COMMUNICABLE DISEASE THREATS REPORT

CDTR
Week 26, 25 June-1 July 2017

All users

This weekly bulletin provides updates on threats monitored by ECDC.

I. Executive summary

EU Threats

New! Multi-country outbreak of Salmonella Enteritidis phage type 8, MLVA profile 2-9-7-3-2 and 2-9-6-3-2 infections

Opening date: 29 June 2017 Latest update: 30 June 2017

A multi-country outbreak of *Salmonella* Enteritidis phage type (PT) 8 linked to eggs, is ongoing in the EU/EEA. Based on whole genome sequencing (WGS), isolates are part of two distinct but related genetic clusters. A recent increase in cases related to this outbreak is being investigated.

➔Update of the week

Since the ECDC and EFSA joint rapid outbreak assessment published on 7 March 2017, six EU/EEA countries (Belgium, France, Italy, Norway, Sweden and the United Kingdom) have reported 50 confirmed and 12 probable new cases associated with the multi-country outbreak of *Salmonella* Enteritidis phage type 8 infections (MLVA profiles 2-9-7-3-2 and 2-9-6-3-2) ongoing in the EU/EEA. In addition, 12 probable cases were reclassified as confirmed. From 1 May 2016 to 26 June 2017, 14 EU/EEA countries have reported 280 confirmed cases and 257 probable cases.

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

Opening date: 12 December 2016 Latest update: 30 June 2017

EU/EEA Member States are reporting a large increase of hepatitis A virus infection cases in 2017. Among the cases, adult men who have sex with men (MSM) are indicated as an affected population. Since June 2016 and as of 26 June 2017, 1 500 confirmed hepatitis A cases infected with three distinct strains of sub-genotype IA virus have been reported by 16 EU/EEA countries. Most cases are reported among MSM.

➔Update of the week

Update: On 29 June 2017, ECDC published the third update of its risk assessment relating to this event. From 1 June 2016 to 26 June 2017, 16 EU countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden and the United Kingdom) reported 1 500 HAV genotype IA-confirmed cases, belonging to three separate clusters based on genetic sequencing of hepatitis A virus (HAV).

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Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 30 June 2017

Romania has been experiencing a large outbreak of measles since February 2016. Cases continue to be reported despite ongoing response measures implemented at national level through reinforced vaccination activities. Between 1 January 2016 and 23 June 2017, Romania reported 7 282 measles cases, including 30 deaths. In 2016, several other 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. Overall, more than 14 000 cases have been reported in the EU/EEA since January 2016, including 34 deaths.

➔Update of the week

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

West Nile virus – Multistate (Europe) – Monitoring season 2017

Opening date: 30 May 2017

During the June-to-November period of West Nile virus transmission season, ECDC monitors the occurrence of cases of West Nile fever in the EU Member States and the neighbouring countries in order to inform the blood safety authorities about areas with ongoing transmission. In 2016, 214 human cases of West Nile fever were reported in the EU Member States and 267 cases in the neighbouring countries.

➔Update of the week

No cases have been reported so far in 2017.

Non EU Threats

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 30 June 2017

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then, cases continue to be reported from China. 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.

➔Update of the week

During the past week, China reported ten additional human cases of avian influenza A (H7N9) from Beijing (2), Sichuan (2), Anhui (1), Guizhou (1), Hebei (1), Inner Mongolia (1), Jiangsu (1) and Tianjin (1), including two fatal cases.

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

Opening date: 10 November 2016 Latest update: 30 June 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

Since the last CDTR, the United Kingdom has reported two additional cases of TALD with travel history to Dubai.

The first case is a 69-year-old male who visited Dubai from 20 May to 3 June 2017. He stayed in a hotel previously associated with other cases. He developed symptoms on 7 June 2017.

The second case is a 80-year-old male who visited Dubai from 9 to 17 June 2017. He stayed in a hotel not previously associated with other cases. He developed symptoms on 18 June 2017. According to the notification, the case mostly stayed inside the hotel resort but went shopping in a mall.

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

Opening date: 27 January 2017 Latest update: 30 June 2017

Chikungunya, dengue and Zika virus infections are vector-borne diseases that affect 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 being 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 29 June 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 dengue, chikungunya and Zika are:

Chikungunya and dengue:
- No autochthonous cases of chikungunya and dengue virus infection have been reported in EU/EEA Member States in 2016 and 2017.
- Since the beginning of 2017 and as of 23 June 2017, Sri Lanka has reported 69 380 dengue cases, including at least 205 deaths, compared with 54 727 cases, including 78 deaths, during the entire year 2016. Approximately 42% of dengue cases were reported from the Western Province.

Zika:
- Since the last Zika monthly update in the CDTR on 26 May 2017, the changes in the Zika map are:
  *In India, the state of **Gujarat** changed to 'areas with virus transmission following previous virus circulation (WHO cat. 2)' following the detection of three laboratory-confirmed cases of Zika virus disease in Bapunagar area, Ahmedabad district. As a result, the bordering Indian states and Pakistan changed to 'areas bordering a WHO category 2 area (sub-category of WHO Cat. 4)'. These changes have been reflected on ECDC's website since 29 May 2017.
  ***Guadeloupe** and **Martinique** changed from 'areas with virus transmission following virus new/re introduction (WHO cat. 1)' to 'areas with interrupted transmission (WHO Cat. 3)'.
- A study published on 16 June revealed that in the US territories, among completed pregnancies with laboratory evidence of recent possible maternal Zika virus infection, about one in 20 foetuses or infants had a possible Zika-associated birth defect. When analysis was restricted to nucleic acid test-confirmed Zika virus infection in the first trimester, about one in 12 foetuses or infants had a possible Zika-associated birth defect.

Ebola virus disease – Democratic Republic of the Congo – 2017

Opening date: 15 May 2017 Latest update: 29 June 2017

On 9 May 2017, the Democratic Republic of the Congo (DRC) notified the World Health Organization (WHO) of an outbreak of Ebola virus disease (EVD) in Likati Health Zone, Bas Uele Province, close to the border with the Central African Republic. Investigations and laboratory results confirmed an Ebola outbreak of subtype Zaire on 11 May 2017.

➔Update of the week
Between 22 and 29 June 2017, WHO did not report any new cases.

Middle East respiratory syndrome coronavirus (MERS-CoV) – Multistate

Opening date: 24 September 2012 Latest update: 30 June 2017

Since the disease was first identified in Saudi Arabia in September 2012, approximately 2 000 MERS-CoV cases have been detected in over 20 countries. In Europe, eight countries have reported confirmed cases, all with direct or indirect connection with the Middle East. The majority of MERS-CoV cases continue to be reported from the Middle East. The source of the virus remains unknown, but the pattern of transmission and virological studies point towards dromedary camels in the Middle East as being a reservoir from which humans sporadically become infected through zoonotic transmission. Human-to-human transmission is amplified among household contacts and in healthcare settings.

➔Update of the week
Since the last update of MERS-CoV on 9 June 2017, 41 additional cases of MERS-CoV have been reported, 40 from Saudi Arabia and one reported by Lebanon in a Lebanese citizen returning from Saudi Arabia.

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II. Detailed reports

New! Multi-country outbreak of Salmonella Enteritidis phage type 8, MLVA profile 2-9-7-3-2 and 2-9-6-3-2 infections

Opening date: 29 June 2017 Latest update: 30 June 2017

Epidemiological summary

Since the ECDC and EFSA joint rapid outbreak assessment published on 7 March 2017, six EU Member States (Belgium, France, Italy, Norway, Sweden and the United Kingdom) have reported 50 confirmed and 12 probable new cases associated with the multi-country outbreak of *Salmonella* Enteritidis phage type 8 infections (MLVA profiles 2-9-7-3-2 and 2-9-6-3-2) ongoing in the EU/EEA. In addition, 12 probable cases were reclassified as confirmed. From 1 May 2016 to 26 June 2017, 14 EU/EEA countries have reported 280 confirmed cases and 257 probable cases.

Cases reported before May 2016 are classified as historical cases: from 2012 to 31 March 2016, 107 historical confirmed cases and 24 probable cases were also reported.

