COMMUNICABLE DISEASE THREATS REPORT

CDTR
Week 40, 1-7 October 2017

All users

This weekly bulletin provides updates on threats monitored by ECDC.

NEWS

Influenza vaccine strain composition decided for the southern hemisphere
The World Health Organization (WHO) has recommended the composition of the *trivalent* influenza vaccine for the southern hemisphere winter 2018 influenza season as a combination of:

- An A/Michigan/45/2015 (H1N1)pdm09-like virus;
- An A/Singapore/INFIMH-16-0019/2016 (H3N2)-like virus; and
- A B/Phuket/3073/2013-like virus (Yamagata lineage).

Quadrivalent vaccines, containing two influenza B viruses, should include the above three viruses and a B/Brisbane/60/2008-like virus (Victoria lineage). Two components, for influenza A(H3N2) and B viruses, were changed in comparison with the southern hemisphere 2017 influenza season. The A/Michigan/45/2015 A(H1N1)pdm09 vaccine virus is close to the circulating A (H1N1)pdm09 viruses in its genetic and antigenic properties and should result in good vaccine effectiveness if A(H1N1)pdm09 viruses circulate widely. Genetic analyses of circulating A(H3N2) showed that these viruses have undergone considerable genetic diversification from the current (southern and northern) vaccine virus A/Hong Kong/4801/2014 (clade 3C.2a). The A (H3N2) vaccine strain for the upcoming winter season in the northern hemisphere does not correspond ideally with the A(H3N2) viruses currently circulating across the world. Therefore, it is expected that the vaccine effectiveness against this subtype in the northern hemisphere will be suboptimal if the circulating strains resemble those circulating in the southern hemisphere.

Globally, both B virus lineages continue to co-circulate, with B/Yamagata lineage being predominant. However, in the northern hemisphere, B/Brisbane/60/2008-like virus (Victoria lineage) is included in the trivalent vaccine for the 2017–2018 influenza season. As the trivalent vaccine is the most widely used vaccine in the northern hemisphere, a suboptimal vaccine effectiveness against the B viruses is expected, if B/Yamagata viruses continue to be predominant. As all influenza (sub)types continued to co-circulate globally from February to September 2017, it is impossible to predict the proportions of circulating viruses next season and the expected protection using the recommended vaccine components.

Read the full ECDC comment.

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: 6 October 2017

EU/EEA Member States are reporting a large increase in hepatitis A virus infections in 2017 compared to previous years, predominantly affecting men who have sex with men (MSM).

➔Update of the week

Since the last rapid risk assessment on this multi-country hepatitis A outbreak, 19 EU/EEA countries have reported 1 363 new outbreak-confirmed cases.

Belgium, France and Germany reported six foodborne clusters of 15 cases on average, associated with one of the outbreak strains in 2017. In 2017, as of 15 September, Poland had reported 1 426 hepatitis A cases, compared to 26 cases in 2016, representing a 55-fold increase in cases. For these cases sequencing information was not available. Since the last update, Malta and the Netherlands have reported hepatitis A vaccine shortages, while Belgium and Iceland have reported no shortages. In addition, Italy, Spain and the United Kingdom have issued new vaccination recommendations.

Chikungunya - Europe - 2017

Opening date: 15 September 2017 Latest update: 6 October 2017

Since August 2017, France and Italy have reported autochthonous transmission of chikungunya virus, respectively in the Var department, France and the Lazio and Calabria regions, Italy. The two events involve strains of different origin and are therefore not related.

➔Update of the week

As of 4 October, Italy reported 239 chikungunya cases in the Lazio region (146 confirmed and 93 probable) and six autochthonous confirmed cases in the city of Guardavalle, Calabria region. Furthermore, three confirmed cases were reported in Emilia-Romagna (1), Marche (1) and France (1) and one probable case was reported in Germany. Three confirmed cases had an epidemiological link to the Anzio region, and one probable case in Rome. Furthermore, four confirmed cases with a history of travel to Guardavalle marina were notified from Lazio (1) and Emilia-Romagna region (3).

As of 4 October 2017, Calabria region reported 55 chikungunya cases in Guardavalle. This brings the number of reported cases in Italy to 298 cases.

Since the previous CDTR, France has reported six new chikungunya cases. As of 3 October, authorities had reported 17 autochthonous cases in Var department: 13 confirmed cases, three probable cases and a suspected case with compatible symptoms that is under investigation.

Malaria - Europe - 2017

Opening date: 11 September 2017 Latest update: 6 October 2017

In 2017, several EU Member States reported separate events of locally-acquired malaria cases due to *Plasmodium falciparum* or *Plasmodium vivax* clustered in time. Most of the events occurred from July to September 2017, except for the event related to malaria cases with *P. vivax* in Greece that started in May 2017.

➔Update of the week

On 4 October 2017, in Italy, media quoting the Ministry of Health reported four *Plasmodium falciparum* malaria cases in the Apulia region.

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

Opening date: 30 May 2017 Latest update: 6 October 2017

During the West Nile virus transmission season, from June to November, ECDC monitors the occurrence of cases of West Nile fever in the EU Member States and neighbouring countries in order to inform the blood safety authorities about areas with ongoing virus transmission. In 2016, 225 human cases of West Nile fever were reported in the EU Member States and 267 cases were reported in the neighbouring countries.

➔Update of the week

Between 28 September and 5 October 2017, Romania reported nine cases, Italy reported four cases, Hungary reported two cases and Greece reported one case. Serbia and Israel reported nine and eight cases respectively. All cases were notified in areas already considered as affected.

Romania reported one death due to West Nile fever. In addition, three equine West Nile fever cases were reported through the Animal Disease Notification System (ADNS) of the European Commission. Austria and Spain reported two and one equine case respectively.

Sources: TESSy and ADNS

Non EU Threats

Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 6 October 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

According to the Hong Kong avian influenza report, since the last update on 8 September 2017, China has reported two cases. One case from Hunan and one case from Liaoning. During the past few weeks the number of cases have declined and the outbreak is returning to the baseline. This indicates the end of the fifth wave.

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

Opening date: 24 September 2012 Latest update: 6 October 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

Between 30 August and 3 October, Saudi Arabia reported 12 MERS-CoV cases. Of the twelve cases, seven report camel contact and two also drank raw camel milk. One of the 12 cases is an asymptomatic household contact. The rest are primary cases with no known exposure to risk factors. Nine of the 12 cases are male.

On 21 September the United Arab Emirates reported a case from Al Ain, the case is a 78-year-old male notified to WHO on 23 August 2017. The case had no known exposure to risk factors. This is the sixth case reported from the United Arab Emirates in 2017, and ninetieth since 2013.

On 12 September Oman reported a case from Al Musanaa Batinah, the case is a 54-year-old male notified to WHO on 30 August 2017. The case had no known exposure to risk factors. This is the first case reported from Oman in 2017, and the ninth case since 2013.

Sources: WHO | MoH Saudi Arabia

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Malaria – Cape Verde- 2017

Opening date: 10 August 2017 Latest update: 6 October 2017

In July 2017, Cape Verde reported a sudden increase in the number of malaria cases. According to WHO, Cape Verde is categorised as having a 'very limited risk of malaria transmission area', with limited local transmission from September to November, coinciding with the rainy season.

➔Update of the week

In 2017, as of 24 September, the Ministry of Health in Cape Verde had reported 254 cases of malaria. This represents an increase of 53 cases since the last official report on 10 September 2017.

Plague - Madagascar - 2017

Opening date: 15 September 2017 Latest update: 6 October 2017

On 14 September, media has reported five pulmonary plague deaths in Madagascar. These deaths occurred between 28 August and 11 September. Among these deaths, one occurred in the capital. The index case took a taxi from Ankazobe to Toamasina. He died on the way and he contaminated two persons in the taxi who died in Toamasina within 24 hours of infection. Two women from the same family of the two cases who died in Toamasina were contaminated. One of these women died in Antananarivo, the capital and the second died in another taxi in the south of the capital. On 3 October, WHO reported 194 cases including 124 pneumonic plague cases.

