

This weekly bulletin provides updates on threats monitored by ECDC.

I. Executive summary

EU Threats

Hepatitis A - Multistate (Europe) - 2013 outbreak

Opening date: 9 April 2013

Latest update: 31 May 2013

Between 1 October 2012 and 19 June 2013, Denmark, Finland, Norway and Sweden reported hepatitis A (HAV) cases due to sub-genotype IB with two related sequences. None of the cases had travel history outside the EU within the period of their potential exposure. Overall, 101 cases have been reported associated with this outbreak, of which 59 are confirmed. The source of the outbreak has not been confirmed but epidemiological investigations in Denmark and Sweden point towards frozen strawberries as the vehicle of infection.

→Update of the week

As of 20 June 2013, 101 cases have been reported, of which 59 are confirmed.

Hepatitis A -Multistate (Europe)- ex Italy

Opening date: 10 May 2013

Latest update: 17 June 2013

An outbreak of hepatitis A (HAV) involving German, Polish and Dutch travellers returning from northern Italy was reported through the Early Warning and Response System. Local Italian authorities also reported an increase in HAV cases in 2013 both at the national level and in the implicated area. The source of the outbreak has not yet been identified but investigations point to frozen berries as the vehicle of infection.

Travellers to areas reporting HAV outbreaks should be reminded of the availability of vaccination to prevent the risk of HAV transmission while travelling.

→Update of the week

During the past week, no new cases have been reported among EU travellers to Italy.

Non EU Threats

New! Novel cyclovirus - Multistate - central nervous system infections

Opening date: 19 June 2013

A novel cyclovirus, named CyC-VN, was identified in the cerebrospinal fluid (CSF) specimens from two Vietnamese patients with CNS infections of unknown etiology. The virus was subsequently detected in 4% of 642 CSF specimens from Vietnamese patients with suspected or confirmed CNS infections. Similar detection rates in feces from healthy children suggested food-borne or orofecal transmission routes, while frequent detection in feces from Vietnamese pigs and poultry (average, 58%) suggested the existence of animal reservoirs for such transmission.

Recently cyclovirus has also been detected in serum or CSF specimens from patients with paraplegia in Malawi.

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

Opening date: 24 September 2012

Latest update: 13 June 2013

Between April 2012 and 20 June 2013, 64 laboratory-confirmed cases, including 38 deaths, of an acute respiratory disease caused by a novel coronavirus have been notified to WHO. The new virus, now named Middle East respiratory syndrome coronavirus (MERS-CoV), is genetically distinct from the coronavirus that caused the SARS outbreak. Cases have originated in Saudi Arabia, Qatar, Jordan and the United Arab Emirates. Cases have occurred in Germany, the United Kingdom, Tunisia, France and Italy in patients who were either transferred for care of the disease or returned from the Middle East. The reservoir of the novel coronavirus has not been established, nor is it clear how transmission has occurred from one sporadic case to another.

→Update of the week

Between 13 and 20 June 2013, six new cases have been reported in Kingdom of Saudi Arabia. Five fatalities were reported during the same time period. The figures reported this week are up to 20 June 2013.

Influenza A(H7N9) - China - Monitoring human cases

Opening date: 31 March 2013

Latest update: 29 May 2013

On 31 March 2013, the Chinese health authorities announced the identification of a novel avian influenza A(H7N9) virus in three seriously ill patients in Shanghai. The outbreak has since spread to Zhejiang (46 cases), Shanghai (34), Jiangsu (26), Henan (4), Anhui (4), Beijing (2), Shandong (2), Fujian (5), Hunan (3), Jiangxi (5) and Taiwan (1). The source of infection and the mode of transmission are yet to be determined. Zoonotic transmission from poultry to humans is the most likely scenario. There is no epidemiological link between most of the cases and sustained person-to-person transmission has not been observed.

→Update of the week

During the past week, no new cases were reported.

Hepatitis A - Multistate - Travel to Egypt

Opening date: 22 April 2013

Latest update: 5 June 2013

From November 2012 to May 2013, several EU Member States reported hepatitis A virus (HAV) infections affecting travellers returning from Egypt. The identification of the same HAV sequence in 20 cases from six of the affected countries confirms a multinational outbreak. The source of the outbreak is still unknown but the descriptive epidemiology and the analysis of the trawling questionnaires received suggests a possible persistent common source of infection in Egypt. This outbreak is a reminder that travellers should be made aware of the importance of HAV vaccination before travelling to HAV endemic areas.

→Update of the week

During the past week, no new cases were reported.

West Nile virus - Multistate (Europe) - Monitoring season 2013

Opening date: 3 June 2013

West Nile fever (WNF) is a mosquito-borne disease which causes severe neurological symptoms in a small proportion of infected people. During the transmission season, between June and November, ECDC monitors the situation in EU Member States and in neighbouring countries in order to inform blood safety authorities regarding WNF affected areas and eventually identify significant changes in the epidemiology of the disease.

→Update of the week

During the past week, no new cases have been reported from EU/EEA and neighbouring countries.

II. Detailed reports

Hepatitis A - Multistate (Europe) - 2013 outbreak

Opening date: 9 April 2013

Latest update: 31 May 2013

Epidemiological summary

From 1 October 2012 until 19 June 2013, Denmark, Finland, Norway and Sweden reported 59 HAV cases due to genotype 1b with two related sequences. None of the cases had travel history outside the EU within the period of their potential exposure. Overall, 101 HAV cases have been reported to be associated with this outbreak.