The outbreak investigation identified eggs originating from three Polish packing centres as the vehicle of infection in this outbreak. Following the implementation of control measures in Poland in November 2016, the reporting of new outbreak cases sharply decreased. Since March 2017, the number of newly reported cases has increased with the reporting of 63 outbreak cases, 53 confirmed and 10 probable. The isolates from the 53 confirmed cases belonged to both WGS clusters associated with this outbreak: 39 isolates were part of the WGS cluster_175 (36 from the United Kingdom, two from France and one from Sweden) and 14 isolates were part of the WGS cluster_360 (11 form the United Kingdom and three from France). The United Kingdom reported 47 of the 63 outbreak cases identified since March 2017.

Since March 2017, 30 outbreak cases had available information on travel during the incubation period. Eight of these were infected abroad: five in Portugal, one in Poland, one in Hungary and one either in the United Kingdom or in Portugal. Outbreak cases were reported in travellers to Hungary and Poland also in previous weeks. However, confirmed cases with a travel history to Portugal have been reported only since mid-April 2017. It is therefore plausible that Portugal, that has not reported outbreak cases so far, has been affected by this outbreak only recently.

Source: rapid outbreak assessment

ECDC assessment

Evidence from epidemiological, microbiological, environmental and tracing investigations identified eggs originating from Poland as the vehicle of infections in this outbreak. The current re-emergence of cases infected with the outbreak strains, mostly occurring in the United Kingdom, raises the possibility of the circulation of a vehicle contaminated at a persistent source still unidentified.

Actions

ECDC continues to monitor the human cases associated with this event and supports sequencing services for countries reporting probable cases with linked isolates with MLVA profile 2-9-7-3-2 or 2-9-7-3-2. EU/EEA countries should consider interviewing new outbreak cases.

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Distribution of cases by week and case classification (n=646), EU/EEA, January 2015 to June 2017, as of 26 June 2017

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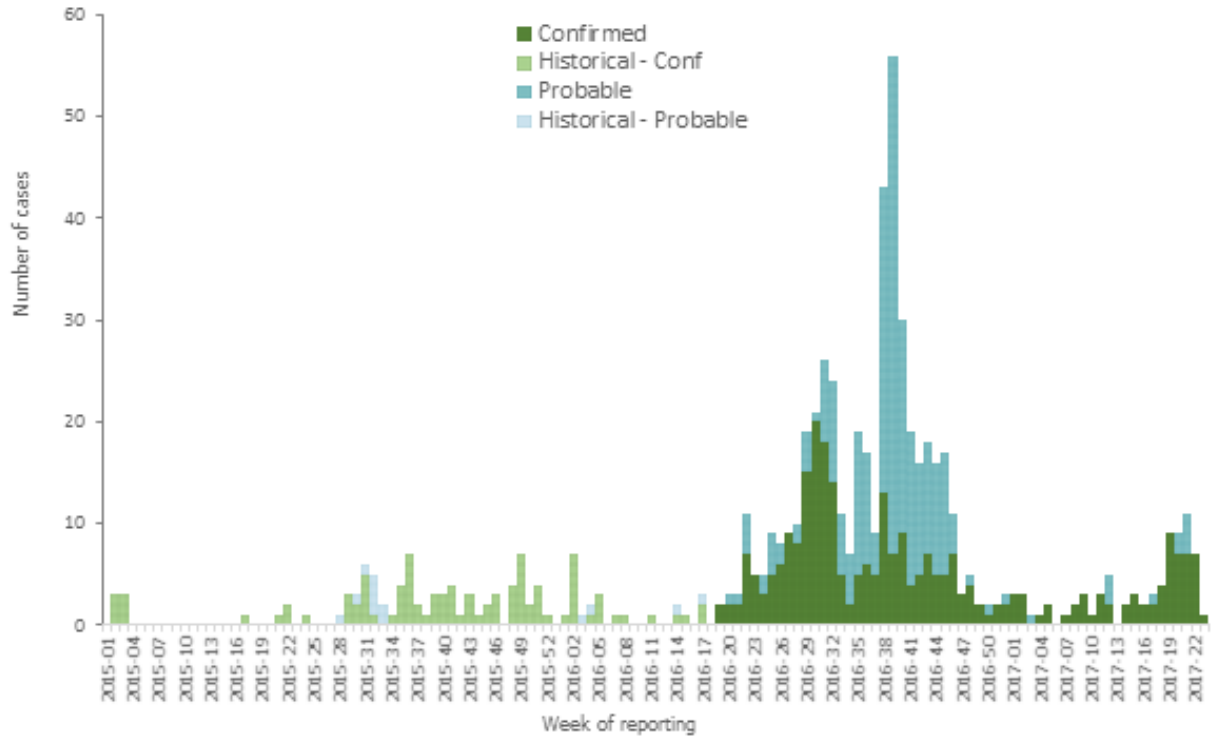
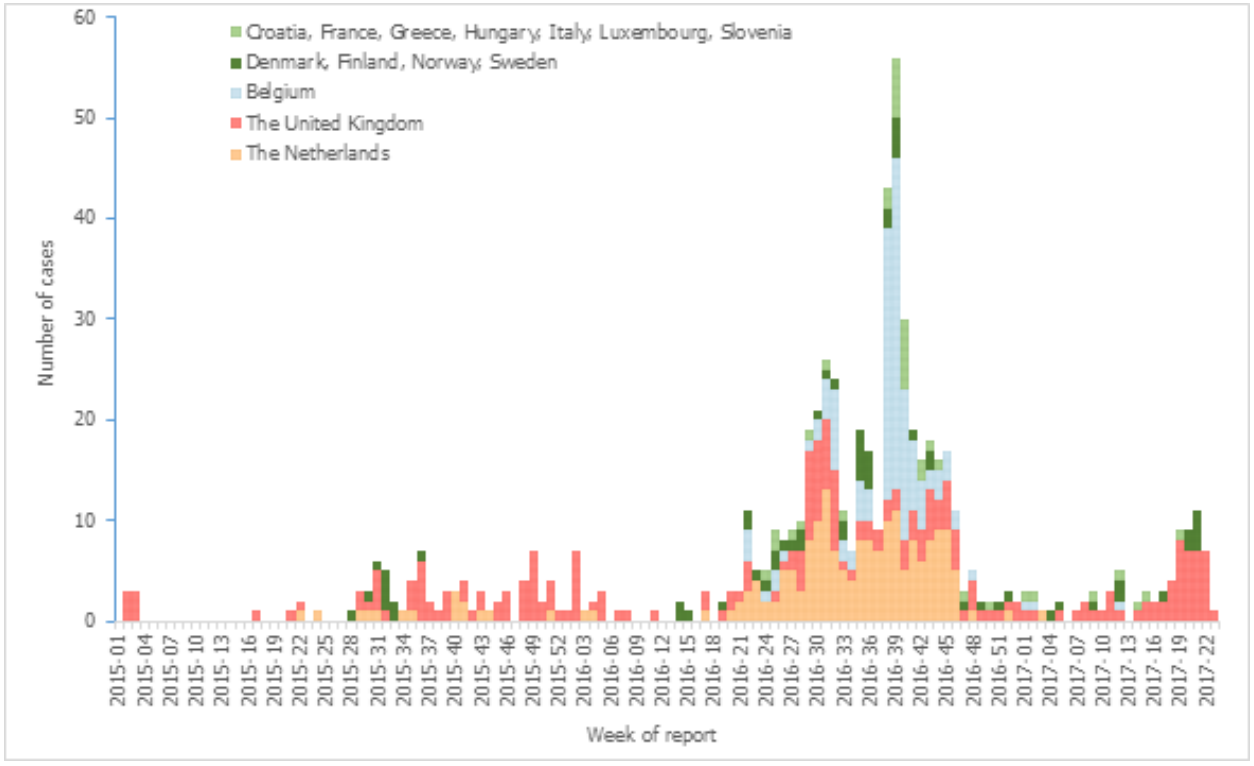


Outbreak cases by week and reporting country (n=646), EU/EEA, January 2015 to June 2017, as of 26 June 2017

ECDC



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

Opening date: 12 December 2016 Latest update: 30 June 2017

Epidemiological summary

Between 1 June 2016 and 26 June 2017, 16 EU/EEA countries (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden and the United Kingdom) reported 1 500 HAV genotype IA confirmed cases. Investigations of these events have identified three separate clusters based on genetic sequencing of the hepatitis A virus (HAV).

