high in the islands of the Nile and cattle camps that lack immediate access to basic healthcare.

DR Congo: Since the beginning of 2017 and as of 8 April, DR Congo has reported 8 743 cholera cases, including 345 deaths (CFR: 3.5%). This represents an increase by 2 914 cases since the last update in early March, as well as a 20% increase compared to the same period in 2016.

Other countries in Africa: Other countries in Central and West Africa that have reported cholera cases since the beginning of 2017 and as of 8 April include Nigeria (46 cases), Liberia (39), Cameroon (17), Ivory Coast (16), Ghana (8) and Sierra Leone (2). Other countries in Southern Africa that have reported cholera cases since the beginning of 2017 and as of early May include Mozambique (2 131 cases, an increase by 500 cases since early April), Malawi (48), Zimbabwe (7), Tanzania and Zambia. Sudan has also reported cases in 2017.

***Asia**:*

Yemen: Since the start of the outbreak in October 2016 and as of early May 2017, Yemen has reported around 27 000 cholera cases of cholera, including 130 deaths (CFR: 0.5%). This represents an increase by about 3 500 cases since the last update in early April. According to media, a resurgence of a cholera outbreak killed 34 people in the past two weeks. The country's health system and civilian infrastructure are collapsing after two years of conflict. More than eight million people also lack access to drinking water and sanitation.

Other countries in Asia: India has reported cholera cases.

Source: Cholera platform

ECDC assessment

European travellers should seek information on how to prevent cholera infection prior to visiting affected areas.

Actions

ECDC monitors cholera outbreaks globally through its epidemic intelligence activities in order to identify significant changes in epidemiology. Reports are published on a monthly basis.

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The Communicable Disease Threat Report may include unconfirmed information which may later prove to be unsubstantiated.

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