➔Update of the week

As of 3 October, WHO had reported 194 plague cases in Madagascar. Among these cases, 124 are pneumonic, 68 are bubonic, one is septicaemic and one is undetermined. Among the 124 pneumonic cases, 21 deaths are reported (CFR=16.9%). The 124 pneumonic cases are reported in 12 districts including several districts in the capital.

Communicable disease risks – Hurricane Irma – 2017

Opening date: 7 September 2017 Latest update: 6 October 2017

Between 6 and 8 September 2017, Hurricane Irma hit several islands in the Caribbean, including the EU Outermost regions (OMRs) and the Overseas Countries and Territories (OCTs) of Antigua, Barbuda, the Turks and Caicos Islands, Saint-Barthélemy and Saint Martin island (both parts, Sint Maarten and St. Martin). An increase in cholera transmission has been reported in Haiti, but the same trend has been observed in the last four years during the months of September and October.
France has reported one case of leptospirosis.

➔Update of the week

On 3 October, French authorities reported a case of leptospirosis in Martinique. In Dominican Republic, on 3 October, authorities reinforced control measures and sensitisation for leptospirosis.

Poliomyelitis – Multistate (World) – Monitoring global outbreaks

Opening date: 8 September 2005 Latest update: 6 October 2017

Global public health efforts are ongoing to eradicate polio by immunising every child until transmission of the virus has completely stopped and the world becomes polio-free. Polio was declared a public health emergency of international concern (PHEIC) by the World Health Organization (WHO) on 5 May 2014 due to concerns regarding the increased circulation and international spread of wild poliovirus during 2014. On 3 August 2017, WHO agreed that the spread of poliovirus remains a public health event of international concern and extended the temporary recommendations for an additional three months. The last locally-acquired wild polio cases within the current EU borders were reported from Bulgaria in 2001. In June 2002, the WHO European Region was officially declared polio-free.

➔Update of the week

Since the last CDTR on 8 September 2017 and as of 3 October 2017, Pakistan has reported one new wild poliovirus type 1 (WPV1). Syria has reported eight and the Democratic Republic of the Congo (DRC) one case of type 2 circulating vaccine-derived poliovirus (cVDPV2). In 2017, as of 3 October, 11 wild poliovirus cases had been reported, six cases from Afghanistan and five cases from Pakistan. In addition, 56 circulating cVDPV2 cases had been reported in 2017, nine from the Democratic Republic of Congo and 47 from Syria.

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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: 6 October 2017

Epidemiological summary

Since the last rapid risk assessment on this multi-country hepatitis A outbreak, 19 EU/EEA countries (Austria, Belgium, Denmark, Estonia, Finland, France, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, England and Wales) have reported 1 363 new outbreak-confirmed cases.

Since 1 June 2016 and as of 27 September 2017, 2 873 outbreak-confirmed cases were reported in 20 EU/EEA countries. For 2 582 of these cases, information on gender is available, with a male to female (M/F) ratio of 9.3. Information on MSM status is available for 970 male cases, 738 of which (76%) were reported as MSM. The largest number of cases was reported in March 2017. However, there may be substantial reporting delays (weeks or even months) in sequencing information and the number of cases with onset in more recent months.

Belgium, France and Germany reported six foodborne clusters of 15 cases on average, associated with one of the outbreak strains in 2017. As a result of these spill-over events, a limited increase has been noted in women, children and the elderly in parallel with the large increase in male cases.

From January to August 2017, 19 countries (Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Iceland, Italy, Luxembourg, Malta, the Netherlands, Slovenia, Spain, Sweden, England and Wales) reported 11 212 laboratory-confirmed hepatitis A cases which represent a four-fold increase on the average 2 594 cases reported annually for the same period between 2012 and 2015. The mean M/F gender ratio in 2017 was 4.3, the highest ratio was 4.8 reported in April 2017. Since then, the number of male cases has decreased, and along with it the male-to-female ratio, although it remains higher than 3.5.

Additionally, in 2017, as of 15 September, Poland had reported 1 426 hepatitis A cases, compared to 26 cases in 2016, representing a 55-fold increase in cases. Slovakia reported 13 outbreaks among minority ethnic groups (Roma people) in 2017. The Czech Republic and Greece were the only countries observing increases in the number of cases reported in 2017 with similar distribution of cases in males and females. Greece and Italy observed clusters of cases, possibly associated with consumption of contaminated seafood.

Hepatitis A vaccine availability in the EU is currently limited, with some countries having reported shortages (e.g. Austria, Denmark, Italy, Portugal, Spain and Sweden) while the Czech Republic, Estonia, Finland, Germany, Ireland, Luxembourg and Slovenia have not reported any shortages. In addition, since the last update, Malta and the Netherlands have reported vaccine shortages, while Belgium and Iceland have reported no shortages.

ECDC assessment

Between June 2016 and September 2017, 20 EU/EEA countries reported 2 873 hepatitis A outbreak-confirmed cases, peaking in March 2017. In addition, hepatitis A laboratory-confirmed cases reported by 19 EU/EEA countries peaked in May 2017 and the related M/F ratio peaked in April 2017. The monthly number of laboratory-confirmed cases and the M/F ratio remain significantly higher than in previous years. Given the reporting delay of outbreak-confirmed cases, these data indicate that the outbreak is still ongoing and that more cases are to be expected in the EU/EEA countries in the future.

The conclusions and options for response set out in ECDC's rapid risk assessment entitled 'Hepatitis A outbreak in the EU/EEA mostly affecting men who have sex with men – Third update, 28 June 2017', remain valid.

Actions

ECDC asked EU/EEA countries to report on events that could contribute to the spread of the outbreak strains in population groups at increased risk of infection or in the community. ECDC monitors the hepatitis A outbreaks in Europe through EPIS-FWD and epidemic intelligence. ECDC published an updated rapid risk assessment on 28 June 2017, an overview of hepatitis A in EU countries on 10 August 2017 and an epidemiological update on the outbreak on 29 September 2017.

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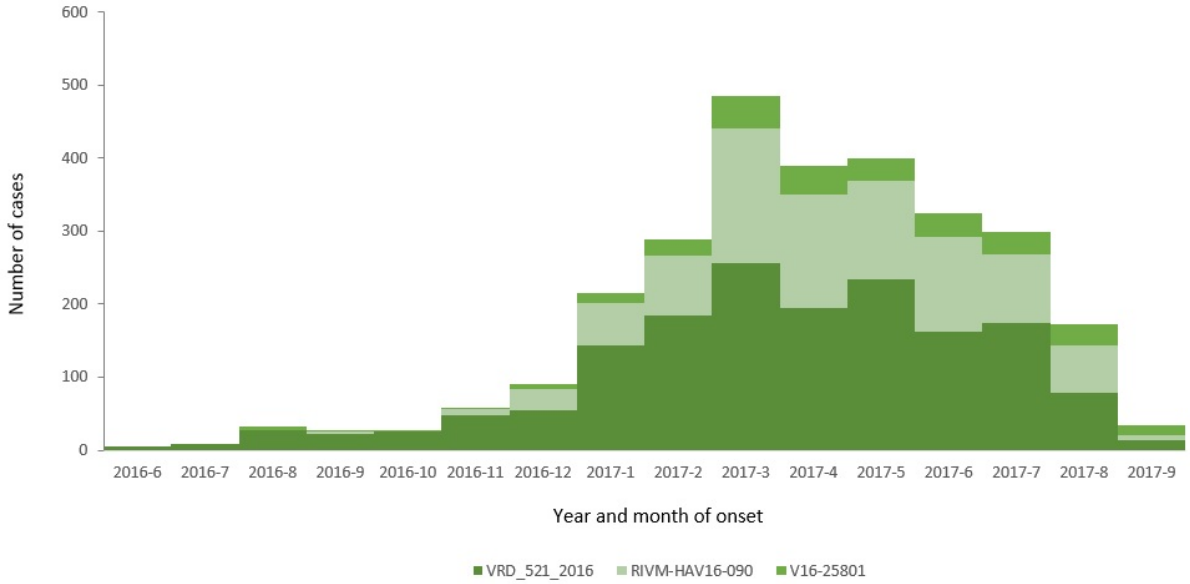
Distribution of hepatitis A outbreak-confirmed cases, by month of onset and genetic sequence, June 2016 to September 2017, as of 27 September 2017, EU/EEA (n=2 863*)

