Influenza transmission in Europe shows a clear seasonal pattern, with peak activity during winter months. ECDC monitors influenza activity in Europe during the winter season and publishes its report weekly on the Flu News Europe website.

In week 15/2016, influenza activity continued to decrease in the WHO European Region. Most countries (92%) reported decreasing trends, with associated lower numbers of specimens being collected and fewer testing positive for influenza virus (32%) than in the previous week (35%). As is often seen late in the northern hemisphere’s influenza season, a shift towards circulation of type B influenza virus has occurred. Type B accounted for 62% of influenza virus detections from sentinel sources and 17–23% among hospitalised severe cases. Fewer cases of severe disease were reported than in previous weeks, although numbers varied between countries. Cases occurred mainly in people under the age of 65, and the great majority of those testing positive for influenza virus were infected by A(H1N1)pdm09 viruses.

Europe is experiencing its largest influx of refugees since the Second World War. According to the UN Refugee Agency (UNHCR), more than one million refugees arrived in Europe in 2015 and around 150 000 in 2016. To date, there have been reports of cases of acute respiratory tract infections, louse-borne relapsing fever, cutaneous diphtheria, scabies, measles, meningococcal meningitis, shigellosis, typhoid fever, hepatitis A, tuberculosis and malaria among refugees. While these cases do not represent a significant disease burden for the host countries, the diseases pose a potential threat, particularly to the health of the refugees themselves.

No new events of epidemiological relevance have been reported during the past week.
Zika - Multistate (world) - Monitoring global outbreaks
Opening date: 16 November 2015 Latest update: 21 April 2016

As of 22 April 2016, 49 countries and territories have reported autochthonous cases of Zika virus infection during the past nine months. On 1 February 2016 WHO declared that Zika virus infection and the clusters of microcephaly cases and other neurological disorders constitutes a public health emergency of international concern (PHEIC) and acknowledge the scientific consensus that Zika virus is a cause of microcephaly and Guillain-Barré syndrome. Considering the growing body of evidence of adverse pregnancy outcomes associated with Zika virus infection, ECDC recommends that pregnant women postpone non-essential travel to Zika-affected areas.

Update of the week
Since last week:
On 16 April 2016, Peruvian health authorities reported the first local case of Zika virus infection through sexual transmission. The Netherlands report continuing circulation of Zika virus in four (Curaçao, Aruba, Sint Maarten and Bonaire) of six islands constituting the Netherlands Outermost Territories in the Caribbean sea. In Chile, media quoting health authorities, report the presence of the Aedes aegypti mosquito (a competent vector for Zika) in Arica (2 000 kilometres north of Santiago).

Update on the observed increase of congenital Zika syndrome and other neurological complications
Microphythe and other foetal malformations potentially associated with Zika virus infection or suggestive of congenital infection have been reported in Brazil (1 168 cases), Cape Verde (two cases), Colombia (seven cases), French Polynesia (eight cases), Martinique (three cases) and Panama (three cases). In the Marshall Islands, the health authorities report a case of microcephaly in the baby of a mother who was IgM Zika positive that occurred in March 2016.

In the context of Zika virus circulation, 13 countries or territories have reported an increased incidence of Guillain-Barré syndrome (GBS) and/or laboratory confirmation of a Zika virus infection among GBS cases.

Meetings
ECDC organised a meeting in Paris on 20 and 21 April regarding 'Zika virus infection and review of surveillance and control measures for strengthening regional cooperation regarding Zika virus and its possible spread in the EU'. During the meeting, experts shared experience acquired in responding to the Zika threat in the European areas with Aedes mosquitoes, including EU Overseas Countries and Territories/Outermost regions. Options for enhanced surveillance and local vector control measures were discussed.

Outbreak of yellow fever - Africa - 2016
Opening date: 17 March 2016 Latest update: 8 April 2016

There is an ongoing outbreak of yellow fever in Angola that started in December 2015 in the municipality of Viana, Luanda province, and then spread to other provinces of Angola. As of 19 April, 1 908 suspected cases of yellow fever (617 laboratory confirmed) and 250 deaths have been reported. The majority of the cases are concentrated in Luanda and in two other provinces, Huambo and Huila. Cases were also reported among citizens of Cape Verde, Congo, China, DR Congo, Eritrea, India, North Korea, Somalia and Kenya living in Angola. Interventions are ongoing to enhance surveillance. A mass immunisation campaign is taking place. An outbreak has been reported in Masaka district in Uganda with ten fatalities and seven confirmed yellow fever cases. At present, there are no indications that this outbreak is linked to the outbreak in Angola.