Event 1, cluster VRD_521_2016.
As of 26 June 2017, 16 EU/EEA Member States had reported 806 cases associated with this cluster initially reported by the United Kingdom on 6 December 2016 through an EPIS FWD urgent inquiry. Most cases were reported by Spain (223), France (193), Italy (125), Portugal (144) and the United Kingdom (56). Of the 796 cases with gender information, 742 (93%) are male and 288 (85%) of 339 documented cases identify themselves as MSM. The median age of cases is 33 years, ranging from 0 to 79 years. Twenty-seven of the 71 cases with a travel history reported visiting Spain during the incubation period.

Event 2, cluster RIVM-HAV16-090.
As of 26 June 2017, 13 EU/EEA Member States had reported 509 cases associated with this cluster initially reported by the Netherlands on 14 October 2016 through the Early Warning and Response System (EWRS). The first two Dutch cases reported visiting the EuroPride festival in Amsterdam between 23 July and 7 August 2016. Most cases have been reported by the United Kingdom (168), France (125), the Netherlands (46), Italy (45) and Belgium (31). Of the 501 cases with gender information, 461 (92%) are in males, and 243 (80%) of 302 documented cases identify themselves as MSM. The median age of cases is 34 years, ranging from<1 to 88 years. Of the 88 cases with a travel history during the incubation period, 26 travelled to Spain and 11 to Germany.

Event 3, cluster V16-25801.
As of 26 June 2017, 11 EU Member States had reported 119 cases with a viral RNA sequence matching V16_25801 or with a maximum of two nucleotides difference. Most cases were reported from Germany (41), the United Kingdom (39) and Spain (11). Of the 119 cases, 112 (94%) are in males, and 41 of 47 documented cases identify themselves as MSM. The median age of cases is 34 years and ranges from 16 to 61 years. Nine of 24 cases with information on travel had visited Spain during the incubation period.

Additional information on national investigations
In addition to the above-mentioned confirmed cases, Austria, Denmark, Greece, Ireland, Italy, Malta, the Netherlands and Spain reported 2 660 hepatitis A cases, probably or suspected to be associated with this outbreak. Sequencing had not been performed for these cases and it could therefore not be confirmed whether they were part of the outbreak. Of the 2 660, 938 (35%) were considered to probably be associated with this outbreak, because they were reported in individuals who had had contact with a confirmed case, self-identified as MSM, had sexual contact with MSM or attended MSM venues or events. Spain reported 537 (57%) and Italy 350 (37%) of these cases. The remaining 1 722 (65%) were considered suspected to be associated with this outbreak, because they were reported in males aged between 18-45 years without identified exposure to contaminated food or water. Spain reported 1 338 (78%) and Italy 294 (17%) of these cases.

ECDC assessment

The peak of the outbreak is unlikely to have passed yet as confirmed cases from April 2017 onwards have not yet been reported from some of the affected countries, notably Spain and Italy, which reported a large proportion of the overall number of confirmed cases up to March 2017. Confirmed cases significantly underestimate the true extent of the outbreak due to the challenges with regard to complete and timely reporting of sequencing results. Only a minority of EU countries sequence a sufficiently large proportion of strains in a timely fashion.
In addition to confirmed cases, 2 660 hepatitis A cases are also considered probably or suspected to be associated with this outbreak. Reported cases are limited to those attending healthcare facilities and a very large proportion of mild or asymptomatic infections associated with this outbreak may not have been identified or reported.

The multinational dimension of these clusters may be explained by the highly interconnected sexual networks among MSM in Europe. In at least two EU Member States, the United Kingdom and Germany, secondary cases have been linked to travel-associated index cases. The circulation of three different HAV genotype IA strains in the MSM population is likely to be the result of several introductions into these networks. There is a risk of spread into other groups that are at increased risk of infection, particularly people who inject drugs and other population groups (e.g. Roma population) that can sustain transmission for a prolonged period in extended networks, as was the case in 2008 and 2009.

Transmission in the community can be related to secondary transmission to contacts of infected cases in the high-risk groups, contamination of food items by infected food handlers and possibly via substances of human origin e.g. blood transfusion or tissue and organ donation. Most of the cases reported are among HAV-unvaccinated adult MSM, but evidence exists for secondary

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cases among the general population. As cases have also been reported in food handlers, subsequent foodborne transmission would not be unexpected. Several reports of household transmission linked to these clusters highlight the need for early contact tracing and post-exposure prophylaxis of close contacts in order to avoid infections among unvaccinated household contacts. The contamination of a food item early in the food chain may lead to wide-scale transmission into the general population. A change in the profile of cases, such as an increase in the proportion of cases in females or in age-groups under 18 years of age or over 45 years of age, could indicate a possible increased transmission in the general population.

There is also a risk of HAV transmission through asymptomatic or incubating viraemic donors of substances of human origin (SoHO). Most symptomatic cases are considered non-infectious after the first week of jaundice.
There is no risk of HAV transmission through plasma-derived medicinal products because human plasma (pooled and treated for virus inactivation) is tested by nucleic acid testing (NAT) for HAV and the production process effectively reduces the HAV in plasma-derived medicinal products.

Actions

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, the following groups could be prioritised for vaccination, in line with the national vaccine recommendations:
• MSM living in areas where there are ongoing outbreaks;
• MSM travelling to destinations reporting outbreaks of hepatitis A among MSM;
• MSM attending Pride festivals this summer, where the likelihood of contact with HAV-infected individuals could be elevated (provision of vaccination at Pride festival venues could be considered);
• MSM at risk of severe outcome as a result of hepatitis A, for example those with chronic liver disease, hepatitis B and/or hepatitis C and those who inject drugs.
In the context of the current outbreaks of hepatitis A, it is suggested that vaccination be promoted and offered to MSM attending the WorldPride festival in Madrid, 23 June–2 July 2017 and other Pride festivals this summer, where the likelihood of contact with HAV-infected individuals could be elevated. However, limited HAV vaccine availability in some countries may have an impact on the implementation of these measures.

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Distribution of hepatitis A cases, by month of report and genetic sequence, June 2016 to June 2017, as of 26 June 2017, EU/EEA (n=1 420*)

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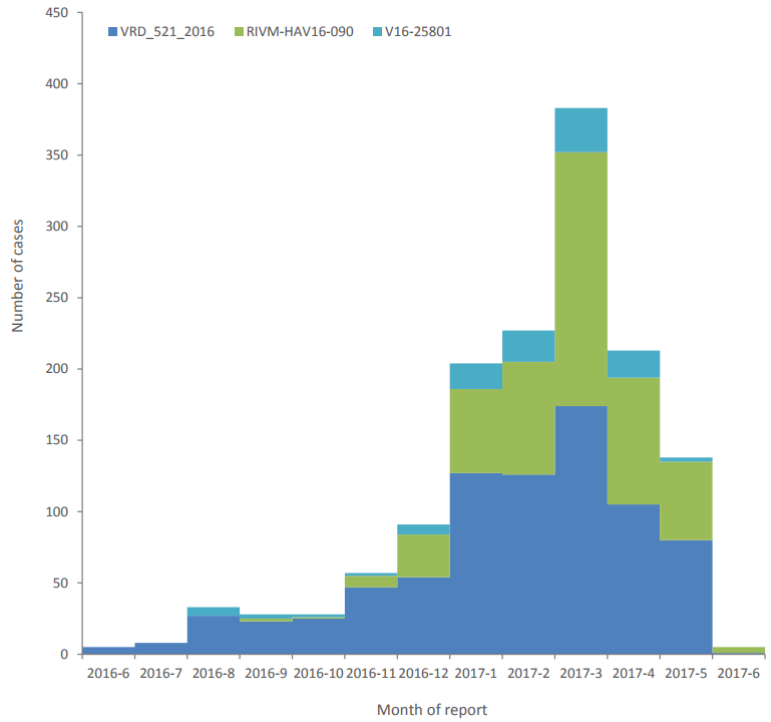

** An additional 80 cases with missing date of report are not included, 66 of which were also lacking information on cluster.*

Measles – Multistate (EU) – Monitoring European outbreaks

Opening date: 9 February 2011 Latest update: 30 June 2017

Epidemiological summary

EU/EEA countries with updates since last week:

Belgium: Since 23 June 2017 as of 28 June, media quoting health authorities reported four confirmed and around 20 suspected cases of measles in a prison in Gent.