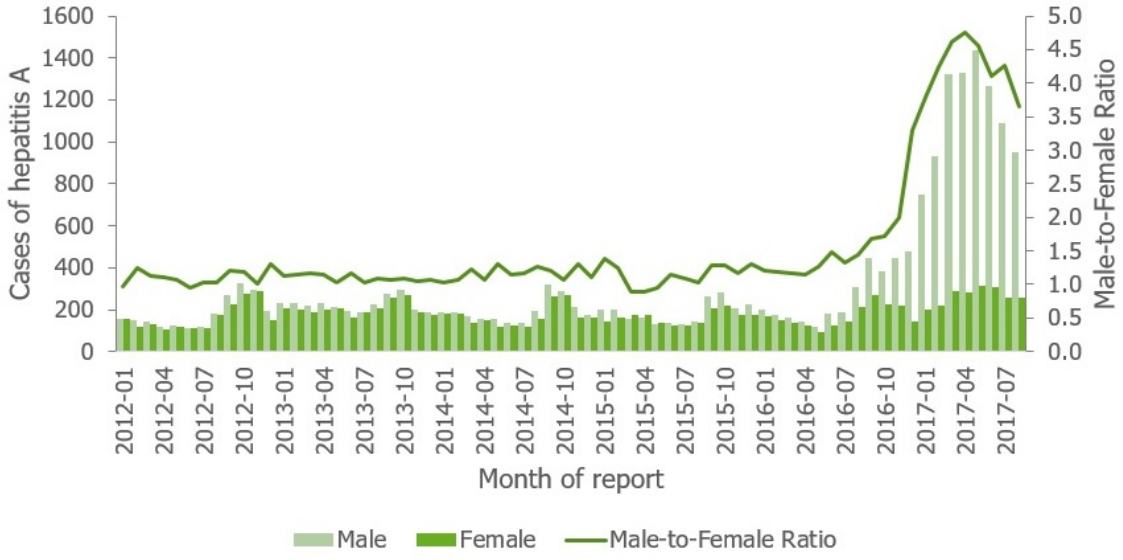
ECDC



** Where date of onset was unavailable we used date of sampling or date of receipt by the reference laboratory. An additional 16 cases with missing dates are not included. A total of 308 additional cases have sequencing pending in Spain. Countries included: Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Luxembourg, Malta, the Netherlands, Norway, Portugal, Slovenia, Spain, Sweden and the United Kingdom. Outbreak-confirmed cases for Germany, Scotland and Spain are reported until June 2017.*

Distribution of hepatitis A cases by gender and male-to-female ratio, January 2012 to August 2017, as of 27 September 2017, EU/EEA*

ECDC



** Where date of onset was unavailable we used date of sampling or date of receipt by the reference laboratory. The 2017 data from the UK are only for England and Wales and data from April are provisional. Data from Belgium are missing for 2015 and 2016. Countries included: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Iceland, Italy, Luxembourg, Malta, the Netherlands, Slovenia, Spain, Sweden and the United Kingdom.*

Chikungunya - Europe - 2017

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Opening date: 15 September 2017 Latest update: 6 October 2017

Epidemiological summary

The two events described below in France and in Italy are two distinct events. There is epidemiological and microbiological evidence highlighting the fact that the clusters in France and in Italy are not related.

On 11 August 2017, France reported through the EWRS an outbreak of autochthonous chikungunya cases in the Var department, southern France. As of 3 October, France reports two clusters. The first cluster, in Cannet-des-Maures, includes eleven cases (eight confirmed, two probable and one suspected). The second cluster, in Taradeau includes five confirmed cases and one probable case. Taradeau commune is 13 kilometres away from Cannet-des-Maures. There is an epidemiological link between the cases in Taradeau and Cannet-des-Maures, indicating that the two clusters are related. As stated in the Eurosurveillance article 'Preliminary report of an autochthonous chikungunya outbreak in France, July to September 2017' published 28 September 2017, the virus circulating in France belongs to an East Central South African (ECSA) sub-lineage that includes isolates from the Central African region (e.g. Gabon, Republic of Congo). The virus isolated from the index patient is carrying the E1-A226V mutation. Full genome analysis is ongoing and the sequence will be submitted to GenBank.

As of 4 October, Italy had reported 239 chikungunya cases in the Lazio region (146 confirmed and 93 probable) and six autochthonous confirmed cases in the city of Guardavalle, Calabria region. Furthermore, three confirmed cases were reported in Emilia-Romagna (1), Marche (1) and France (1) and one probable case was reported in Germany. Three confirmed cases had an epidemiological link to the Anzio region, and one probable case in Rome. Furthermore, four confirmed cases with a history of travel to Guardavalle marina were notified from Lazio (1) and Emilia-Romagna region (3). As of 4 October 2017, Calabria region had reported 55 chikungunya cases in Guardavalle. As stated in the Eurosurveillance article 'Detection of a chikungunya outbreak in Central Italy, August to September 2017' published 28 September, the virus circulating in Italy belongs to the East Central South African (ECSA) lineage and show 100% similarity to a strain involved in an ongoing epidemic in Pakistan. The virus isolated does not carry the E1-A226V mutation. The outbreak sequence is available in GenBank.

Sources: Lazio Region | MoH Italy | ISS | France ARS PACA | France ARS PACA
ECDC links: Rapid risk assessment on cluster of autochthonous chikungunya cases in France | Rapid risk assessment on clusters of autochthonous chikungunya cases in Italy

ECDC assessment

The two outbreaks in France and Italy are unrelated and result from separate introductions of the virus, probably from Africa and Asia, respectively. Having concurrent, distinct outbreaks of chikungunya in France and Italy highlights that the environmental conditions in 2017 are favourable for the local transmission of introduced chikungunya virus strains.
In France, response measures, including vector control, have been implemented. The fact that the strain harbours the E1-A226V mutation may explain the relatively larger number of autochthonous cases observed this year compared to the 2010 outbreak in the same region (i.e. two cases reported in 2010). The conclusions of the latest ECDC rapid risk assessment published on 24 August 2017 on the 'Cluster of autochthonous chikungunya cases in France' remain valid.
In Italy, this is the first known transmission of chikungunya in central and southern Italy and therefore, in the absence of herd immunity, most of the inhabitants should be considered as susceptible to chikungunya virus disease. The likelihood of further spread within Italy is still moderate with suitable but less favourable conditions for vector activity in the coming weeks. In the areas already affected more cases can be expected to be identified in the near future. There is a low likelihood of introduction of the virus and subsequent local transmission in other EU countries where *Aedes albopictus* is present and active.

Actions

ECDC has published a rapid risk assessment on the cluster of autochthonous chikungunya cases in France on 24 August 2017 and a rapid risk assessment on the clusters of autochthonous chikungunya cases in Italy on 14 September 2017. ECDC is updating the rapid risk assessment on chikungunya in Italy.

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Distribution of chikungunya autochthonous cases in Italy, July to 3 October 2017

ECDC

Malaria - Europe - 2017

Opening date: 11 September 2017 Latest update: 6 October 2017

Epidemiological summary

Italy

On 4 October 2017, in Italy, media quoting the Ministry of Health reported four *Plasmodium falciparum* malaria cases in the Apulia region. The cases are 21 to 37-year-old men, originally from Africa. All of them had been in Italy for more than three months. Date of onset for symptoms ranged from 20 to 27 September 2017. The cases are agricultural workers in Ginosa or Castellaneta. Malaria vectors such as *Anopheles labranchiae* and *Anopheles superpictus* are present in Italy.