Epidemiological investigations in Denmark and Sweden point towards frozen strawberries as the vehicle of infection.

On 22 May 2013, the [Swedish Institute for Infectious Disease Control](#) (SMI) published a press release indicating that frozen strawberries of non-domestic origin are likely to be the source of the Swedish outbreak. Other types of berries are no longer suspected in this outbreak. Identification of the producer and country of origin is still ongoing.

On 30 May 2013, the [Danish Food Safety Authority](#) confirmed that specific products with frozen strawberries packaged in Belgium and sold in Denmark, have been voluntarily recalled. Both epidemiological and product investigations point towards these specific products of frozen strawberries as the vehicle of infection for the ongoing hepatitis outbreak in the nordic countries.

Food authorities in the affected Nordic countries have recommended that citizens should boil frozen berries or berries of non-domestic origin before consumption.

Web sources: [ECDC HAV factsheet](#) | [Eurosurveillance 25 April 2013](#)

ECDC assessment

The identification of closely-related HAV sequences in four different countries confirms that this is a multinational food-borne outbreak. The source of the multi-country outbreak has not been confirmed, but epidemiological investigations in Denmark and Sweden point towards frozen strawberries as vehicle of infection.

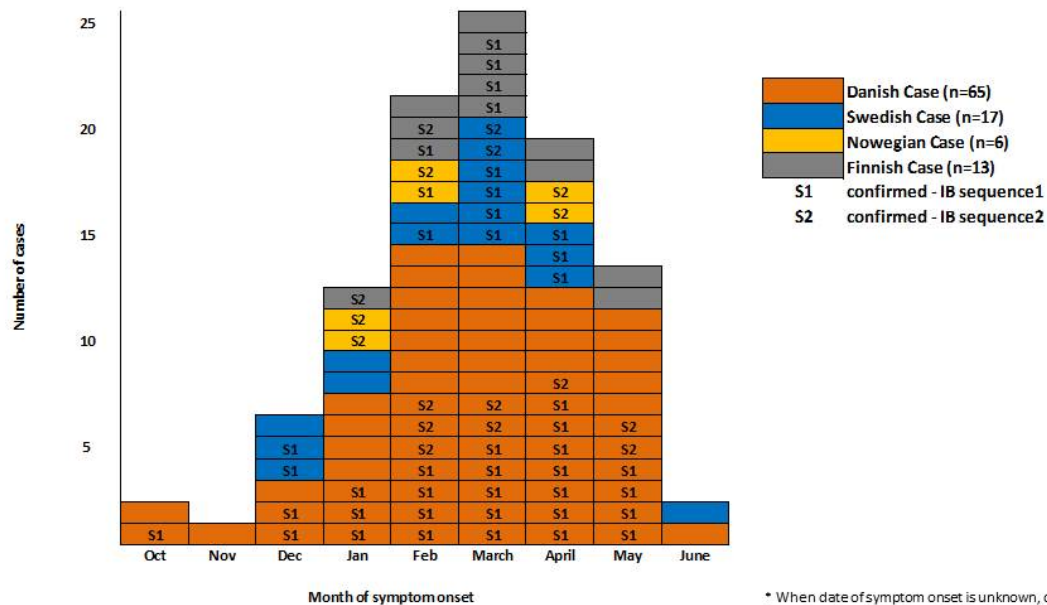
Actions

Food safety authorities and Public Health Authorities in the affected countries are actively collaborating to uncover the vehicle of infection and to prevent occurrences of additional cases.

ECDC and EFSA published a joint [rapid outbreak assessment](#) on 16 April.

Distribution of HAV cases, by month of onset, country and sequence, October 2012 to June 2013

ECDC



* When date of symptom onset is unknown, date of diagnosis, date of testing, date of hospitalisation or date of notification have been used.

Hepatitis A -Multistate (Europe)- ex Italy

Opening date: 10 May 2013

Latest update: 17 June 2013

Epidemiological summary

Since 1 January 2013, 15 laboratory-confirmed cases of HAV infection have been reported in Germany, the Netherlands and Poland among travellers who visited the autonomous provinces of Trento and Bolzano in northern Italy during the exposure period. The latest case had onset of symptoms on 2 May 2013. Two of the travellers (one German and one Dutch traveller) had identical sequences of HAV sub-genotype IA.

During this same period, Italy experienced an increase in cases of HAV infection both in the province of Trento and at the national level. In total, 31 cases of HAV have been reported from Trento since the beginning of 2013. In the analysed samples from cases in Trento, a 100% match was found with the sequences obtained from the Dutch and German cases.

The consumption of berries reported by many of the cases, the positive HAV findings in frozen berries taken from the supplier of the three hotels that hosted the affected tourists and the identification of mixed, frozen berries contaminated with HAV from the

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fridge of HAV cases point to the outbreak being food-borne with mixed frozen berries as the vehicle.

On 17 and 30 May 2013, two rapid alert system for food and feed (RASFF) notifications was issued by Italian food authorities regarding the mixed frozen berries found to be contaminated with HAV. The frozen berry mix originated from Italy, with raw berry material from Bulgaria, Canada, Poland and Serbia. Following the notification, the distributor of the mixed frozen berries voluntarily withdrew these from the national market. Investigations into the traceability of the product is currently underway together with a case-control study.