Bulgaria: Since mid-March 2017 and as of 27 June, Bulgaria reported 145 cases in Plovdiv, an increase of five cases since the previous CDTR, and one new measles case in Pazardzhik, Bulgaria, which brings the total number of cases to 16 in that region. Bulgaria also reported four cases in Montana.

Germany: Since the beginning of 2017 and as of 21 June, Germany has reported 751 cases. This is an increase of 28 cases since the previous CDTR. In the same period in 2016, Germany reported 119 cases.

Italy: Since the beginning of 2017 and as of 18 June, Italy has reported 3 074 cases in 18 of the 21 regions. Among these, 237 cases are healthcare workers. The median age is 27 years, 89% of the cases were not vaccinated and 7% received only one dose of vaccine. On 23 June 2017, media reported the death in Italy of a six-year-old Italian boy suffering from leukaemia due to measles. He most likely caught measles from an unvaccinated older brother. On 28 June 2017, another media report mentioned one additional death in Italy of a nine-year-old girl from Rome, who died in April but whose death was not registered until now.

Romania: Between 1 January 2016 and 23 June 2017, Romania has reported 7 282 cases, including 30 deaths. A possible 31st death is under investigation. Cases are either laboratory-confirmed or have an epidemiological link to a laboratory-confirmed case. Infants and young children are the most affected group. Forty-one of the 42 districts have reported cases, Timis (western part of the country closest to the border with Serbia) is the most affected district with 1 167 cases. Vaccination activities are ongoing in order to cover communities with suboptimal vaccination coverage.

Spain: Since the beginning of 2017 and as of 18 June, Spain reported 129 measles cases. Most of the cases are due to an

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outbreak in Barcelona (46 cases) at the beginning of the year and an on-going outbreak in Navarra, in northern Spain (42 cases).

EU/EEA countries with no updates since last week:

Austria: Since the beginning of 2017 and as of 8 June, Austria has reported 78 cases. This exceeds the cumulative number of cases reported in 2016.

Czech Republic: As of 16 June 2017, the Moravian-Silesian region reported 130 measles cases, 123 of which were laboratory-confirmed. Nineteen cases are among healthcare workers.

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 May, France has reported 295 cases, almost six times the number of reported cases in 2016 over the same period (47 cases). The cases are mainly linked to an outbreak in Lorraine (60 cases between February and April 2017) and several outbreaks in New Aquitaine and Occitania. The incidence is highest in children under one year (5.2/100 000 with 43 cases), which represents 14.6% of cases declared. Two cases of encephalitis and 22 cases of severe pneumonia have been recorded since the beginning of the year. Of the cases with known vaccination status (258 cases out of 295), 190 (74%) were not vaccinated, 40 (16%) had received a single dose, 25 (10%) had received two doses and for three cases (1%) the number was unknown.

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

Iceland: On 31 March 2017, Iceland reported two cases in 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.

Portugal: Since the beginning of 2017 and as of 5 June, Portugal has reported 31 confirmed cases. Of these 20 (65%) were over 18 years of age, 19 (61%) were unvaccinated, 13 (42%) are health professionals, and 14 (45%) were hospitalised. Twenty-two cases have been confirmed in the regions of Lisbon and Vale do Tejo, seven cases in the Algarve, one in the North and one in Alentejo. One death has been reported.

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

Sweden: Since mid-April and as of 31 May, Sweden has reported four cases in the south-western part of the country. Earlier in 2017, Sweden reported 15 cases in the Stockholm area, including three imported cases.

United Kingdom: On 6 June, Public Health Wales reported four cases in a high school in Newport, Wales. During the first three months of 2017, England reported 17 confirmed cases, compared with 37 between October and December 2016. Northern Ireland has reported one case and Scotland has reported no cases so far this year.

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 deemed 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. On 15–17 June 2017, the sixth meeting of the RVC for Measles and Rubella elimination was held in Bucharest, Romania. The results of this meeting will be available shortly.

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.

ECDC link: Measles page

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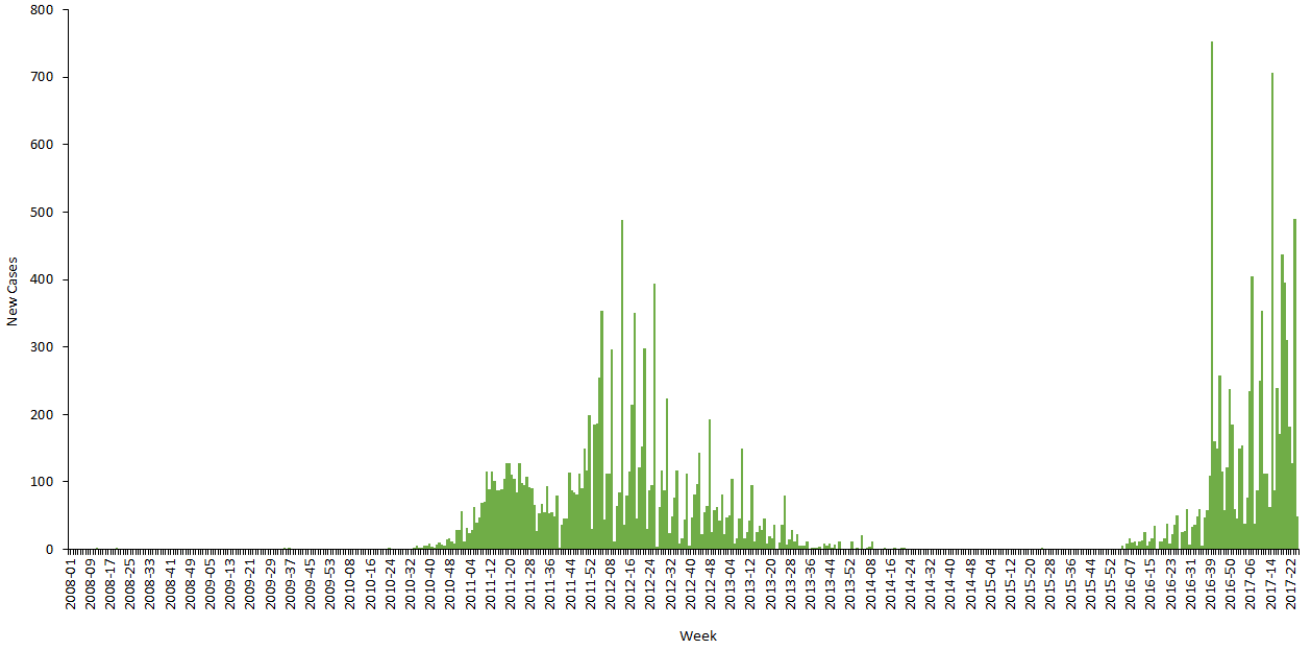
Actions

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

New measles cases per week of reporting, week 2008-1 to 2017-25, Romania

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



West Nile virus – Multistate (Europe) – Monitoring season 2017

Opening date: 30 May 2017

Epidemiological summary

Since the beginning of the 2017 transmission season and as of 29 June 2017, no cases of West Nile fever in humans have been reported in the EU Member States and the neighbouring countries.

Source: ECDC WNF page

ECDC assessment

No human cases in EU Member States have been notified at this early stage of the transmission season.

Actions

Since 2011, ECDC has been producing weekly West Nile fever maps during the transmission season to inform blood safety authorities of West Nile fever-affected areas.