Update of the week
Cross border and international spread of the disease from Angola has been documented with cases exported to China, Kenya and DR Congo.

Ebola Virus Disease Epidemic - West Africa - 2014 - 2016
Opening date: 22 March 2014 Latest update: 8 April 2016

The largest ever epidemic of Ebola virus disease (EVD) affected West Africa from December 2013 to January 2016, mainly affecting Guinea, Liberia and Sierra Leone. On 8 August 2014, WHO declared the Ebola epidemic in West Africa a Public Health Emergency of International Concern (PHEIC). As of 10 April 2016, WHO has reported 28 616 cases of Ebola virus disease related to the outbreak in West Africa, including 11 310 deaths. Sierra Leone was declared Ebola-free by WHO on 7 November 2015, Guinea on 29 December 2015 and Liberia on 14 January 2016. On 29 March 2016, WHO declared the end of the PHEIC and advised that all temporary recommendations previously adopted should now be terminated. However, since the end of February 2016 and as of 10 April, there have been seven confirmed and three probable cases of EVD in Guinea. Of these cases, eight have died. Since 31 March 2016, three confirmed EVD cases have been reported in Liberia. The first case was a woman who had recently travelled from Guinea to Liberia and who died; the other two cases are her two children.

Update of the week

2/12
Between 15 and 21 April, there have been no new cases reported in Guinea.

**Poliomyelitis - Multistate (world) - Monitoring global outbreaks**

Global public health efforts are ongoing to eradicate polio, a crippling and potentially fatal disease, 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) on 5 May 2014 due to concerns regarding the increased circulation and international spread of wild poliovirus during 2014. On 1 March 2016, the Temporary Recommendations in relation to the PHEIC were extended for another three months. WHO recently declared wild poliovirus type 2 eradicated worldwide.

**Update of the week**

During the past week, WHO reported one new wild poliovirus type 1 (WPV1) case in Afghanistan. There were no cVDPV cases reported.

The globally synchronised switch from the trivalent (tOPV) to bivalent (bOPV) oral polio vaccine started on 17 April 2016.
II. Detailed reports

Influenza - Multistate (Europe) - Monitoring 2015-2016 season
Opening date: 2 October 2015  Latest update: 15 April 2016

Epidemiological summary
This season, influenza A(H1N1)pdm09 viruses have predominated in most countries in the Region, although type B has dominated since week 9/2016 in specimens from primary care surveillance. Influenza activity, based on laboratory-confirmed mild and severe cases in sentinel and non-sentinel sources, peaked in weeks 5–7/2016. The countries first affected tended to be located in the eastern part of the Region. Data from the 17 countries or regions reporting to the European monitoring of excess mortality for public health action project (EuroMOMO) suggest a pattern of excess all-cause mortality among those aged 15–64 years since the end of 2015. This may be associated with influenza as well as other factors. The level of excess all-cause mortality is similar to the 2012–2013 winter season and slightly lower than that of the 2014–2015 winter season.

Most of the viruses genetically characterised have been similar to those recommended for inclusion in the trivalent or quadrivalent vaccines for the 2015–2016 influenza season in the northern hemisphere. The vast majority of the viruses genetically and/or phenotypically characterised so far, show no indications of reduced susceptibility to the neuraminidase inhibitors oseltamivir and zanamivir. Recommendations on the composition of the seasonal influenza vaccines for the 2016–2017 season in the northern hemisphere call for replacement of the A(H3N2) component with a more recent virus and inclusion of a B/Victoria-lineage virus in trivalent vaccines.

Risk assessments for the season are available from the European Centre for Disease Prevention and Control (ECDC) and the WHO Regional Office for Europe websites.

ECDC assessment
Most of the viruses antigenically and/or genetically characterised so far have been similar to those recommended for inclusion in the trivalent or quadrivalent vaccines for this season in the northern hemisphere. There are no indications among the majority of currently circulating seasonal influenza viruses of reduced susceptibility to neuraminidase inhibitors oseltamivir or zanamivir.

Actions
ECDC monitors influenza activity in Europe during the winter season and publishes its report weekly on the Flu News Europe website. Season risk assessments are available from ECDC and WHO.

Public health risks - Multistate - Refugee movements
Opening date: 4 November 2015  Latest update: 20 April 2016

Epidemiological summary
There have been reports of emerging episodes of communicable diseases affecting the refugee population, including acute respiratory tract infections, louse-borne relapsing fever, cutaneous diphtheria, scabies, measles, meningococcal meningitis, shigellosis, typhoid fever, hepatitis A, tuberculosis and malaria.