ECDC assessment

The voluntary withdrawal of the mixed frozen berries by the distributor has decreased the risk of infection for residents and visitors to northern Italy. However, the specific berry type has not yet been identified and due to the long shelf life of frozen berries, it is likely that a part of the initial batch may still be circulating or will be stored in household freezers. Occurrence of further cases cannot be excluded.

Actions

A joint ECDC-EFSA assessment was published on this outbreak on 29 May 2013 on the [ECDC website](#).

New! Novel cyclovirus - Multistate - central nervous system infections

Opening date: 19 June 2013

Epidemiological summary

A mBio article published on 18 June 2013 described the identification of a novel cyclovirus, named CyCV-VN, in cerebrospinal fluid (CSF) specimens from two Vietnamese patients with central nervous system (CNS) infections of unknown etiology. Subsequently CyCV-VN was detected in 26 of 642 (4%) acute-infection CSF specimens (collected from 1999 to 2009), including 10 of 273 (3.7%) CSF specimens from patients with CNS infections of unknown etiology and 16 of 369 (4.3%) samples from patients in whom laboratory-confirmed CNS infection with other pathogens was established. CyCV-DNA could not be detected in 122 CSF specimens collected from Vietnamese patients with noninfectious neurological disorders. CyCV-VN DNA was also detected in 8/188 (4.2%) fecal specimens from healthy children. When specimens from poultry and pigs were tested, the virus was detected in 38/65 (58%).

Another article published online on 10 June 2013 in Emerging Infectious Diseases described the detection of cyclovirus in eight (15%) of 54 serum samples and 4 (10%) of 40 CSF samples from paraplegia patients in Malawi.

Web sources:

[mBio article](#) | [Emerging Infectious Diseases article](#)

ECDC assessment

This is the first time that cyclovirus is associated with human infection. However further studies are needed in order to definitively establish a causal relationship.

Actions

ECDC is preparing a Rapid Risk Assessment of these findings.

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

Opening date: 24 September 2012

Latest update: 13 June 2013

Epidemiological summary

The first confirmed case was reported in a 60-year-old male who lived in Saudi Arabia. He died from severe pneumonia complicated by renal failure in Jeddah on 24 June 2012. The genome of the new coronavirus was isolated from this case, sequenced and the genetic code put in the public domain.

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In September 2012, a 49-year-old male living in Qatar presented with symptoms similar to the first case. He was transferred to Europe for further care. A virus was isolated from this case, sequenced and the genetic code put in the public domain by the UK authorities. It was found to be almost identical to the virus from the case in Saudi Arabia. The emergence of a novel coronavirus causing severe respiratory disease in two separate parts of the Middle East led to notifications through the International Health Regulations (IHR) and the EU Early Warning and Response System (EWRS) on 22 September 2012.

In November 2012, four additional cases with similar symptomatology were diagnosed in Saudi Arabia, including a family cluster of three confirmed cases, one probable case and a second imported case to Europe (from Qatar to Germany) reported on 23 November.

Subsequently, two fatal cases were confirmed retrospectively in Jordan. Both cases came from a cluster of 11 people with severe lower respiratory infections associated with a hospital in April 2012. Although the other nine persons also matched the WHO definition for probable novel coronavirus infections, the cases were less severe than the two confirmed cases. It has not yet been possible to undertake confirmatory virological or serological testing for these probable cases.

Three additional cases were diagnosed in February 2013 in the UK in a family cluster associated with an index case who had a travel history to Saudi Arabia and Pakistan. These cases included the first two transmissions in Europe. These cases resulted in four cases identified and reported by the UK to date.

At the end of March, a second imported case to Germany was reported: a person seeking medical care arriving from the United Arab Emirates. The patient, a 73-year-old male with underlying clinical conditions, had been hospitalised in United Arab Emirates and was transferred for clinical care to a hospital in Germany where the diagnosis of MERS-CoV infection was confirmed. Despite intensive-care treatment, the patient died on 26 March.

In the beginning of May, twenty-two cases including 10 deaths were reported by Saudi Arabia. All cases belonged to a cluster in Al Ahsa in the Eastern Province of Saudi Arabia, which may be linked to a single healthcare facility. This outbreak was later described in detail in a [NEJM](#) article on 19 June.

The first case reported by France on 7 May 2013 was in a French resident with a history of travel to Dubai, United Arab Emirates, in the two weeks prior to onset of illness in France (9–17 April). The 65-year-old man had a history of renal impairment and had sought medical care in France for fever, diarrhoea and lumbar pain on 23 April. Though he did not initially present with respiratory symptoms, pneumonia was subsequently diagnosed and laboratory tests were undertaken for novel coronavirus infection, as recommended by national and ECDC guidance. A naso-pharyngeal specimen was negative for MERS-CoV on 3 May. A bronchoalveolar lavage (BAL) specimen taken on 26 April arrived at the Reference Laboratory on 7 May and tested positive for MERS-CoV. He died on 28 May. On 12 May, France informed ECDC of an additional laboratory-confirmed case. The case is an immunosuppressed male in his fifties who, from 27 to 29 April 2013, shared a hospital room with the first laboratory-confirmed patient in France. This secondary case was identified as part of the epidemiological investigation initiated by the French authorities, following laboratory confirmation of the first case on 7 May 2013. The patient is currently hospitalised. An epidemiological investigation and contact identification was performed. No other cases of MERS-CoV infection were identified among the index case's 123 contacts, nor among 39 contacts of the secondary case, during the 10-day follow-up period.