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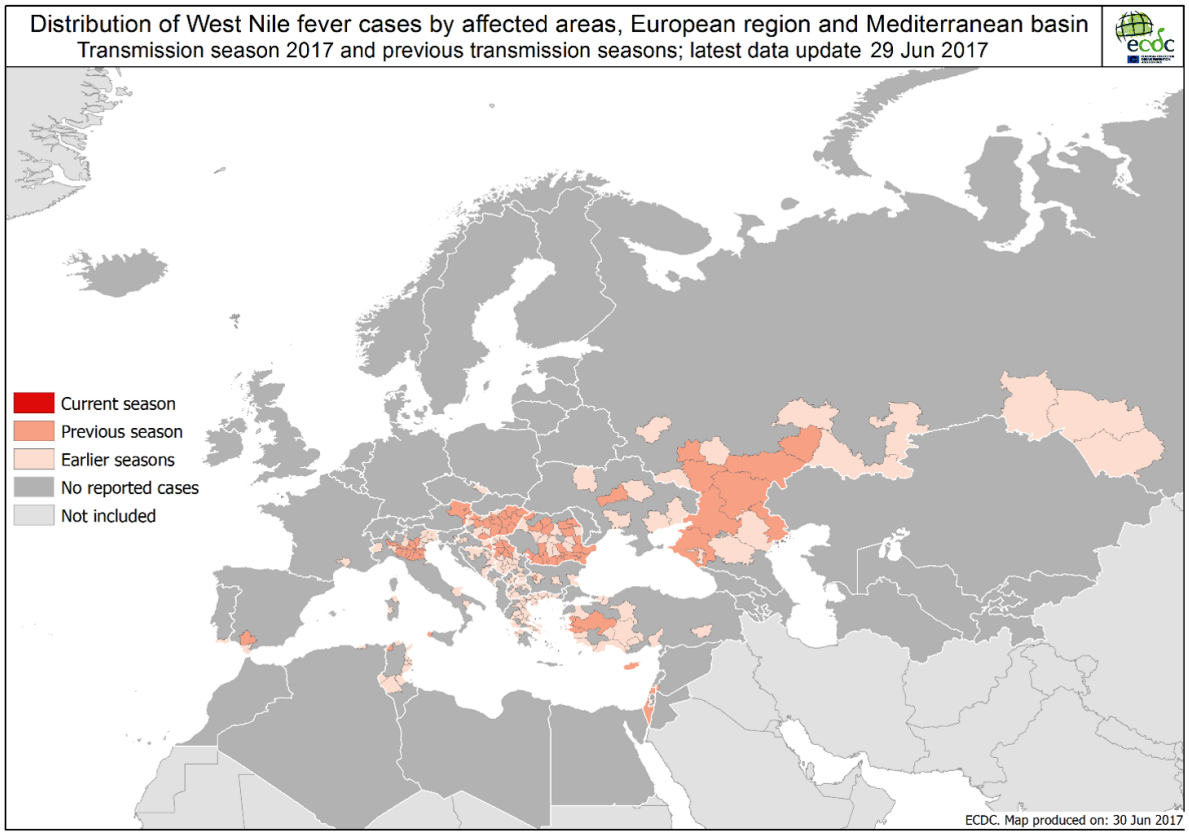
Reported cases of West Nile fever, transmission season 2017 and previous transmission season, as of 29 June 2017



Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 30 June 2017

Epidemiological summary

In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then and up to 20 June 2017, 1 548 cases have been reported, including 565 deaths. The 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 750 cases as of 29 June 2017.

The 1 548 cases were reported from Zhejiang (310), Guangdong (258), Jiangsu (250), Fujian (107), Anhui (99), Hunan (93), Shanghai (57), Jiangxi (52), Sichuan (38), Beijing (35), Guangxi (31), Hubei (31), Hebei (29), Henan (28), Shandong (28), Hong Kong (21), Guizhou (19), Xinjiang (10), Chongqing (9), Gansu (5), Shaanxi (7), Taiwan (5), Tianjin (5), Liaoning (4), Jilin (3), Tibet (3), Inner Mongolia (2), Macau (2), Shanxi (2), Yunnan (2) and three imported cases were reported in Canada (2) and Malaysia (1).

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

ECDC assessment

This is the fifth winter season in the northern hemisphere with human cases caused by influenza 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.

During the current wave a new influenza A(H7N9) virus with mutations in the haemagglutinin gene – indicating high pathogenicity in poultry – was detected in eight human cases as well as in environmental and poultry samples. It is unclear at the moment if the newly emerged, highly-pathogenic avian influenza virus A(H7N9) will replace the low-pathogenic virus or if both will co-circulate in the bird population. Although the genetic changes in influenza 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 influenza 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:
- persons 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 influenza 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 is preparing the seventh update of its rapid risk assessment, addressing the genetic evolution of influenza A(H7N9) virus in China and the implications for public health. This ongoing outbreak not related with a specific accommodation site suggests the persistence of an environmental source.

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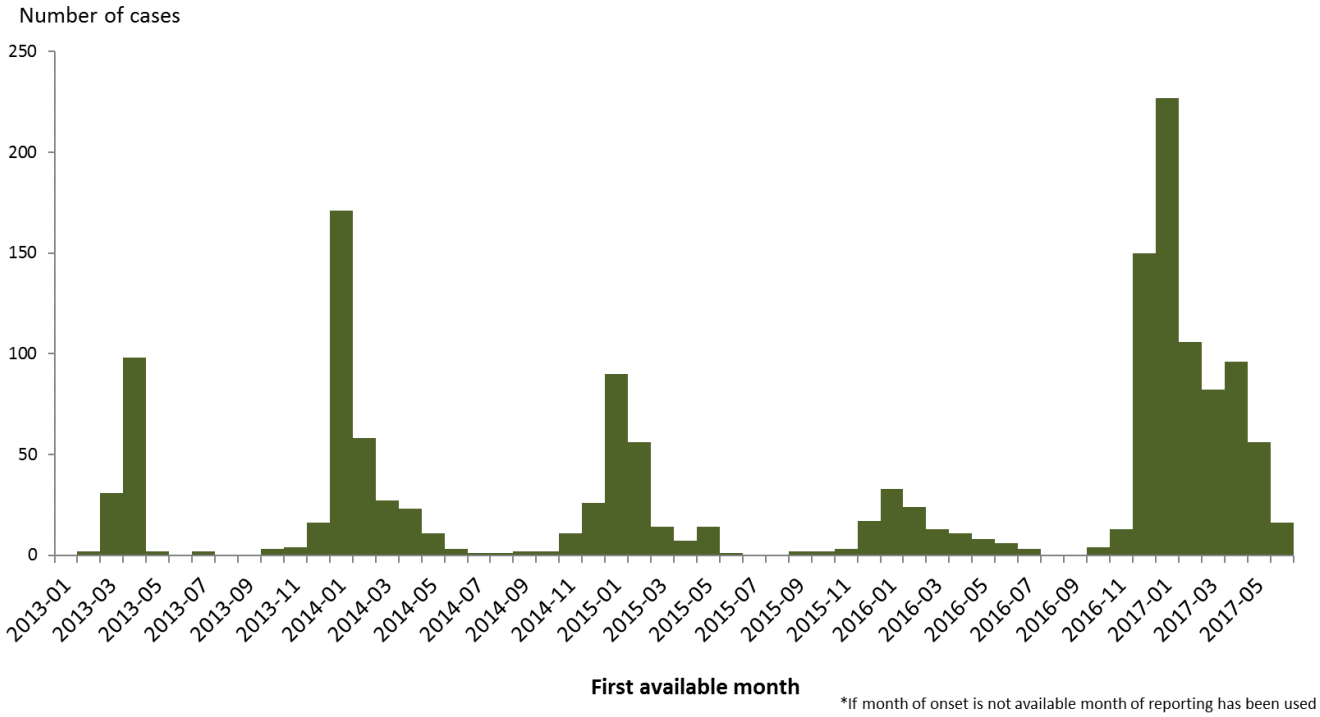
Distribution of confirmed cases of A(H7N9) by first available month, February 2013 to 21 June 2017