Previously, on 5 September, Italy had reported a fatal case of malaria. The case was a four-year-old girl with no travel history to a malaria-endemic country. She was admitted on 13 August 2017 to a hospital in the Veneto region and diagnosed with diabetes mellitus. After returning from the Veneto region, she was admitted to a Trento hospital for her diabetes (16 to 21 August) and later consulted a pharyngitis on 31 August 2017.
On 2 September, she was admitted to hospital again and diagnosed with *P. falciparum* malaria. She was subsequently transferred to the tropical diseases reference centre in Brescia where she died on 4 September. Epidemiological investigations showed that two patients infected with *P. falciparum* were hospitalised in the same ward during her stay in the Trento hospital. An investigation in the Trento hospital did not identify any breaches of medical procedures that could result in an iatrogenic transmission. Entomological investigations in the Trento area did not reveal the presence of Anopheles mosquitoes. Entomological surveys were conducted in Bibione where the girl had spent her holidays. Molecular sequencing of the *Plasmodium* strain from the girl and from the two children hospitalised concomitantly is ongoing.

Greece

As of 17 August 2017, Greece reported five autochthonous cases of *P. vivax* malaria acquired via vector-borne transmission following a likely exposure in the regions of Dytiki Ellada in West Greece for four cases and Sterea Ellada in Central Greece for one case [6]. Greece reports that these cases resulted from a local transmission following recent introduction of *P. vivax* in the area (introduced cases). The dates of onset of the cases ranged from 2 May to 22 July 2017. In addition, Greece reported one locally-acquired case of *P. falciparum* in the region of Ipeiros, in north-west Greece, with date of onset of symptoms between 17 and 23 July 2017. The case, who has no travel history to a malaria-endemic area, was hospitalised for a non-infectious medical condition in a ward where another patient was treated for *P. falciparum* malaria. The most likely place of exposure for this particular case was a healthcare facility but it was not possible to determine the exact mode of transmission (mosquito vector or of iatrogenic origin). The investigation excluded transmission through blood transfusion, but instead suggested a nosocomial

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transmission, either mosquito-borne within the heathcare facility or of iatrogenic origin. No locally acquired malaria cases were reported in the area.

France
On 7 September, France reported two locally-acquired cases of malaria in the department of Allier in the Auvergne-Rhône-Alpes region of central France. Both cases attended a wedding that took place between 11 and 16 August 2017 in Moulins, Allier department, France. On 30 August 2017, the first case was diagnosed after admission to hospital in the southwest of France for fever, chills and sweats evolving since 26 August. The patient had not travelled abroad and had no risk factors for induced malaria. The only recent trip was to Moulins and its surroundings to attend the wedding.
On 1 September, a second case who attended the same wedding was diagnosed upon returning home. The case had onset of symptoms on 26 August 2017 and neither exposure to induced malaria nor a recent travel history to a malaria-endemic area. The Regional Health Agency of Auvergne-Rhône-Alpes implemented active case finding in the neighbouring laboratories and hospitals. None of the wedding attendees reported a recent travel history to a malaria-endemic country or symptoms compatible with malaria. However, an imported case of *P. falciparum* malaria from Burkina Faso was identified as having stayed in Moulins and its surroundings for several days within the two weeks before the wedding. Entomological investigations conducted in the areas visited by the imported case and autochthonous cases did not find evidence of the presence of *Anopheles plumbeus*, a potential competent vector of *P. falciparum*. The French National Reference Centre for Malaria is gathering samples for molecular typing to assess the link between the imported and the two autochthonous cases.

The United Kingdom ex. the northern part of Cyprus
On 8 September, the United Kingdom reported (through the Early Warning and Response System) three cases of *P. vivax* malaria in travellers returning from Esentepe, the northern part of Cyprus. Two of the cases were siblings aged twelve years that travelled independently from the third case. The three cases stayed in the northern part of Cyprus for two to three weeks in August and developed symptoms on 29 August. They were laboratory confirmed upon returning to the UK.

ECDC link: ECDC malaria factsheet
Sources: Italian blood safety authorities | Hellenic public health agency | media | media

ECDC assessment

The report of four *Plasmodium falciparum* malaria cases in Italy without travel history to malaria endemic countries is unusual. The fact that all the cases had onset of symptoms within a week and all were in Italy for more than three months suggests an indigenous transmission in Italy resulting from either a 'suitcase' event or an introduced malaria event.
The conclusions of the ECDC rapid risk assessment published on 20 September 2017 remain valid. The risk of further spread of malaria in the EU is considered very low. At this time of the year the risk of further transmission in relation to the cases in the Apulia region, Italy, is considered low. Epidemiological, parasitological and entomological investigations should provide evidence of the source of infection and should support further assessment of the risk for transmission.

Actions

ECDC published a rapid risk assessment 'Multiple reports of locally-acquired malaria infections in the EU' on 20 September 2017. ECDC is continuing to monitor this event through epidemic intelligence activities. ECDC published an epidemiological update on 6 October 2017.

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

Opening date: 30 May 2017 Latest update: 6 October 2017

Epidemiological summary

Since the beginning of the 2017 transmission season and as of 5 October 2017, the EU Member States and the neighbouring countries reported 240 cases: Romania (54 cases), Italy (53), Serbia (45), Greece (48), Hungary (19), Israel (17) and Austria (4). Sixteen deaths due to West Nile fever have been reported since the start of the transmission season: Romania (8 deaths), Greece (5), Hungary (1), Italy (1) and Serbia (1). In equids, EU Member States reported 91 West Nile fever cases through ADNS: 73 in Italy, 12 in Greece, three in Hungary, two in Austria and one in Spain.

ECDC link: ECDC West Nile fever web page | ECDC: equine West Nile fever web page | ECDC atlas
Sources: TESSy and ADNS

ECDC reports on this threat on a weekly basis during the West Nile season.

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ECDC assessment

The current West Nile fever epidemiological situation is consistent with observations of seasonal virus transmission from previous years. According to the Commission Directive 2014/110/EU, prospective donors should be deferred for 28 days after leaving a risk area of locally-acquired West Nile virus, unless an individual nucleic acid test (NAT) is negative.