Web sources: [WHO](#) | [ECDC RRA 19 February](#) | [ECDC RRA Update 17 June](#) | [ECDC novel coronavirus website](#) | [RKI risk assessment 26 March](#) | [WHO update 2 May](#) | [MoH France 08 May](#) | [InVS 13 May](#) | [WHO update 07 June](#)

ECDC assessment

The additional recent novel coronavirus cases reported by the Saudi Arabian authorities indicate an ongoing source of infection present in the Arabian Peninsula.

The French index case who presented with diarrhoea is a reminder of the possibility that initial presentations may not necessarily include respiratory symptoms, especially in those with immunosuppression or underlying chronic conditions. This needs to be taken into account when revising case-finding strategies. This case in France was the second nosocomial transmission in Europe following one reported in the UK in February 2013, highlighting the risk of onward transmission in Europe, in particular in healthcare settings. Both French patients had underlying conditions, and a degree of immunosuppression. One of the transmissions in the UK was also to an immunosuppressed person. These underlying conditions may be increasing the vulnerability and the risk of transmission. Specimens from the upper respiratory tract tested negative for some patients who were later confirmed to be infected by MERS-CoV in samples collected from the lower respiratory tract. Therefore, specimens from patients' lower respiratory tracts should be obtained for diagnosis where possible.

Information on many of the basic epidemiological indicators required for determining effective control measures are still missing for most cases that occurred in the Middle East, e.g. the reservoir of infection, risk groups, incubation period, period of infectivity and settings where infection has occurred.

The imported cases reported by Germany, France and Italy, following medical evacuation and travel, suggest that more imported cases may be expected in the EU in the future.

Due to the large number of guest workers in Saudi Arabia attention must also be drawn to the possible importation of MERS-CoV to the South East and Pacific Asia.

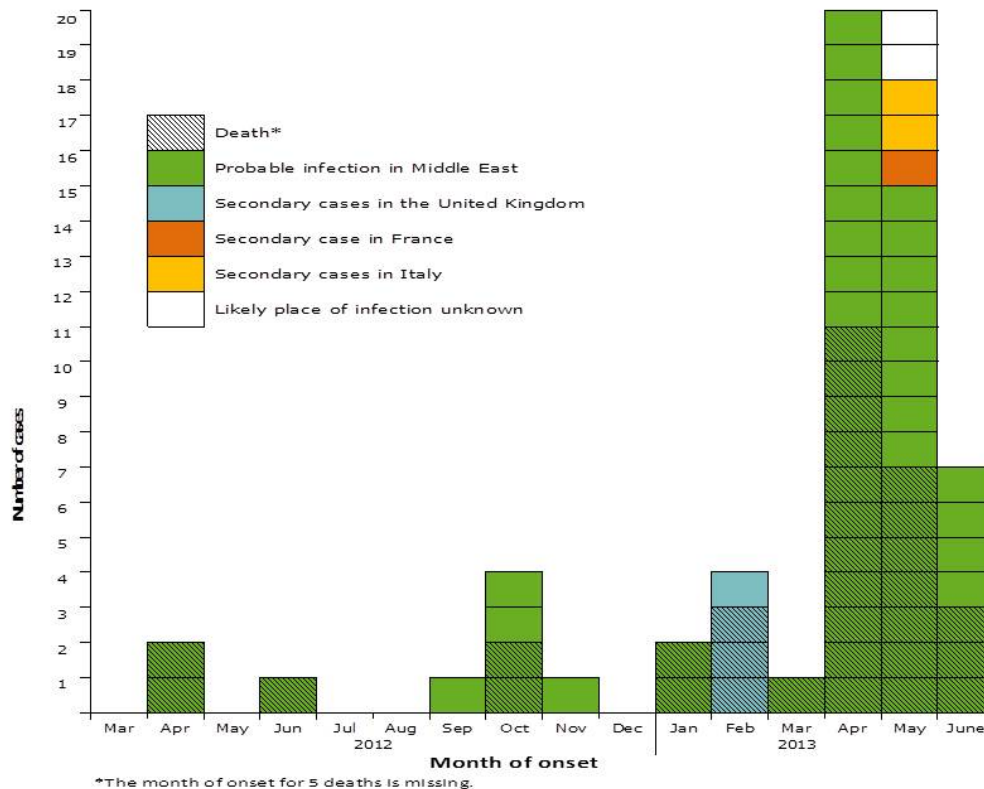
Actions

ECDC published an updated [rapid risk assessment](#) on 17 June 2013. The results of an ECDC-coordinated survey on laboratory capacity for testing the novel coronavirus in Europe were published in [EuroSurveillance](#).

ECDC is closely monitoring the situation in collaboration with WHO and the European Union Member States.