ECDC, WHO, Hong Kong MoH



*If month of onset is not available month of reporting has been used

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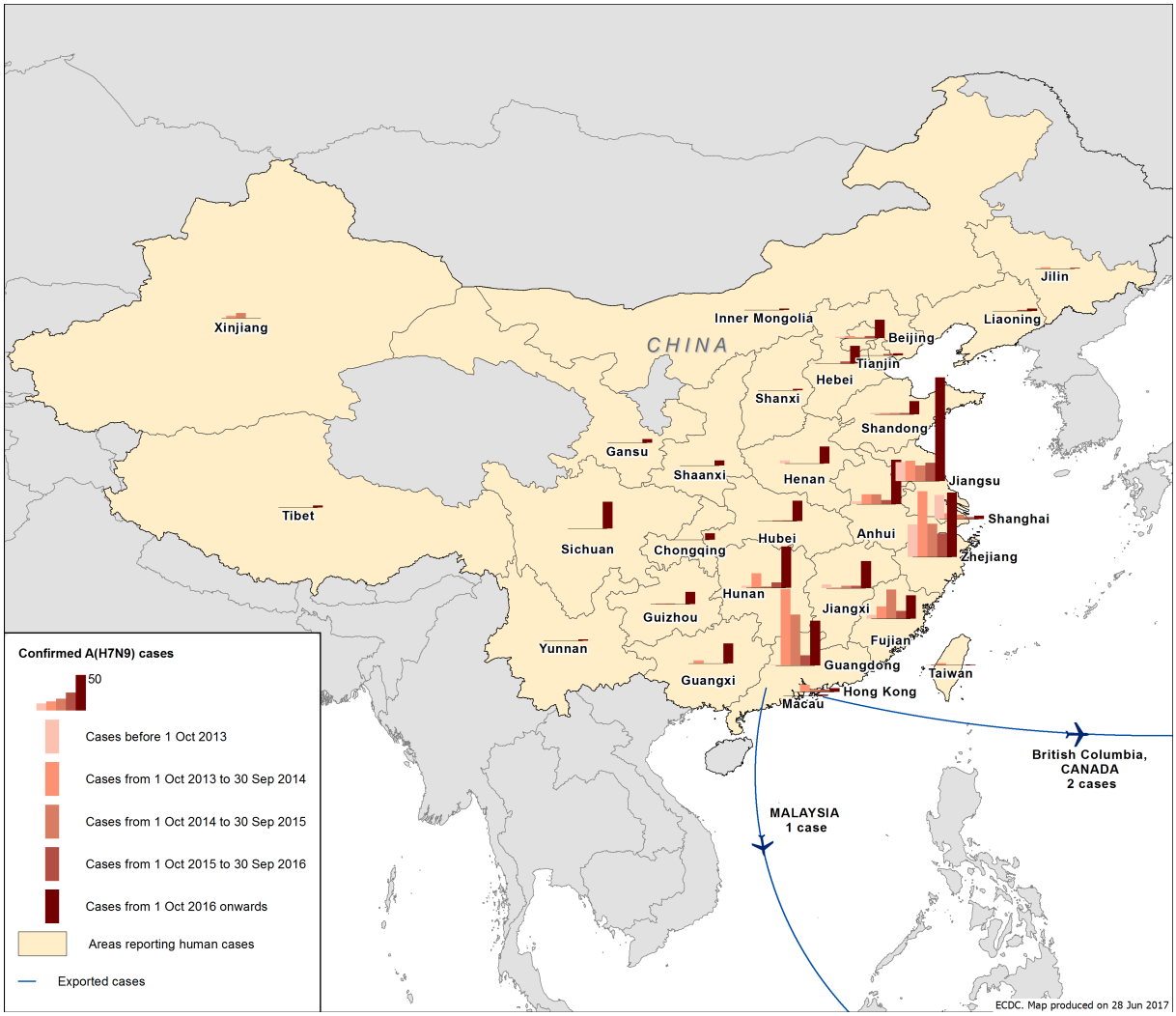
Distribution of confirmed cases of A(H7N9) by five seasons, February 2013 to 21 June 2017

ECDC



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

Opening date: 10 November 2016 Latest update: 30 June 2017

Epidemiological summary

As of 27 June 2017, 13 European countries have reported 67 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 (32), Sweden (8), Germany (6), the Netherlands (6), Denmark (4), France (4), Austria (1), Belgium (1), the Czech Republic (1), Hungary (1), Ireland (1), Spain (1) and Switzerland (1). Sixty-one cases are associated with commercial accommodation sites and six with private accommodation sites. Thirteen cases spent time in another location in UAE or in a country other than their home country during the incubation period. Two cases were reported as fatal.

All cases are laboratory confirmed. Five cases had their infection further characterised as *Legionella pneumophila* serogroup 1, sequence type 616 and one as *Legionella pneumophila* serogroup 1 sequence type 2382. Sequence type 616 is uncommon in Europe and has been associated with other cases of Legionnaires' disease returning from Dubai in previous years, while sequence type 2382 is the first such identification worldwide and appears to be closely-related to type 616 (personal communication,

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ELDSNet network). Two cases have been characterised as *Legionella pneumophila* serogroup 2-14, sequence type 1327. 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 stay in Dubai was shorter than the range of the incubation period. The increase in cases observed between October 2016 and June 2017 is above the increase observed in the same period in previous years.

Actions

ECDC is monitoring this event through ELDSNet. ECDC is in contact with EU Member States, the ELDSNet network, the World Health Organization and UAE to share information. ECDC published a rapid risk assessment on its website on 23 December 2016 and 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 22 June 2017.

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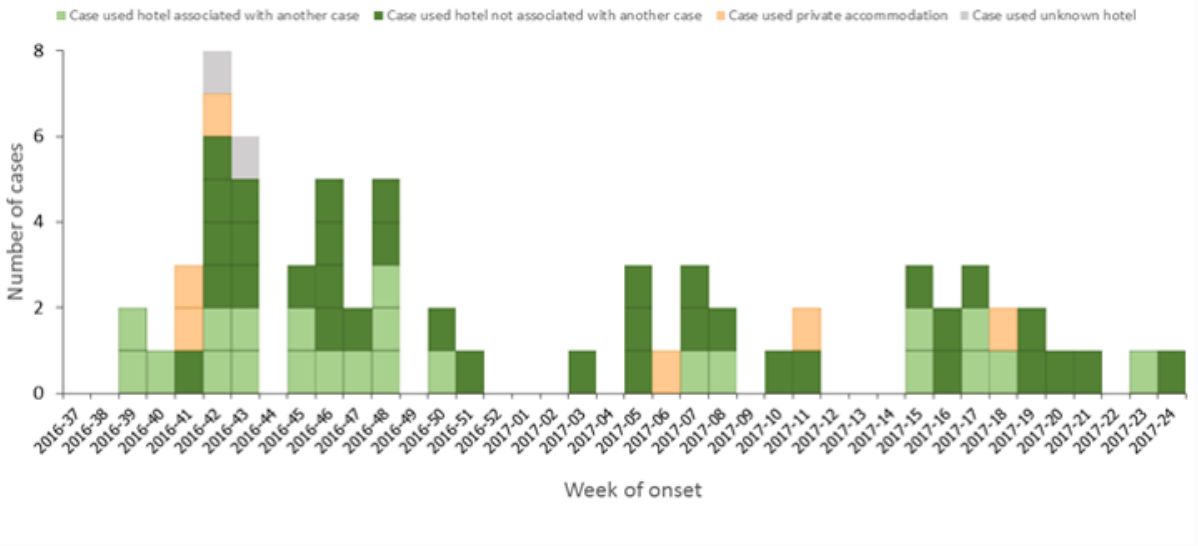
Distribution of travel-associated Legionnaires' disease cases with history of stay in Dubai, United Arab Emirates, by week of onset and accommodation site clustering, weeks 37/2016–24/2017, as reported to ELDSNet by 28 June 2017 (n=67 cases)

ECDC



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

Opening date: 27 January 2017 Latest update: 30 June 2017

Epidemiological summary

Europe:

Dengue and chikungunya:

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

However, since the beginning of the year, several European countries have reported imported dengue and chikungunya cases: Italy has reported an imported chikungunya case and 25 imported dengue cases (as of April 2017), and France has reported three imported chikungunya cases and 27 imported dengue cases.

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***Zika**:*
No mosquito-borne Zika virus transmission has been reported in EU/EEA Member States in 2016 and 2017.

Since June 2015 (week 26) and as of 22 June 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 2 182 travel-associated Zika virus infections through The European Surveillance System (TESSy). Over the same time period, nine EU/EEA Member States reported 118 Zika cases among pregnant women.

Americas and the Caribbean:
***Chikungunya**:*
Since the beginning of 2017 and as of 23 June, PAHO has reported 88 409 suspected and confirmed chikungunya cases in the Americas and Caribbean region. This is an increase by 40 268 cases since the last monthly update on 24 May 2017. Most cases are reported by Brazil (80 949), Bolivia (2 686) and Peru
(1 182).

***Dengue**:*
Since the beginning of 2017 and as of 23 June, PAHO has reported 274 534 suspected and confirmed dengue cases, including 145 deaths, in the Americas and Caribbean region. This is an increase of 71 865 cases since the last monthly update on 24 May 2017. Most cases are reported by Brazil (144 326), Peru (61 981), Colombia (14 522) and Nicaragua (12 169).