ECDC assessment
Refugees are currently not a threat to Europe with respect to communicable diseases, but they are a priority group for communicable disease prevention and control efforts as they are more vulnerable. The risk that refugees arriving in Europe will contract communicable diseases has increased because of the current overcrowding at reception facilities. The risk of infectious diseases varies with the seasons particularly for respiratory, gastrointestinal and mosquito-borne diseases. The risk of infectious diseases in refugees increases with overcrowding and lack of access to water and sanitation. Low vaccination coverage for some diseases, along with low immunity for others, may result in susceptible refugees developing diseases such as measles and chicken pox, given their high incidence in some regions of the EU.

WHO, UNHCR and UNICEF jointly recommend that refugees, asylum seekers and migrants should have non-discriminatory, equitable access to healthcare services, including vaccines, irrespective of their legal status. They should be provided with timely immunisation against vaccine-preventable diseases, particularly measles and polio. All countries should have effective disease surveillance and reporting systems, outbreak investigation ability and case management and response capacity.
The risk to European residents of being affected by outbreaks occurring among refugee populations remains extremely low because overcrowding, limited access to clean water and poor hygiene levels are mostly encountered in certain reception facilities for refugees.

**Actions**

Following the request of the Greek authorities an ECDC senior expert has been in the field to review the risk assessment for communicable diseases on the basis of the current situation, supported the revision of the protocol for Point of Care public health surveillance for refugees and advised on response procedures and priority settings. Two EPIET fellows were deployed to Greece on 13 April 2016 for one month to support communicable disease surveillance and response operations.


ECDC prepared:


ECDC, in collaboration with Member States, the European Commission and WHO, continues to closely monitor the situation to rapidly identify and assess potential communicable disease threats.

**Zika - Multistate (world) - Monitoring global outbreaks**

Opening date: 16 November 2015  
Latest update: 21 April 2016

**Epidemiological summary**

**Brazil**

Between October 2015 and as of 9 April 2016, Brazil reported 7 150 suspected cases of microcephaly from 1 348 municipalities in all states and in the Federal District. Of these cases, 1 168 are reported as confirmed cases of microcephaly with 192 having laboratory confirmation of Zika virus infection. Of the remaining cases, 2 241 were investigated and discarded as they did not fit the case definition, while 3 741 cases are still under investigation.

Among the 7 150 suspected cases of microcephaly, 240 intrauterine or neonatal deaths were reported. Of these, 51 cases were investigated and confirmed (microcephaly and/or central nervous system malformations).

**Colombia**

Since the beginning of 2016, 33 microcephaly cases have been detected in Colombia, which is not unexpected. Of these, 30 are under investigation for Zika virus and three have been discarded. Since December 2015 and as of epidemiological week 13 2016, 416 cases of neurological syndromes including GBS have been associated with Zika virus infection.

**Congenital zika syndrome and GBS**

As of 20 April 2016, microcephaly and other foetal malformations potentially associated with Zika virus infection or suggestive of
congenital infection have been reported in seven countries (Brazil, Cape Verde, Colombia, French Polynesia, Martinique, Marshall Islands and Panama). Two additional cases, each linked to a stay in Brazil, were detected in Slovenia and the United States of America. One more case was reported in a returning traveller from the affected countries in the United States of America. In the context of Zika virus circulation, 13 countries and territories worldwide have reported an increased incidence of Guillain-Barré syndrome (GBS) and/or laboratory confirmation of a Zika virus infection among GBS cases.

**Imported cases to Europe**

As of 21 April 2016, ECDC has recorded 414 imported cases in 17 EU/EEA countries. Twenty-four of the imported cases are pregnant women. In addition, one confirmed case was published following the diagnosis in a Slovenian hospital. The number of imported cases reported is not based on a systematic reporting surveillance systems hence cannot be considered exhaustive. As of 21 April 2016, fourteen cases of non-vector-borne transmission of Zika virus, probably through sexual transmission have been reported by seven countries: Argentina (1), Chile (1), France (1), Italy (1), New Zealand (1), Portugal (in the Autonomous Region of Madeira) (1), Peru (1) and the United States of America (7).

**EU’s Outermost Regions and Territories**

There has been no new update since 14 April 2016.


**ECDC assessment**

Based on a growing body of research, there is scientific consensus that Zika virus is a cause of microcephaly and GBS. Several studies have documented steps in the chain of an intrauterine infection; from symptomatic Zika-like infection in a pregnant mother residing in a Zika-affected area, to detection of microcephaly with brain calcifications in the foetus, and detection of Zika virus either in the amniotic fluid, in the cerebrospinal fluid of the newborn, or in the central nervous system of an aborted foetus or a dead newborn.