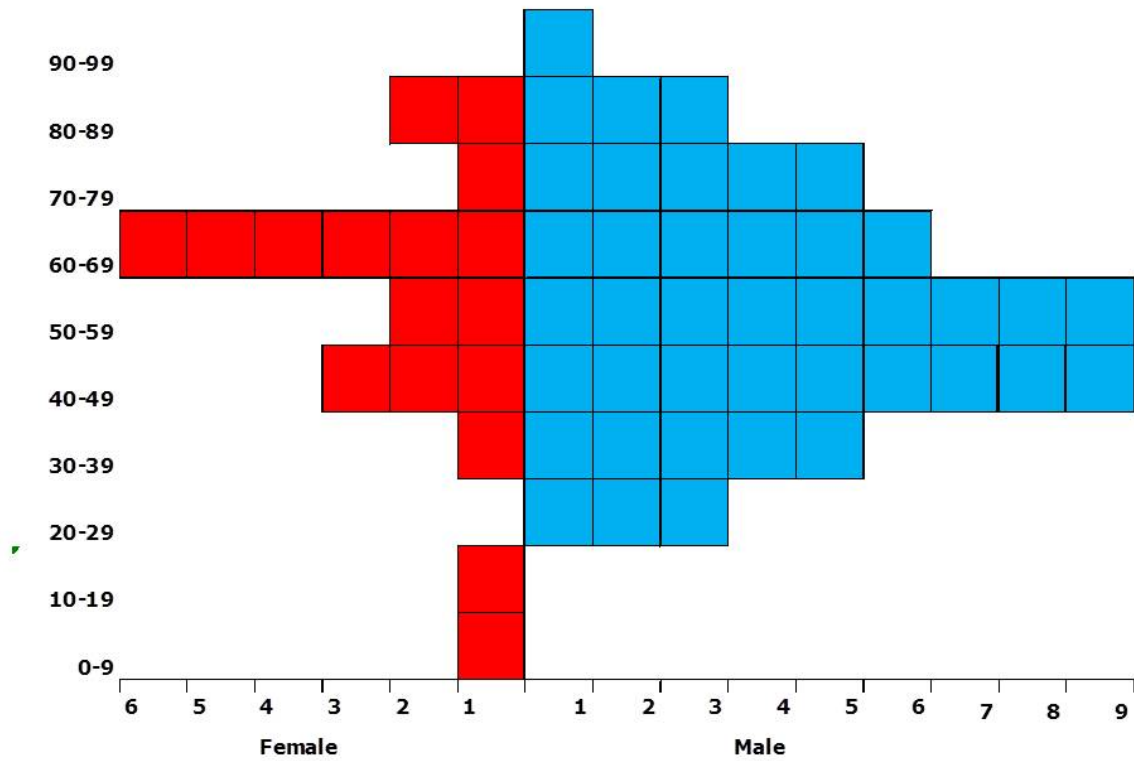
Distribution of confirmed cases of MERS-CoV reported worldwide, by month of disease onset, outcome and place of infection, April 2012 - 17 June 2013 (N=63, one case with missing month of onset)

ECDC



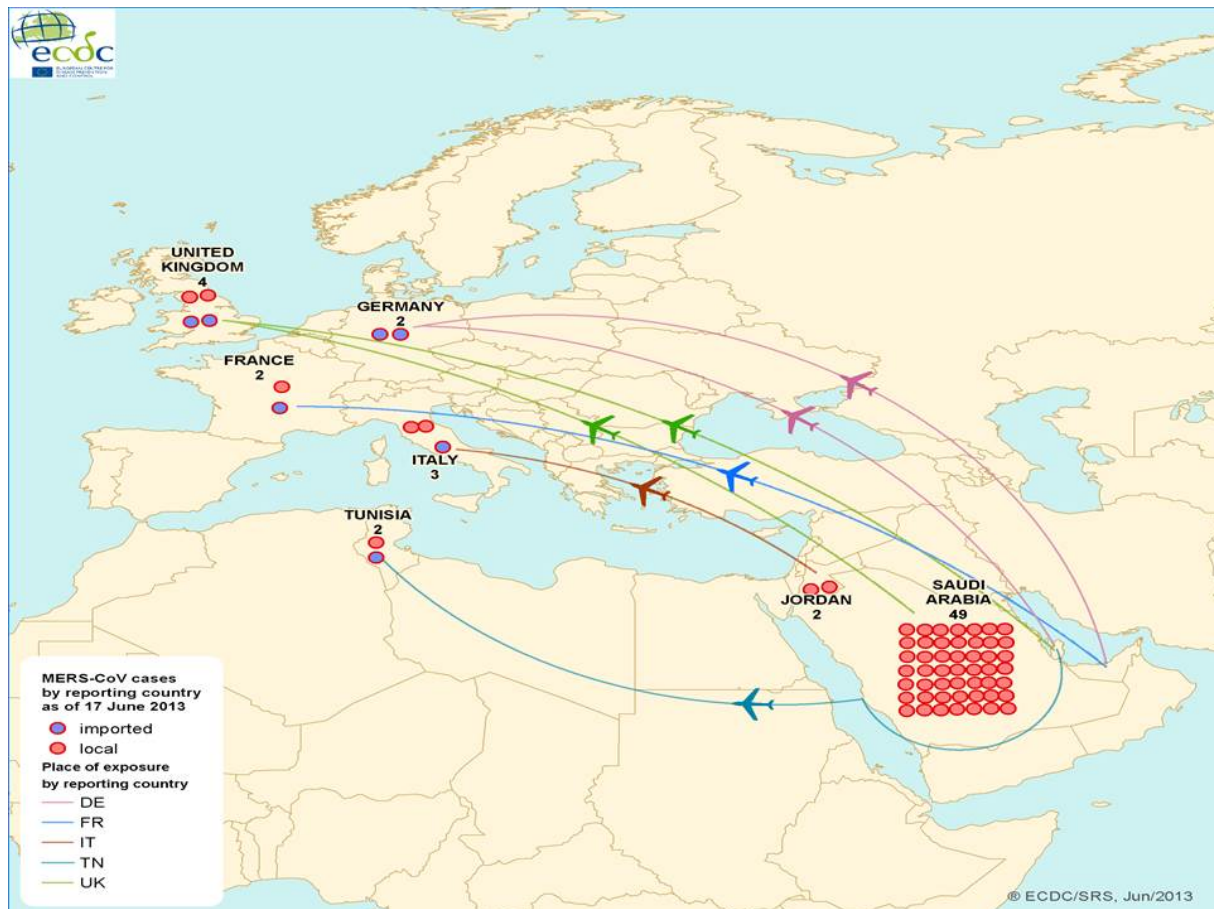
Distribution of cases of MERS-CoV by gender and age, April 2012 – 17 June 2013 (N=61) [Three cases with missing age and/or sex information]