***Zika**:*
Since 15 May 2017 and as of 19 June, Argentina has reported 27 additional locally-acquired cases of Zika virus infection in Salta Province (25) and Chaco Province (2). This brings the total to 95 locally-acquired cases reported in 2017 in Salta Province (49), Chaco Province (40) and Formosa Province (6).

On 5 June 2017, authorities in Puerto Rico declared the end of the Zika outbreak on the island.

Asia:
***Chikungunya**:*
Chikungunya fever cases have been reported from Bangladesh, India and Pakistan.

Since the beginning of 2017 and as of 21 June, Bangladesh has reported 1 930 chikungunya cases in the capital Dhaka.

Since the beginning of 2017 and as of 31 May, India has reported 7 711 chikungunya cases, compared with 64 057 cases during the entire year 2016.

Since the beginning of 2017 and as of 22 June, Pakistan has reported 3 190 chikungunya cases in Karachi. This is an increase by 82 cases since the last monthly update on 24 May. Additionally, since the beginning of 2017 and as of 19 April, 1 962 chikungunya cases had been reported in Gwadar district in the southern part of the country.

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

Since the beginning of 2017 and as of 23 June, Sri Lanka has reported 69 380 dengue cases, including at least 205 deaths, compared with 54 727 cases, including 78 deaths, during the entire year 2016. This is an increase by 24 839 dengue cases since the last monthly update on 24 May. Approximately 42% of dengue cases were reported from the Western Province.

Since the beginning of 2017 and as of 9 June, Laos has reported 2 138 dengue cases, compared with 840 cases during the same period in 2016.

Since the beginning of 2017 and as of 20 June, Viet Nam has reported more than 36 000 dengue cases, including ten deaths. In Hanoi, 1 300 patients have been hospitalised with dengue fever, a 2.6-fold increase compared with the same period last year.

Since the beginning of 2017 and as of 19 June, Thailand has reported 8 328 dengue cases from 77 provinces. This is an increase by 3 059 cases since the last monthly update on 24 May.

Since the beginning of 2017 and as of 31 May, India has reported 11 402 dengue cases, including 11 deaths, compared with 129 166 cases, including 2 445 deaths, during the entire year 2016.

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Since the beginning of 2017 and as of 31 May, China has reported 107 dengue cases, which is comparable to the same period in 2016.

Since the beginning of 2017 and as of late May, Myanmar has reported more than 3 300 dengue cases, including 17 deaths. In Yangon, nine people died and more than 1 500 dengue cases were reported between January and the first week of June.

Since the beginning of 2017 and as of 13 June, Cambodia has reported 535 suspected dengue cases in 2017, which is lower than during the same period annually since 2014.

Since the beginning of 2017 and as of 4 June, Malaysia has reported 43 807 dengue cases, compared with 52 185 cases during the same period in 2016.

Since the beginning of 2017 and as of 23 June, Singapore has reported 1 353 dengue cases in 2017, which is lower than during the same period annually since 2013.

Zika:
On 15 May 2017, India reported its three first confirmed cases in Ahmedabad district, Gujarat. They were recorded between 9 November 2016 and 16 February 2017.

On 2 June 2017, South Korea reported a recent travel-associated case in a traveller returning from Maldives. On 17 June 2017, South Korea reported a travel-associated case in a traveller returning from Thailand with onset of symptoms on 11 June.

Since the beginning of 2017 and as of 17 June, Singapore has reported 39 cases of Zika virus infection. This represents an increase of six cases since 14 May.

Australia and the Pacific:
Chikungunya:
No outbreaks detected.

Dengue:
Since the beginning of 2017 and as of 31 May, Australia has reported 556 laboratory-confirmed dengue cases in 2017, which is lower than during the same time period for 2012–2016.

Between 22 May and 4 June 2017, French Polynesia has reported 52 dengue cases.

Since the beginning of 2017 and as of 4 June, Fiji has reported 1 612 dengue (DENV 2) cases. The majority of the cases are from the Central and Western Health division.

Since the beginning of 2017 and as of May, Nauru has reported 964 dengue (DENV 2) cases, 35 of which were hospitalised. Of the hospitalised cases, 8 had haemorrhagic features. Three deaths have been reported.

Since September 2016 and as of 19 June 2017, New Caledonia has reported 4 307 dengue (DENV 1, 2, 3) cases, including 10 deaths. The weekly number of cases is decreasing.

Since November 2016 and as of 15 June 2017, Vanuatu has reported 2 950 dengue (DENV 2) cases, including 5.5% hospitalisations. The weekly number of cases is decreasing.

Zika:
No outbreaks detected.

Africa:
Chikungunya:
No outbreaks detected.

Dengue:
Since the beginning of 2017 and as of 29 May, Côte d'Ivoire has reported 101 dengue (DENV 2, 3) cases, of which 33 are confirmed. A dengue outbreak has occurred since April 2017 in the sanitary district of Cocody-Bingerville in Abidjan.

Since the beginning of 2017 and as of 5 June, Kenya has reported 832 dengue cases. The outbreak has been reported in Mombasa (n=795) and Wajir (n=67, of which 37 confirmed) counties. One death has been reported.

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Since the beginning of 2017 and as of 28 June, La Reunion has reported 43 locally-acquired and five imported dengue cases. Three communes are affected: Saint-Paul (Crève-coeur), Saint-Louis (Palissade) and Saint-Pierre (Basse-Terre - Ligne Paradis).

***Zika**:*
No outbreaks detected.

ECDC assessment

Chikungunya:
Outbreaks are still ongoing in the Americas and the Pacific.

Dengue:
Dengue is widespread 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 being 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 through epidemic intelligence and reports on a monthly basis. ECDC published the tenth update of its rapid risk assessment on Zika virus disease epidemic on 4 April 2017.

Ebola virus disease – Democratic Republic of the Congo – 2017

Opening date: 15 May 2017 Latest update: 29 June 2017

Epidemiological summary

Between 22 and 29 June 2017, WHO did not report any new cases. As of 29 June, WHO has reported five confirmed and three probable cases, including four deaths (CFR: 50%), from Nambwa (four confirmed and two probable), Ngayi (one probable) and Mabongo (one confirmed). As of 21 June, all contacts have completed the 21-day monitoring period, there are currently no contacts under follow-up. So far, the outbreak remains confined to the Likati Health Zone.

Source: WHO

ECDC assessment

This is the eighth outbreak of EVD in DRC since the discovery of the virus in 1976. DRC national authorities have experience in responding to such outbreaks. However, this is the first time the Likati Health Zone has been affected and the local authorities have limited experience in managing such an outbreak. Investigations in DRC are ongoing to assess the extent of the outbreak. WHO and the Global Outbreak Alert and Response Network (GOARN) partners are supporting the national health authorities in the response.

The outbreak is occurring in an extremely remote area. For EU/EEA citizens living in or travelling through DRC, the risk of exposure is negligible. For people entering the affected area, such as healthcare workers responding to the outbreak, the risk of infection remains very low, assuming they follow the recommended precautions.

The risk of introduction into the EU/EEA would most probably be related to an infected traveller coming from the affected area. Although unlikely given the remote location of the outbreak, this cannot be excluded. The overall risk of introduction and further spread of Ebola virus within the EU/EEA is therefore currently considered to be extremely low.

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Actions

ECDC published a rapid risk assessment related to this event on 19 May 2017.

Middle East respiratory syndrome coronavirus (MERS-CoV) – Multistate

Opening date: 24 September 2012 Latest update: 30 June 2017

Epidemiological summary

Since the last update of MERS-CoV on 9 June 2017, 41 additional cases of MERS-CoV have been reported, 40 from Saudi Arabia and one reported by Lebanon in a Lebanese citizen returning from Saudi Arabia.

Saudi Arabia: among the 40 recently reported cases on 19 June, 13 are associated to two previously identify clusters.
The first cluster is related to nosocomial transmission in an hospital of Riyadh where 32 cases have been laboratory confirmed. All the cases were asymptomatic.
The second cluster is also related to nosocomial transmission in another hospital in Riyadh where one suspect case and eight laboratory confirmed case have been identified.