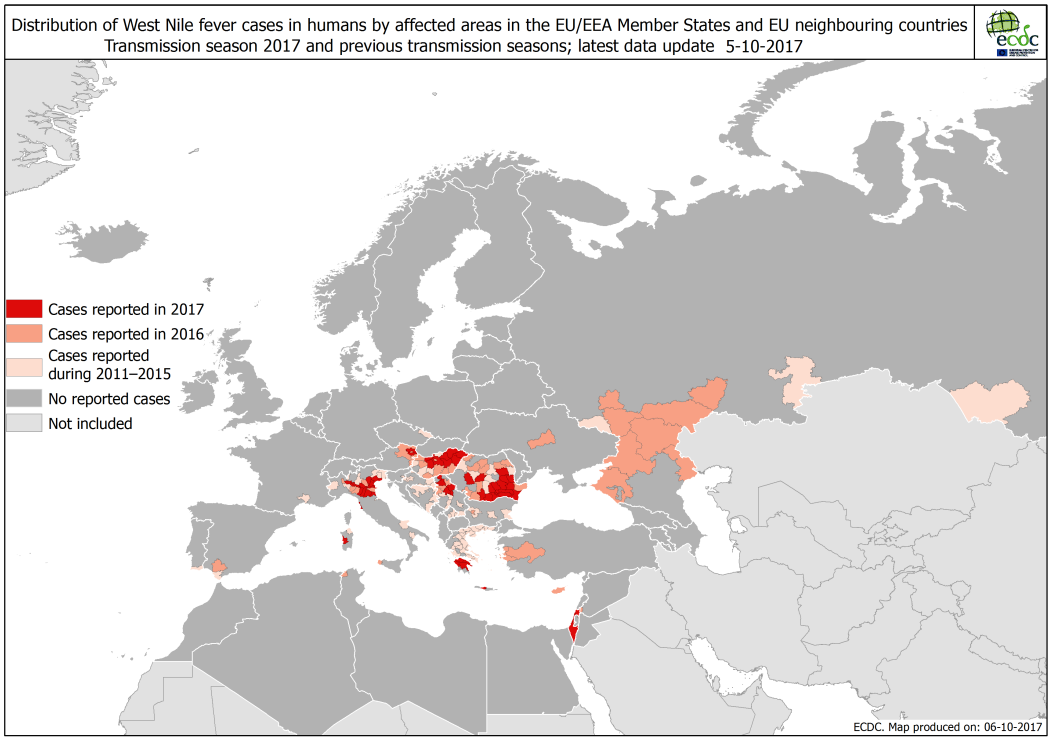
Actions

From 6 October 2017, ECDC publishes three types of West Nile fever maps: 1) human West Nile fever cases; 2) equine West Nile fever cases; 3) combined human and equine West Nile fever cases. Human cases are collected through The European Surveillance System (TESSy) and equine cases are collected through the Animal Disease Notification System (ADNS) of the European Commission. While the distribution of human cases covers EU/EEA countries and neighbouring countries, equine cases cover only EU/EEA countries.

Following a One Health approach, the new maps aims to highlight areas, at NUTS3 level, where West Nile virus is circulating in incidental hosts. Currently, deferral or testing of prospective donors applies to blood donors leaving areas with one or more autochthonous human West Nile virus cases. This set of maps aims to provide better information for European Union Member States so that they can implement preventive measures.

Distribution of human West Nile fever cases by affected areas as of 6 October

ECDC



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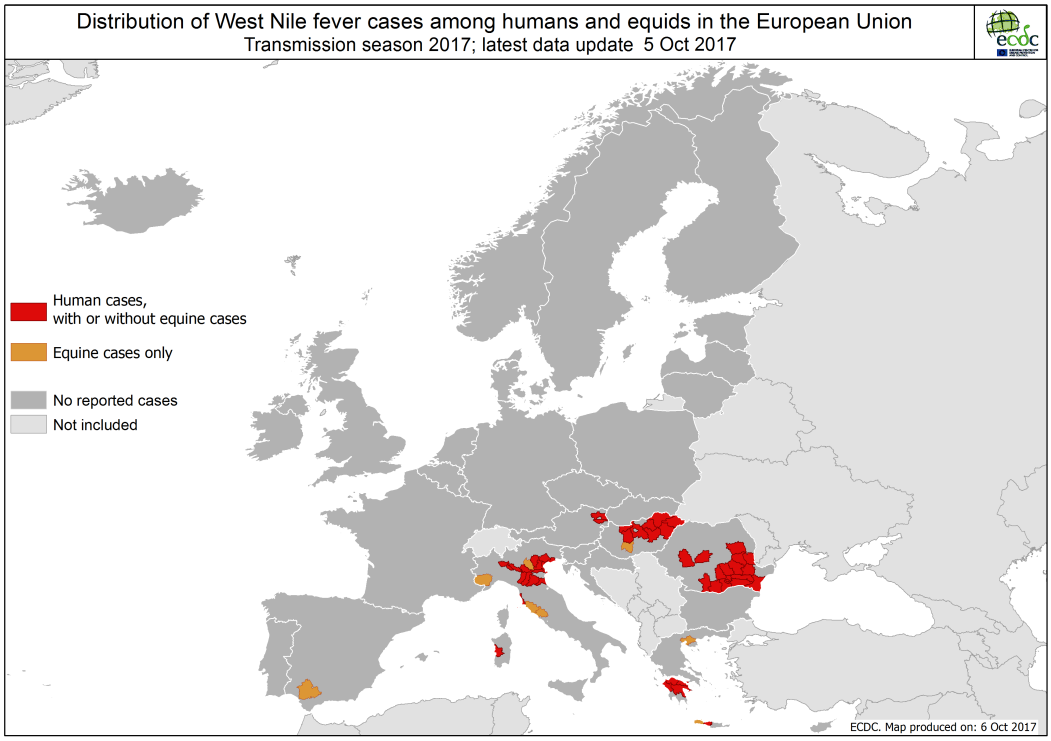
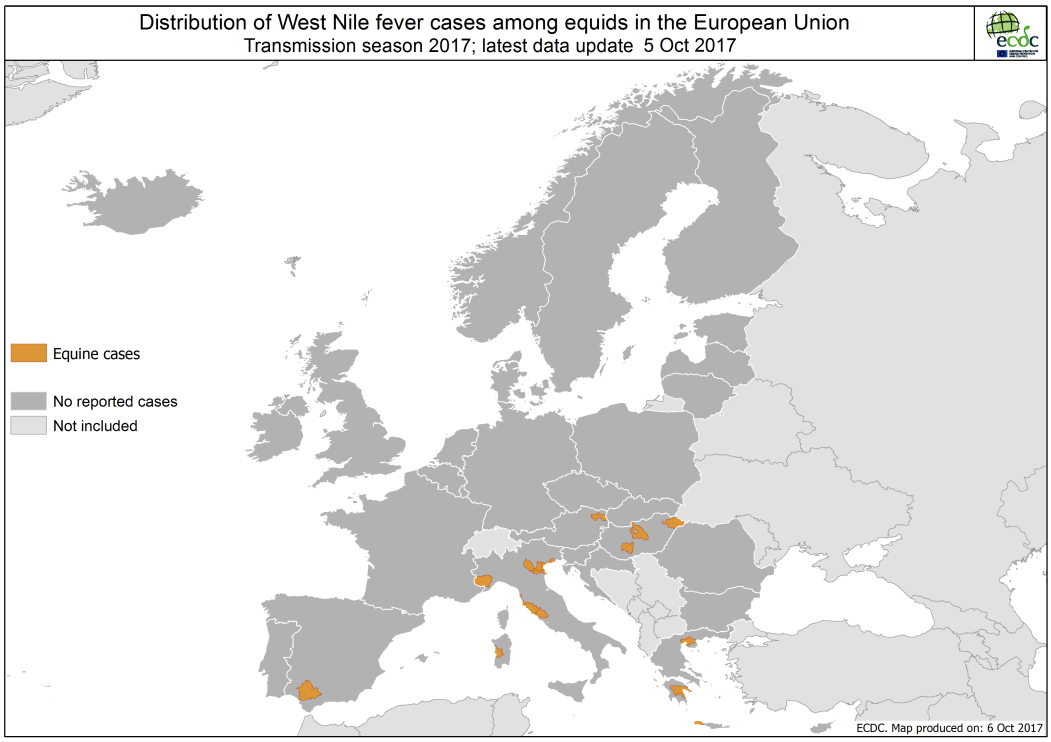
Distribution of West Nile fever cases among humans and equids in the EU.

TESSy and ADNS



Distribution of West Nile fever cases among equids in the EU.