ECDC



Distribution of confirmed cases of MERS-CoV by place of reporting and place of exposure, April 2012 to 17 June 2013 (n=64)

ECDC



Influenza A(H7N9) - China - Monitoring human cases

Opening date: 31 March 2013

Latest update: 29 May 2013

Epidemiological summary

On 31 March 2013, Chinese authorities announced the identification of a novel reassortant A(H7N9) influenza virus isolated from three unlinked fatal cases of severe respiratory disease in eastern China, two in Shanghai and one in Anhui province. The WHO Collaborating Centre for Reference and Research on Influenza at the Chinese Centre for Disease Control and Prevention (CCDC) subtyped and sequenced the viruses and found them to be of almost identical low pathogenic avian origin.

Since 31 March 2013, 132 cases of human infection with influenza A(H7N9) have been reported from eastern China and Taiwan: Zhejiang (46 cases), Shanghai (34), Jiangsu (26), Henan (4), Anhui (4), Beijing (2), Shandong (2), Fujian (5), Hunan (3), Jiangxi (5) and Taiwan (1). In addition, the virus has been detected in one asymptomatic case in Beijing. The dates of onset of disease have been between 19 February and 21 May 2013. The date of disease onset is currently unknown for fifteen patients. Most cases have developed severe respiratory disease. Thirty seven patients have died (case-fatality ratio=28%). The median age is 61 years ranging between four and 91 years; 37 of 132 patients are female.

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The Chinese health authorities responded to this public health event with enhanced surveillance, epidemiological and laboratory investigation and contact tracing. The animal health sector has intensified investigations into the possible sources and reservoirs of the virus. The authorities reported to the World Organisation for Animal Health (OIE) that avian influenza A(H7N9) was detected in samples from pigeons, chickens and ducks, and in environmental samples from live bird markets ('wet markets') in Shanghai, Jiangsu, Anhui and Zhejiang provinces. Authorities have closed markets and culled poultry in affected areas.

Web sources: [Chinese CDC](#) | [WHO](#) | [WHO FAQ page](#) | [Centre for Health Protection Hong Kong](#) | [OIE](#) | [Chinese MOA](#) |

ECDC assessment

Influenza A(H7N9) is a zoonotic disease that has spread or is spreading in poultry in parts of eastern China causing a severe disease in humans. At this time there is no evidence of sustained person-to-person transmission. Close to 3 000 contacts have been followed-up and only a few are reported to have developed symptoms, as part of three small family clusters.

At present, the most immediate threat to EU citizens is to those in China who are strongly advised to avoid live bird markets. The risk of the disease spreading to Europe via humans in the near future is considered low. However, it is likely that people presenting with severe respiratory infection in the EU and a history of potential exposure in the outbreak area will require investigation in Europe.

There is no specific guidance on blood or tissue donor deferral for exposure to avian influenza. The incubation period for A(H7N9) is assumed to be 10 days or less, and there is no reason to believe that infected people will be viraemic beyond the acute disease episode. Therefore, the risk of transmission through blood transfusion can be considered very low in the context of the current donor selection procedures.

The gradual geographical extension seems to have stopped and there has been a decline in the number of cases since the beginning of May, possibly due to the closure of urban live bird markets in China. The fact that human infections with bird flu viruses tend to drop off during spring and summer in affected countries could also play a role. Many unanswered questions remain, however, regarding this outbreak, e.g. the reservoir, the route of transmission, the spectrum of disease and the reason for the unusual age-gender imbalance.

Actions

ECDC is closely monitoring developments and is continuously re-assessing the situation in collaboration with WHO, the US CDC, the Chinese CDC and other partners.