The magnitude of the risk that Zika virus infection during pregnancy will result in malformations in the foetus is under investigation, but remains unknown at present.

Considering the growing body of evidence of adverse pregnancy outcomes associated with Zika virus infection, ECDC recommends that pregnant women postpone non-essential travel to Zika-affected areas. In addition, in order to protect pregnant women, male travellers returning from affected areas should consider using a condom with a pregnant partner until the end of pregnancy, or for six months with partners at risk of getting pregnant. This precautionary advice is based on limited evidence and will be revised as more information becomes available.

The spread of the Zika virus epidemic in the Americas is likely to continue as the vectors (*Aedes aegypti* and *Aedes albopictus*) mosquitoes are widely distributed there.

With the spread of the Zika virus, the likelihood of travel-related cases in the EU is increasing. As neither treatment nor vaccines are available, prevention is based on personal protection measures similar to those that are applied against dengue and chikungunya infections.

**Actions**

ECDC publishes an [epidemiological update](https://www.ecdc.europa.eu/en/publications-data/ebola-epidemiological-update) every Friday and [maps](https://www.ecdc.europa.eu/en/publications-data/malaria-maps) with information on countries or territories which have reported confirmed autochthonous cases of Zika virus infection.

Countries or territories with reported confirmed autochthonous cases of Zika virus infection in the past two months, as of 22 April 2016
Countries and territories with reported confirmed autochthonous cases of Zika virus infection in the past nine months, as of 22 April 2016

Outbreak of yellow fever - Africa - 2016
Opening date: 17 March 2016
Latest update: 8 April 2016

Epidemiological summary

Since the initial cases were detected in Luanda province, Angola, there has been a rapid increase in the number of suspected cases recorded since mid-January 2016. Local transmission is no longer restricted to Luanda province. Close to 6 million people in Luanda have benefited from a large-scale vaccination campaign since the beginning of February using vaccines made available from the yellow fever vaccine emergency stockpile made available through the International Coordinating Group (ICG) for Vaccine Provision, with support from Gavi, the UN Central Emergency Response Fund (CERF) and a vaccine donation from Brazil. Approximately 10 million doses of the vaccine are now available. An outbreak of yellow fever has also been reported in Masaka district in Uganda with ten fatalities and seven confirmed yellow fever cases. At present, there are no indications that this outbreak is linked to the outbreak in Angola.

Web sources: ECDC factsheet / WHO yellow fever page | MoH | WHO AFRO
ECDC assessment

WHO estimates that 508 million people are living in 31 African countries at risk for transmission of yellow fever. Therefore, the large outbreak of yellow fever in Angola is of concern with regards to the risk of introduction of the virus through viraemic travellers to countries at risk of transmission, especially in neighbouring countries. Yellow fever in an urban setting is considered as a public health emergency that may result in a large number of cases. Vaccination is the single most important measure for preventing yellow fever. The outbreak in Angola is not yet controlled and is currently expanding to additional provinces challenging the ongoing mass vaccination campaign. The control of the outbreak in Angola is needed in order to prevent further spread in the region and beyond. Concerns exist that if yellow fever should spread to other countries in Africa and Asia there would be a need to further prioritise vaccine supplies, which would interrupt routine immunisation programmes in some countries.

Proof of vaccination is required for all travellers aged 1 year and above entering Angola. WHO recommends vaccination for all travellers older than 9 months of age in areas where there is evidence of persistent or periodic yellow fever virus transmission. European citizens travelling to or residing in Angola should be vaccinated against yellow fever as per their national health authorities’ recommendations. Vaccine should be administered at least 10 days before travelling.

The competent vector for yellow fever, the Aedes aegypti mosquito, is not present in continental EU but is present in the island of Madeira, an autonomous region of Portugal where the weather conditions are not currently suitable for mosquito activity.

Actions

ECDC published a rapid risk assessment on 25 March 2016 and and an epidemiological update on 1 April.

Ebola Virus Disease Epidemic - West Africa - 2014 - 2016

Epidemiological summary

Since the end of February 2016 and as of 10 April, there have been seven confirmed and three probable cases of EVD in N’Zerekore, Guinea. Of these cases, eight have died. Initial tests suggest that the recently reported cases in Guinea are part of a known transmission chain and not a new introduction from the animal population. On 1 April, WHO confirmed a new case of EVD in Liberia that was linked to the Guinean cluster. Since then, WHO reported two additional confirmed cases in Liberia, both children of the initial above mentioned case in Liberia.