TESSy and ADNS



Influenza A(H7N9) – China – Monitoring human cases

Opening date: 31 March 2013 Latest update: 6 October 2017

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Epidemiological summary

According to the Hong Kong avian influenza report, since the last update on 8 September 2017, China has reported two cases. One case from Hunan and one case from Liaoning. According to WHO WPRO, 27 human cases with highly pathogenic avian influenza (HPAI) A(H7N9) virus have been reported during the fifth wave. In March 2013, a novel avian influenza A(H7N9) virus was detected in patients in China. Since then and up to 3 October 2017, 1 564 cases have been reported, including 568 deaths. The outbreak shows a seasonal pattern. The first wave in spring 2013 (weeks 2013-7 to 2013-40) resulted in 135 cases, the second wave (weeks 2013-41 to 2014-40) led to 320 cases, the third wave (weeks 2014-41 to 2015-40) caused 223 cases, and 120 cases were reported as a result of the fourth wave (weeks 2015-41 to 2016-40). A fifth wave started in October 2016 (week 2016-41), with 766 cases as of 3 October 2017. The 1 564 cases were reported from Zhejiang (310), Guangdong (258), Jiangsu (253), Fujian (108), Anhui (101), Hunan (95), Shanghai (56), Jiangxi (50), Sichuan (38), Beijing (35), Guangxi (32), Hubei (31), Hebei (29), Henan (28), Shandong (27), Hong Kong (21), Guizhou (20), Xinjiang (13), Chongqing (9), Gansu (5), Shaanxi (7), Yunnan (7), Taiwan (5), Tianjin (5), Liaoning (5), Jilin (3), Tibet (3), Shanxi (3), Inner Mongolia (2), Macau (2) and three imported cases were reported in Canada (2) and Malaysia (1).

ECDC links: Zoonotic influenza web page | ECDC rapid risk assessment Influenza A(H7N9) virus in China - implications for public health - 7th update, 3 July 2017
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. In contrast to the situations observed during the summer months in previous years, influenza A(H7N9) viruses are continuously circulating in the poultry population, with transmission to humans causing a substantial number of cases.
During the current wave, a new influenza A(H7N9) virus was detected, with mutations in the haemagglutinin gene, indicating high pathogenicity in poultry. This has resulted in 27 human cases from Guangdong, Guangxi, Hebei, Hunan, Shaanxi and Taiwan (the case had travel history to Guangdong) with illness onset date before July 2017. It is unclear at the moment whether 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, there is no evidence to date of increased transmissibility to humans or sustainable human-to-human transmission.
The possibility of humans infected with influenza A(H7N9) returning to the EU/EEA cannot be excluded. However, the risk of the disease spreading in Europe through humans is still considered low, as there is no evidence of sustained human-to-human transmission.

Sources: WHO

Actions

ECDC published the seventh update of its rapid risk assessment on 3 July 2017, addressing the genetic evolution of influenza A (H7N9) virus in China and the implications for public health. ECDC monitors this event through epidemic intelligence and will report monthly.

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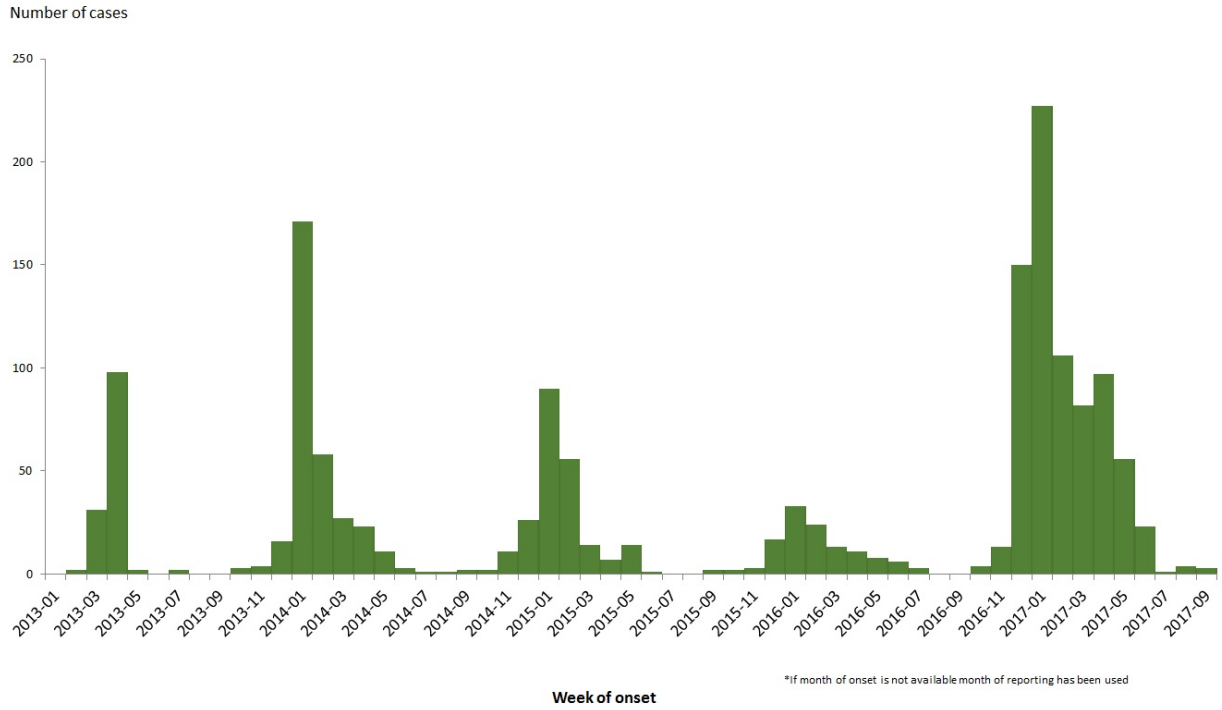
Distribution of confirmed cases of A(H7N9) by first available month, February 2013 to 3 October 2017

ECDC



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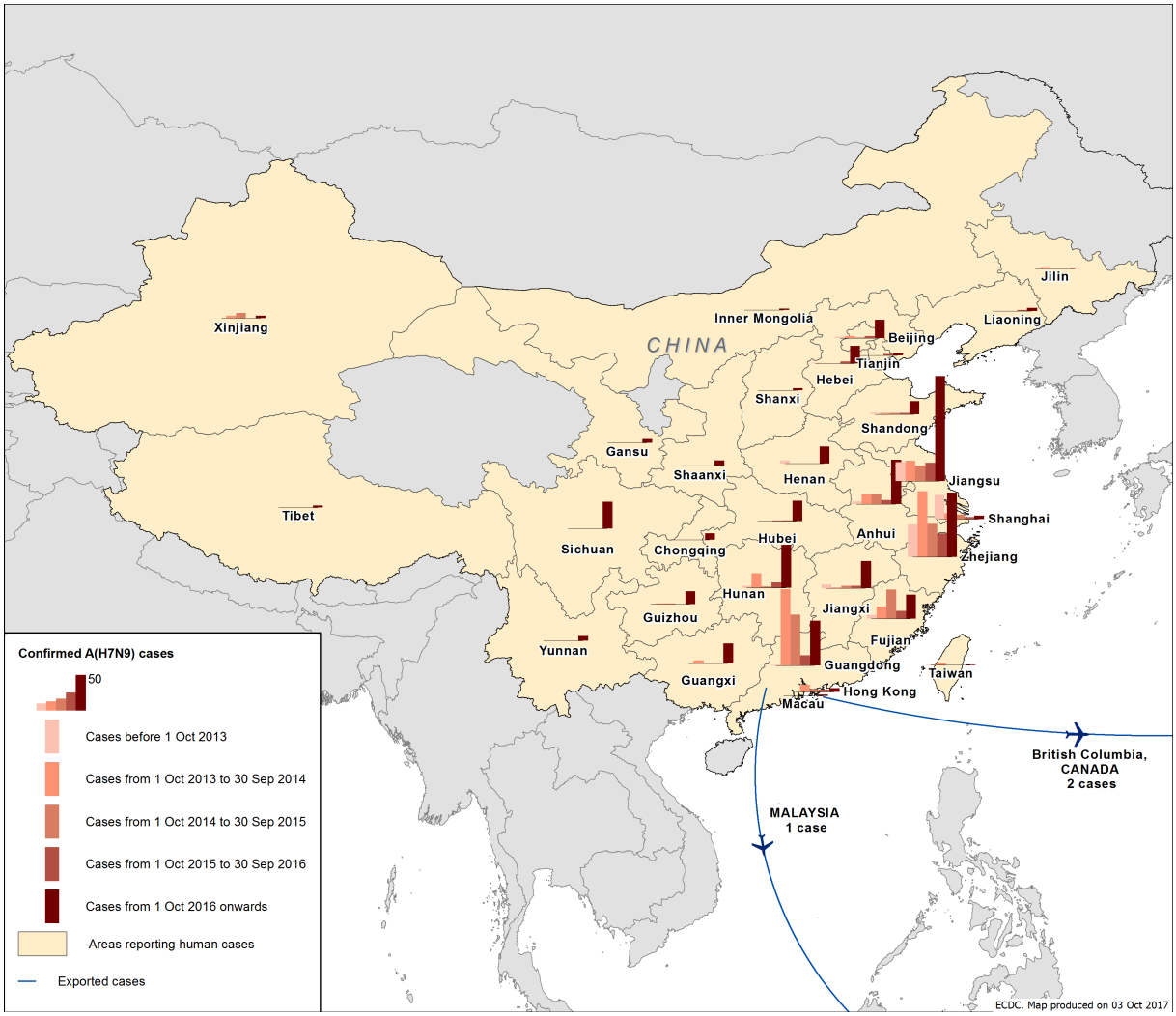
Distribution of confirmed cases of A(H7N9) by five seasons, February 2013 to 3 October 2017