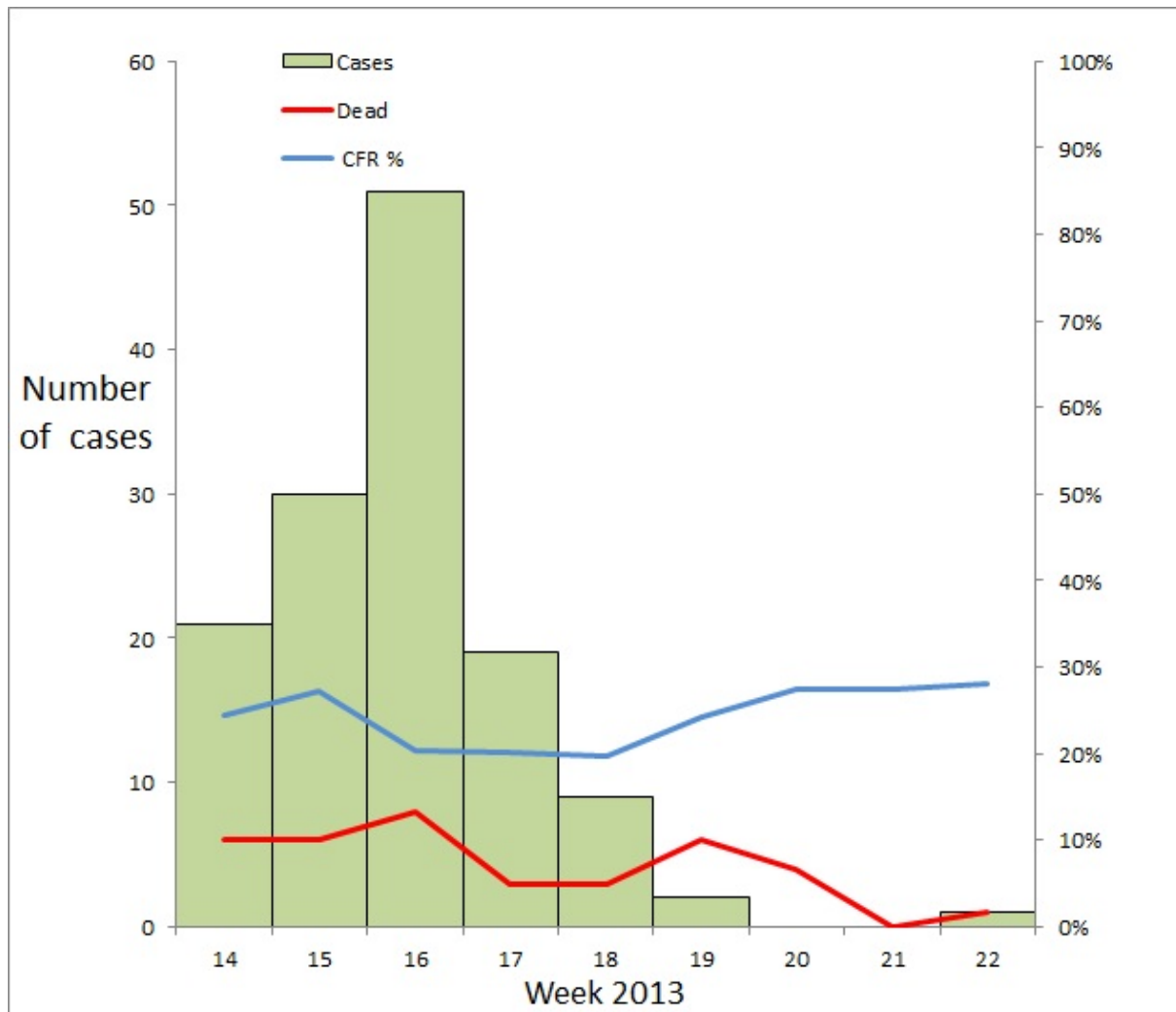
ECDC published an updated [Rapid Risk Assessment](#) on 8 May 2013.

A case detection algorithm and an EU case definition has been developed and shared with EU Member states.

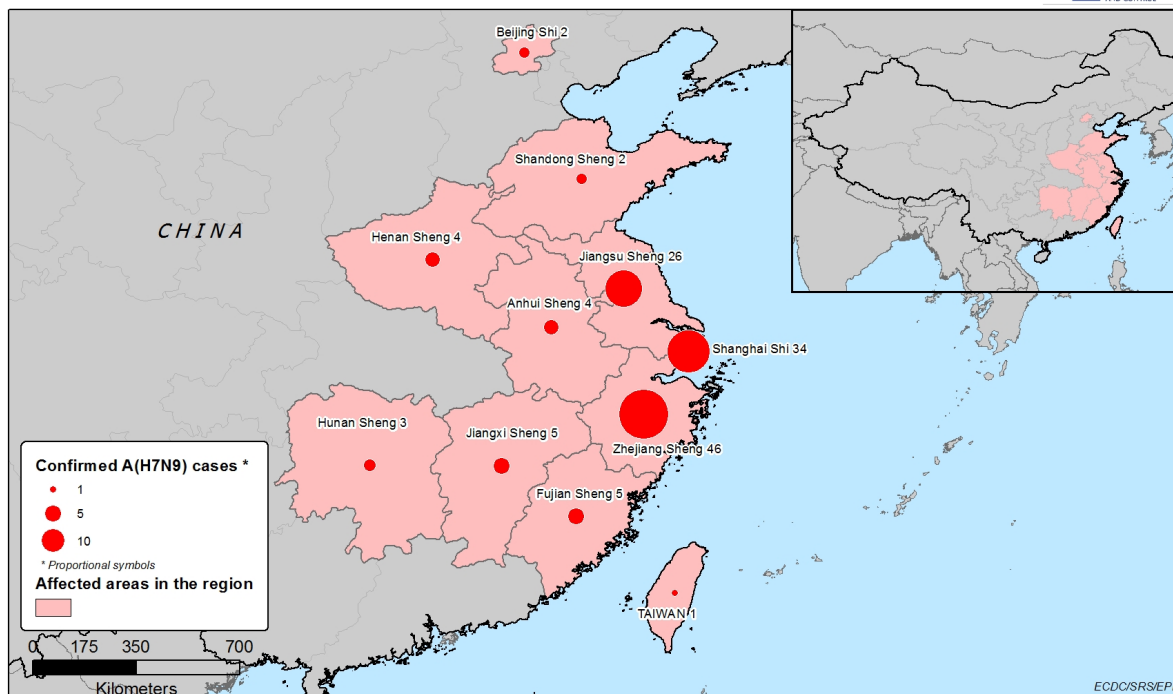
ECDC guidance for [Supporting diagnostic preparedness for detection of avian influenza A\(H7N9\) viruses in Europe](#) for laboratories was published on 24 April 2013.