A third cluster was reported in third hospital in Riyadh on 13 June. This cluster includes six cases, including one asymptomatic case who visited the emergency room of the hospital of the first cluster. The other five cases are secondary household and health care worker contacts.

Lebanon: on 28 June, Lebanon reported one imported case from Saudi Arabia. The case developed symptoms before traveling back from Saudi Arabia to Lebanon. The patient is isolated at home and authorities started contact tracing.
One case of MERS has previously been reported in Lebanon on 9 May 2014.

According to WHO, since April 2012 and as of 30 June 2017, 2 030 cases of MERS, including 704 deaths, have been reported by health authorities worldwide.

Web sources: ECDC's latest rapid risk assessment | ECDC novel coronavirus webpage | WHO | WHO MERS updates | CDC MERS | Saudi Arabia MoH | ECDC factsheet for professionals | MoH Lebanon

ECDC assessment

The extent to which healthcare facilities in Riyadh are affected is unknown, as is the number of asymptomatic individuals who may be infected with MERS-CoV. The role of hospitals as amplifiers of MERS-CoV infection is now well known, making the strict and timely application of infection prevention and control measures imperative. Sporadic, imported cases can be expected in EU/EEA Member States, and are associated with a risk of nosocomial spread. This highlights the need for awareness among healthcare workers, early detection through functioning testing algorithms, preparedness planning and application of strict infection prevention and control measures.

The risk of sustained human-to-human transmission in Europe remains very low. ECDC's conclusion continues to be that the MERS-CoV outbreak poses a low risk to the EU, as stated in a rapid risk assessment published on 21 October 2015, which provides details on the last case reported in Europe.

Actions

ECDC published the 21st update of its MERS-CoV rapid risk assessment on 21 October 2015.

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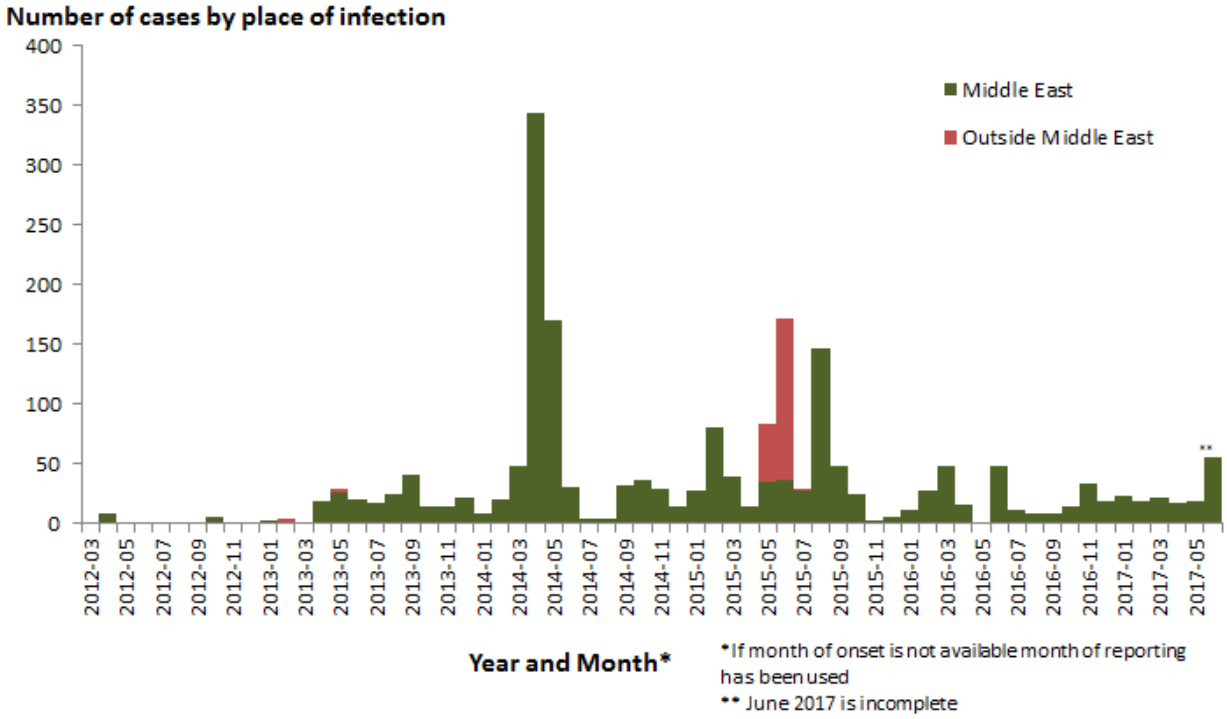
Distribution of confirmed cases of MERS-CoV by first available month and place of infection, March 2012 - 30 June 2017

ECDC



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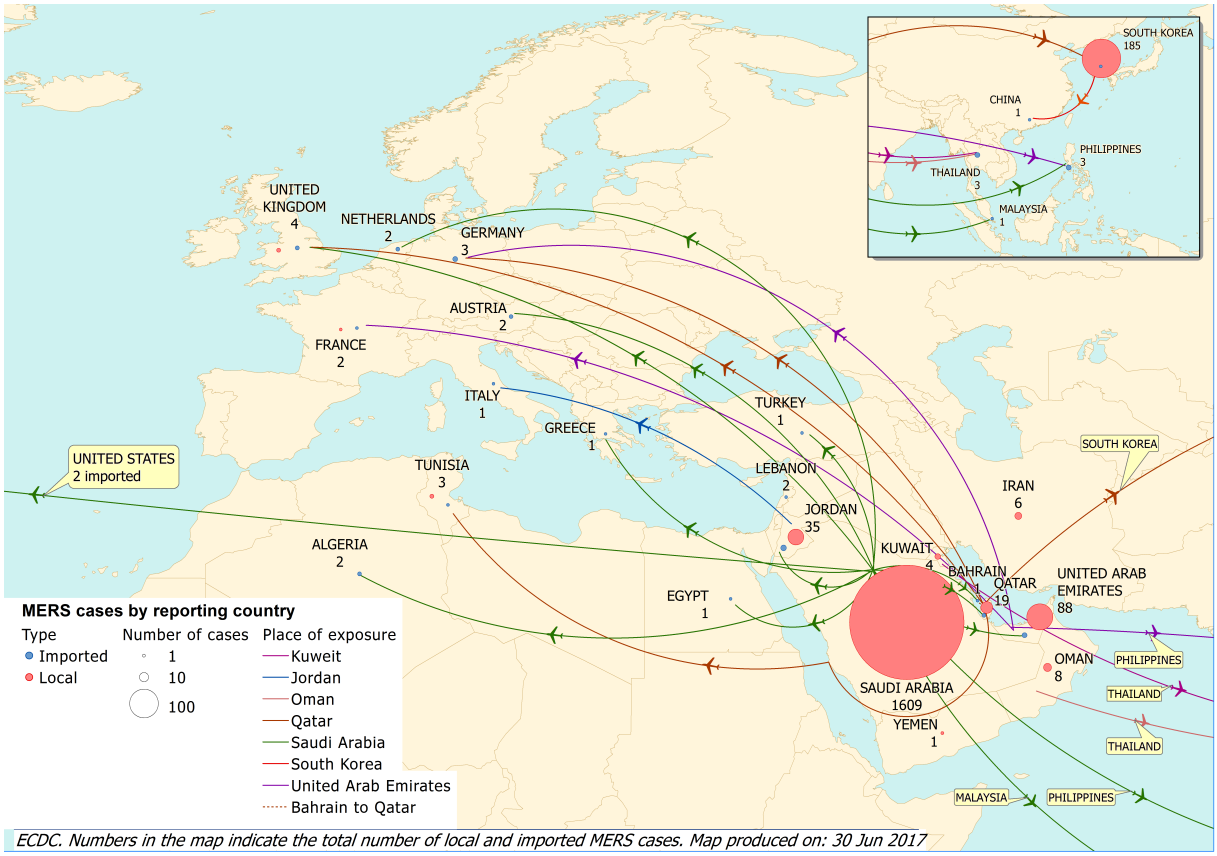
Distribution of confirmed cases of MERS-CoV by reporting country and place of probable infection, March 2012 - 30 June 2017

ECDC



ECDC. Numbers in the map indicate the total number of local and imported MERS cases. Map produced on: 30 Jun 2017

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