ECDC



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

Opening date: 24 September 2012 Latest update: 6 October 2017

Epidemiological summary

Since April 2012 and as of 30 August 2017, 2 070 cases of MERS, including 789 deaths, have been reported by health authorities worldwide.

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

ECDC assessment

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.

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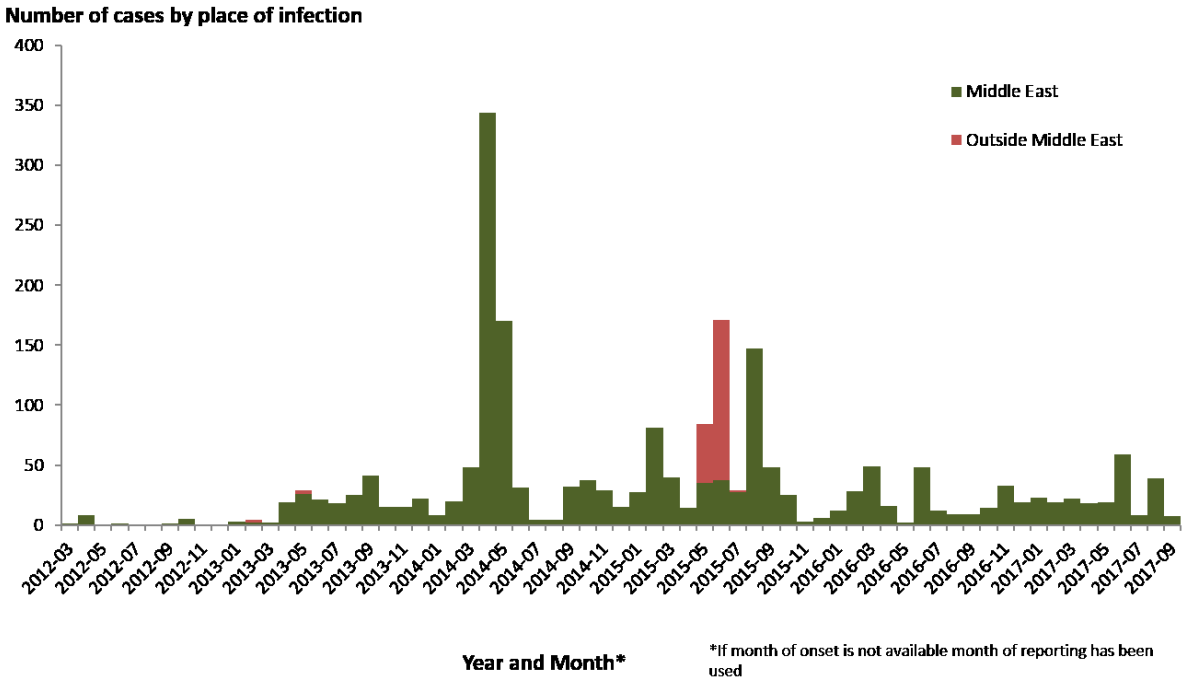
Actions

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

Distribution of confirmed cases of MERS-CoV by first available month and region, March 2012 to 30 September 2017

ECDC



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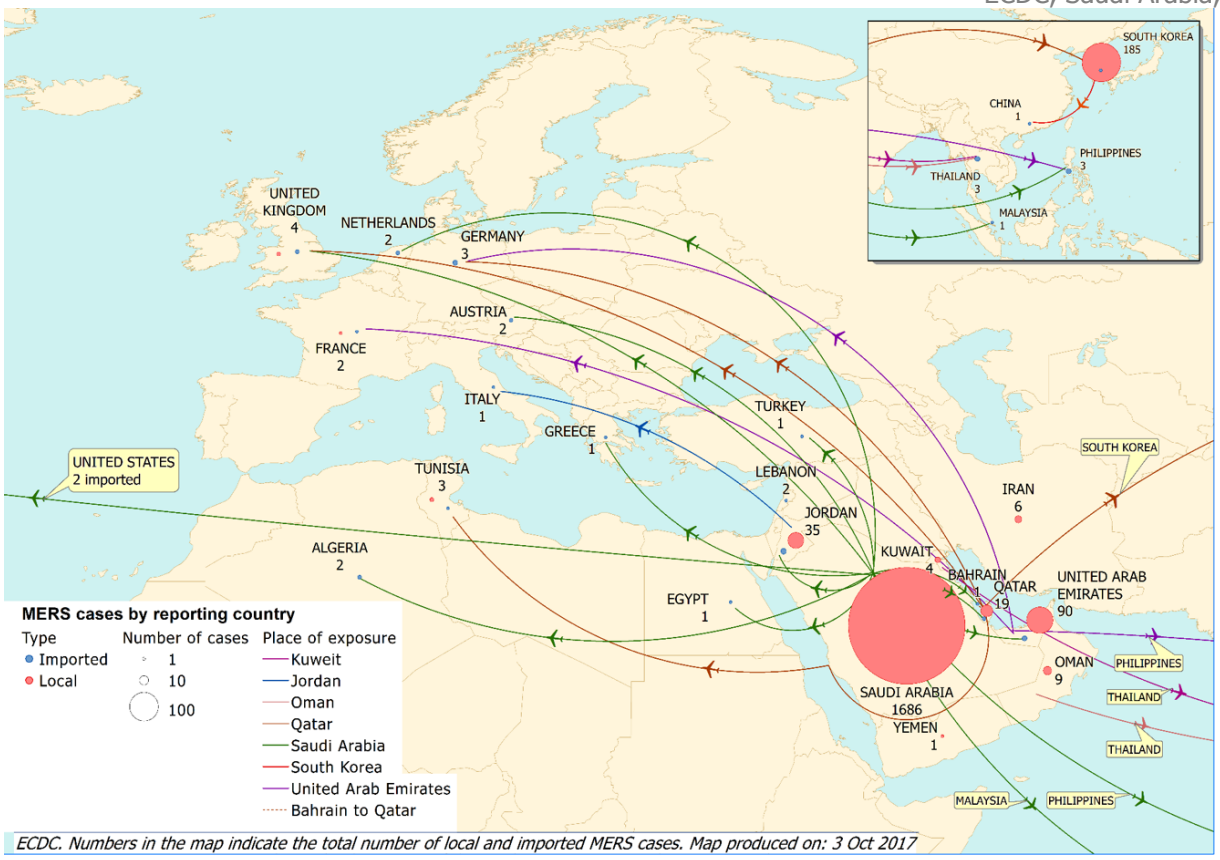
Distribution of confirmed cases of MERS-CoV by country of probable infection and country of report March 2012 to 3 October 2017