Distribution of cases and deaths, and cumulative case-fatality ratio by week of reporting, as of 13 June 2013 (cases =132, fatalities=37, CFR=28%)

WHO



Reported cumulative number of confirmed cases of novel influenza A(H7N9) by province in China, as of 12 June 2013, 15.00 CEST



Hepatitis A - Multistate - Travel to Egypt

Opening date: 22 April 2013

Latest update: 5 June 2013

Epidemiological summary

Fourteen EU/EEA countries have reported 106 cases with HAV (genotype 1b) infections among travellers returning from Egypt. Of these, 20 cases share an identical RNA sequence. Interviewed cases reported having travelled to at least three different locations in the Red Sea region (Sharm-El-Sheikh, Hurghada and Taba-Sinai) and having stayed at different hotels and resorts. Sixty-eight cases have information about their vaccination status and all were unvaccinated.

Web source: [ECDC rapid risk assessment](#) | [Eurosurveillance 25 April 2013](#)

ECDC assessment

HAV infections among travellers returning from Egypt have been reported in several EU Member States. The same HAV sequence was identified in cases from Denmark, France, Ireland, the Netherlands, Norway and the UK, confirming a multinational outbreak. The distribution of cases over time suggests a persistent common source outbreak - potentially food-borne - the source of which has not yet been identified.

Actions

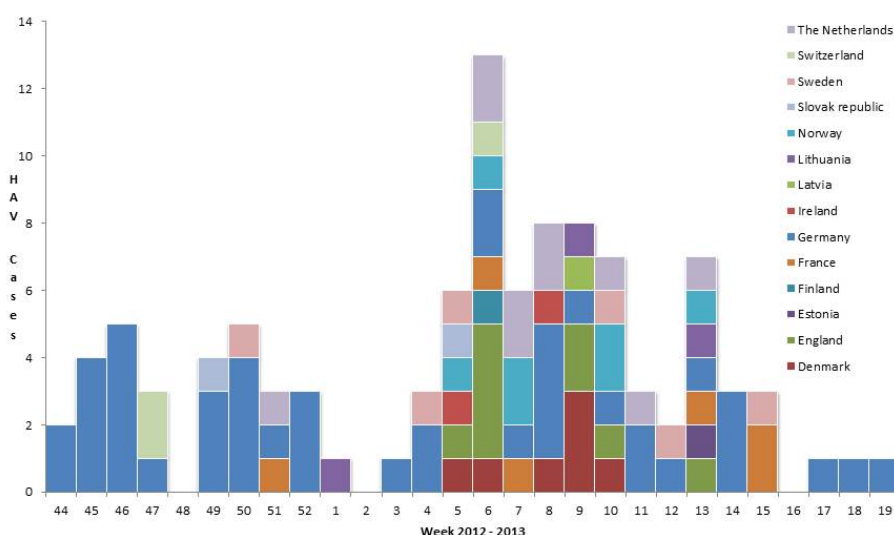
ECDC has published a [rapid risk assessment](#). Public health authorities in the affected countries, ECDC and WHO are actively collaborating to detect the source of the infection in order to prevent the occurrence of additional cases. ECDC is coordinating this investigation. Interviews with some of the cases using a trawling questionnaire have been performed and analysed. ECDC has requested Egypt to trace-back berries from four hotels with the most reported cases. A case-control study to identify the source or vehicle of infection is currently under way.

Hepatitis A cases among travellers coming back from Egypt

ECDC

HAV cases in EU/EEA travellers returning from Egypt by date of onset*

* Date of notification used when date of onset missing; n=103 (three cases missing information)



West Nile virus - Multistate (Europe) - Monitoring season 2013

Opening date: 3 June 2013

Epidemiological summary

So far in 2013, no cases of WNF have been reported in EU Member States.

Outside the EU, the Astrakhanskaya oblast in the Russian Federation reported four laboratory confirmed cases of WNV on 31 May 2013. The cases were reported in the city of Astrakhan (1), Volga region (2) and Kamyzyaksky district (1). Two of the cases are children aged 3-5 years. Two of the cases have recovered and been discharged from hospital.

Websources: [ECDC West Nile fever risk maps](#) | [Astrakhanskaya oblast](#) |

ECDC assessment

Cases of WNV were reported in the Astrakhanskava oblast in 2010, 2011 and 2012, but the transmission season has started earlier this year with the first WNV cases detected in early May compared to early June in 2012.

Actions

ECDC produces weekly West Nile fever risk maps during the transmission season to inform blood safety authorities regarding WNF affected areas. This supports national authorities in implementing control measures to prevent the transmission of WNF through blood products. Appropriate control measures as per the EU WNV and blood safety preparedness plan and the EU blood directive include either geographical donor deferral or the implementation of systematic Nucleic Acid Tests (NAT) screening of

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blood donors or visitors from affected areas.

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