Official WHO figures as of 17 April 2016:

- **Liberia**: 10 666 cases, including 4 806 deaths. Liberia was declared EVD-free on 3 September 2015. However, since the end of March and as of 10 April 2016, three confirmed cases have been reported by WHO.
  - **Sierra Leone**: 14 122 cases, including 3 955 deaths. The country was declared EVD-free on 7 November 2015. However, two epidemiologically linked sporadic cases were reported on 14 and 20 January 2016.
  - **Guinea**: 3 804 cases including 2 536 deaths. The country was declared EVD-free on 29 December 2015. However, since the end of February and as of 10 April 2016, seven confirmed and three probable sporadic cases have been reported by WHO.

Guinea

In total, 1 033 contacts linked to the cluster have been identified so far, 171 of whom are considered to be high risk. All but 10 contacts have been traced. Additional cases are likely because of the large number of contacts. Vaccination teams began vaccination of contacts and contacts of contacts on 22 March.

Liberia

On 1 April, WHO confirmed a new case of EVD in Liberia in a 30-year-old woman who died on 31 March while being transferred to a hospital in the capital Monrovia. Investigation showed that this case was coming from Guinea where her husband died recently. According to WHO, her 5-year-old child was confirmed positive for EVD on 5 April. Media reported that another son, a 2-year-old, was confirmed for EVD on 7 April. WHO reports that more than 100 contacts of the confirmed cases have been identified in Liberia and placed under voluntary medical observation. According to media, by 16 April, 12 contacts completed the 21 days monitoring.
Seven countries have reported an initial case or localised transmission: Nigeria, Senegal, the USA, Spain, Mali, the UK and Italy.


ECDC assessment

The detection of new sporadic cases and small clusters of cases in Guinea and Liberia is not unexpected and highlights the importance of maintaining heightened surveillance and early detection of cases during the coming months as the risk of additional small outbreaks remains. Sporadic cases have been identified previously and are likely to be the result of the virus persisting in survivors even after recovery.

In Guinea, following the recent cases, the vaccination of contacts has started while the preparation of the vaccination campaign in Liberia is on-going.

Actions

An epi-update was published on 23 March 2016.

On 16 October 2015, ECDC published the latest (13th) update of the rapid risk assessment.

On 16 October 2015, ECDC published Recent development on sexual transmission of Ebola virus.

On 31 July 2015, ECDC published Positive preliminary results of an Ebola vaccine efficacy trial in Guinea.


On 4 December 2014, EFSA and ECDC published a Scientific report assessing risk related to household pets in contact with Ebola cases in humans.

On 29 October 2014, ECDC published a training tool on the safe use of PPE and options for preparing for gatherings in the EU.

On 23 October 2014, ECDC published Public health management of persons having had contact with Ebola virus disease cases in the EU.

On 22 October 2014, ECDC published Assessing and planning medical evacuation flights to Europe for patients with Ebola virus disease and people exposed to Ebola virus.


On 6 October 2014, ECDC published risk of transmission of Ebola virus via donated blood and other substances of human origin in the EU.

On 22 September 2014, ECDC published assessment and planning for medical evacuation by air to the EU of patients with Ebola virus disease and people exposed to Ebola virus.

On 10 September 2014, ECDC published an EU case definition.

Poliomyelitis - Multistate (world) - Monitoring global outbreaks

Opening date: 8 September 2005 Latest update: 8 April 2016

Epidemiological summary

In 2016, eleven cases of wild poliovirus type 1 (WPV1) have been reported, compared with 22 cases for the same period in 2015. The cases were detected in Pakistan (eight cases) and in Afghanistan (three cases).
As of 20 April 2016, three cases of circulating vaccine-derived poliovirus (cVDPV) have been reported to WHO in 2016, all from Laos. There was one cVDPV case during the same period in 2015.

**Web sources:** Polio Eradication: weekly update | MedISys Poliomyelitis | ECDC Poliomyelitis factsheet | Temporary Recommendations to Reduce International Spread of Poliovirus | WHO Statement on the Seventh Meeting of the International Health Regulations Emergency Committee on Polio

**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.

**References:** ECDC latest RRA | Rapid Risk Assessment on suspected polio cases in Syria and the risk to the EU/EEA | Wild-type poliovirus 1 transmission in Israel - what is the risk to the EU/EEA? | RRA Outbreak of circulating vaccine-derived poliovirus type 1 (cVDPV1) in Ukraine

**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 re-introduced 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.

Following the detection of the cases of circulating vaccine-derived poliovirus type 1 in Ukraine, ECDC published a rapid risk assessment on its website.
The Communicable Disease Threat Report may include unconfirmed information which may later prove to be unsubstantiated.