ECDC, Saudi Arabia, WHO



ECDC. Numbers in the map indicate the total number of local and imported MERS cases. Map produced on: 3 Oct 2017

Malaria – Cape Verde- 2017

Opening date: 10 August 2017 Latest update: 6 October 2017

Epidemiological summary

In 2017, as of 24 September, the Ministry of Health in Cape Verde had reported 254 cases of malaria. This represents an increase of 53 cases since the last official report on 10 September 2017.
The epicentre of the outbreak is located in the capital city of Praia in Santiago Island. According to WHO, the causative agent is *Plasmodium falciparum*.
In July 2017, Cape Verde reported a sudden increase in the number of malaria cases. According to WHO, Cape Verde is categorised as a 'very limited risk of malaria transmission area', with limited local transmission from September to November, coinciding with the rainy season. In 2017, as of 24 September, 254 cases had been reported. The epicentre of the outbreak is located in the capital city of Praia in Santiago Island. The UK National Travel Health Network and Centre (NaTHNaC) updated the travel recommendation on 5 September, stating that there was a 'very low' risk of malaria on the Island of Santiago (Sao Tiago), except in the city of Praia where the risk had risen to 'low'. For all travellers, awareness of risk and bite avoidance is recommended. Travellers to the city of Praia who are at higher risk of malaria (such as long-term travellers, or those who are at

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risk of severe complications from malaria, e.g. pregnant women, infants and young children, the elderly, and travellers who do not have a functioning spleen) should consider taking chemoprophylaxis with atovaquone-proguanil, doxycycline or mefloquine.

Background: The risk of malaria for Cape Verde is considered as type A (very limited risk of malaria transmission) according to WHO. The most recent major outbreaks were reported in 1999 (140 cases) and 2001 (95 cases). In the last 10 years, autochthonous cases in Praia have not exceeded 30 cases.

ECDC link: ECDC malaria page
Sources: Cape Verde Ministry of Health | WHO| NaTHNaC | Portugal | media | media

ECDC assessment

The increase of autochthonous malaria cases in Cape Verde at the beginning of the rainy season (August to November) is of concern. More cases are likely to be reported in the coming weeks. Member States should consider to reinforce malaria prevention measures for travellers.

Actions

ECDC is monitoring this event through epidemic intelligence.

Plague - Madagascar - 2017

Opening date: 15 September 2017 Latest update: 6 October 2017

Epidemiological summary

As of 3 October 2017, WHO had reported 194 cases of plague in Madagascar, including 30 deaths (CFR:15.5%). WHO is reporting that 68 of these cases were bubonic plague, including nine deaths (CFR:13.2%), 124 were pneumonic plague, including 21 deaths (CFR:16.9%), one case was septicemic plague and one case was not classified.
Pneumonic plague cases are reported in the following areas: Antananarivo (58), Toamasina (39), Faratsiho (13), Anosibe An'ala (4), Miarinarivo (3), Ambohidratrimo (2), Vohemar (2), Mahajanga (1), Moramanga (1) and Tsiroanomandidy (1)

On 29 September 2017, the Malagasy health authorities confirmed a fatal case of pneumonic plague in a basketball coach from the Seychelles. The case died in a hospital in Madagascar on Wednesday 27 September while participating in the Indian Ocean Club basketball championship (Coupe des clubs Champions de l'Océan Indien de Basketball - 23 September to 1 October- Madagascar). The source of transmission for this case remains unknown.

ECDC links: Plague factsheet
Sources: WHO, MoH Madagascar

ECDC assessment

While plague outbreaks in Madagascar are not unexpected, the high proportion of pneumonic plague is of concern. The risk of further transmission in Madagascar is considered high until public health prevention and control measures are fully implemented with the support of the World Health Organization (WHO) and international partners. The risk of regional spread in the Indian Ocean region is considered moderate and the risk for travellers from the EU or for importation to the EU is considered very low.

WHO considers the risk for international spread of plague to be very low and advises against any restrictions to travel and trade with Madagascar based on the information to date. There is no restriction of movement in and out of Antananarivo, where cases have occurred, in accordance with the recommendations of the Malagasy authorities.

According to WHO, prophylactic treatment is only recommended for persons who have been in close contact with plague cases, or who have experienced other high-risk exposures such as bites from fleas or direct contact with bodily fluids or tissues of infected animals.

Actions

ECDC is preparing a rapid risk assessment to be circulated on 5 October 2017.

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Communicable disease risks – Hurricane Irma – 2017

Opening date: 7 September 2017 Latest update: 6 October 2017

Epidemiological summary

On 3 October, French authorities reported a case of leptospirosis in Martinique.
The case had a recent travel history to Saint Martin. According to the report, the main hypothesis is that the contamination occurred in Martinique, however a contamination in Saint Martin cannot be ruled out. In Dominican Republic, on 3 October, authorities reinforced control measures and sensitisation for leptospirosis. In 2017 and as of 3 October, authorities had reported 511 leptospirosis cases, including 44 deaths. Last year, for the same period, 393 cases were reported. Among these 511 cases, 33 were reported in the last three weeks (from 2017-35 to 2017-38). In 2016 for the same period, 67 cases were reported.
In 2017, the provinces reporting the highest attack rate are in the northern part of the country and are the most affected by Irma and Maria hurricanes.

Sources: NOAA | media | ECHO | Haiti MSPP | French authorities | Dominican Republic MoH

ECDC assessment

As a result of the hurricane, there is an increased risk of multiple disease outbreaks, including outbreaks of acute watery diarrhoea, vaccine-preventable diseases, leptospirosis, vector-borne diseases and food-related outbreaks. The situation is particularly critical in areas with low vaccination coverage and where displaced populations face basic living conditions due to flooding and heavy rains.

Actions

ECDC circulated a rapid risk assessment to Member States and the European Commission on 8 September 2017. ECDC has offered to deploy EPIET fellows, if needed.

Poliomyelitis – Multistate (World) – Monitoring global outbreaks

Opening date: 8 September 2005 Latest update: 6 October 2017

Epidemiological summary

Since the last CDTR on 8 September 2017 and as of 3 October 2017, Pakistan has reported one new wild poliovirus type 1 (WPV1). Syria has reported eight and the Democratic Republic of the Congo (DRC) one case of type 2 circulating vaccine-derived poliovirus (cVDPV2). As of 3 October, 11 wild poliovirus cases had been reported, six cases from Afghanistan and five cases from Pakistan. In 2016, 37 cases were reported during the same period. In 2017, 56 circulating cVDPV2 cases have been reported so far, nine from the Democratic Republic of Congo and 47 from Syria. Onset of paralysis in the Syrian cases was between 3 March and 5 August. Forty-four of the cases are from Deir-Ez-Zour governorate (with the bulk of the cases from Mayadeen district), two cases are from Raqqa governorate (one from Talabyad district and one from the newly infected Thawra district) and one is from Homs governorate (Tadmour district). In 2016, only five VDPV2 cases were reported during the same period.

ECDC links: ECDC poliomyelitis web page | Information to travellers to polio-infected countries
Sources: WHO IHR Emergency Committee | Polio eradication: weekly update

ECDC assessment

The last locally-acquired wild polio cases within the current EU borders were reported from Bulgaria in 2001. The most recent wild polio outbreak in the WHO European Region was in Tajikistan in 2010, when importation of WPV1 from Pakistan resulted in 460 cases. Importation of the infection as well as of polio cases in to the EU remains possible.

ECDC links: Rapid Risk Assessment on suspected polio cases in Syria and the risk to the EU/EEA | ECDC poliomyelitis web page

Actions

ECDC monitors reports of polio cases worldwide through epidemic intelligence in order to highlight polio eradication efforts and identify events that increase the risk of wild poliovirus being reintroduced into the EU. Following the declaration of polio as a PHEIC, ECDC updated its risk assessment. ECDC has also prepared a background document with travel recommendations for the EU.

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