

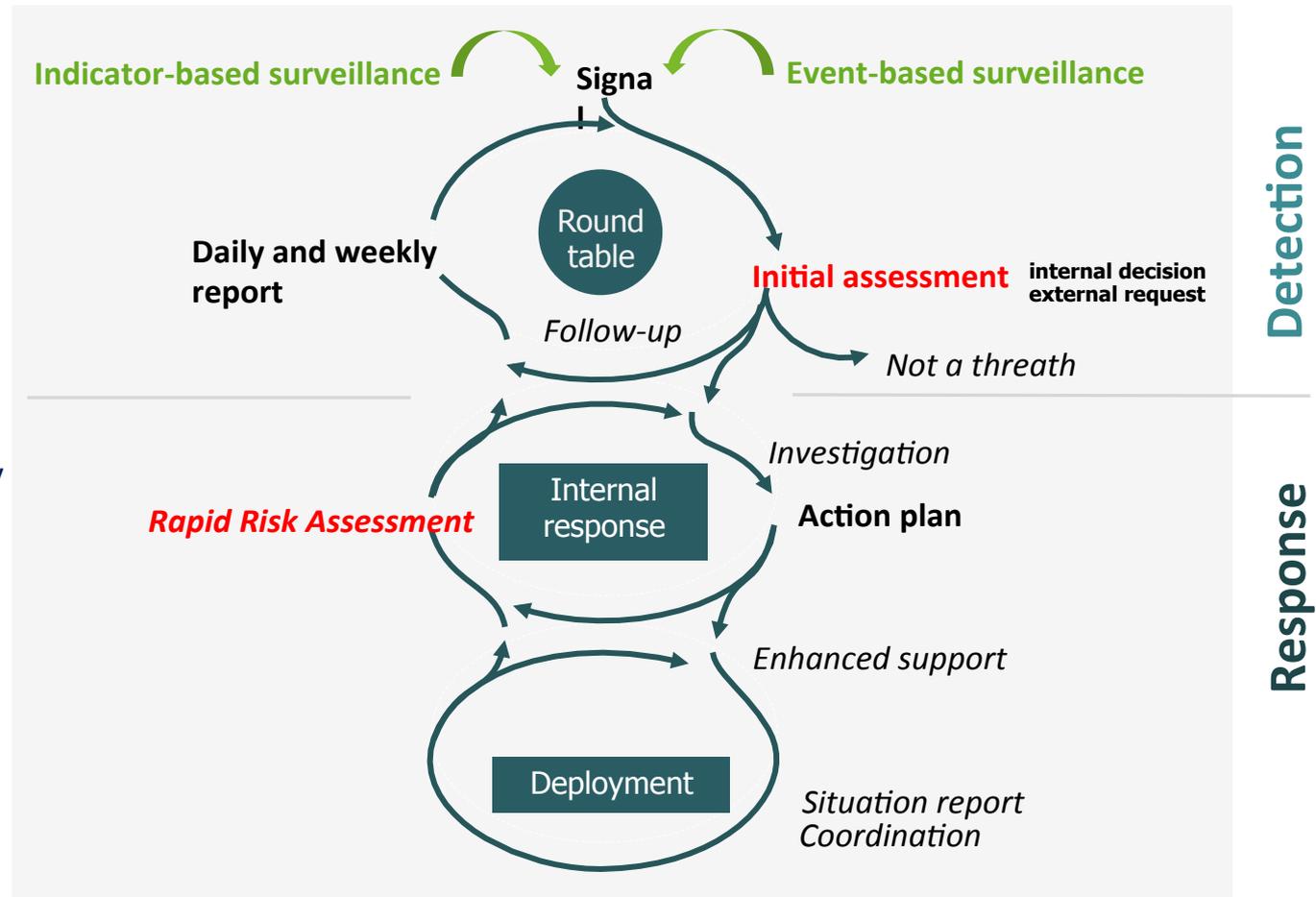


Current cross-border health threats and ECDC role

Massimo Ciotti

Core functions of ECDC

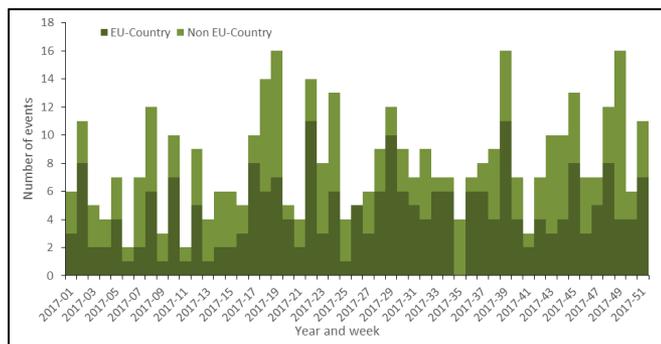
- Disease surveillance
- **Epidemic intelligence**
- **Risk assessment**
- Scientific advice and guidance
- **Response support**
- Preparedness and capacity strengthening
- Training
- Communication



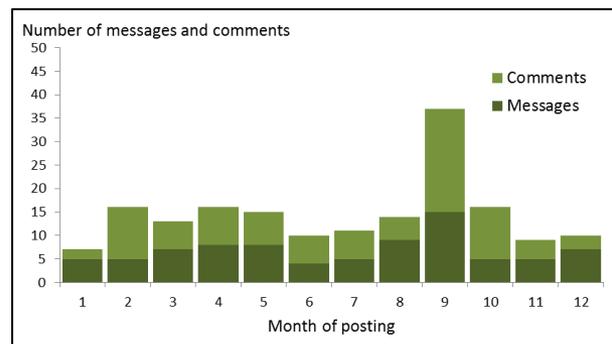
Epidemic Intelligence activities at ECDC

- Number of emails/day (Active & Passive mailbox): ~ 100
- Number of webpages opened/day: ~ 1 000
- Number of articles screened/day: ~ 3 000
- Requests or comments from MS/day: 1-2

Number of events detected meeting early warning and response criteria in 2017



In 2017, ECDC opened and monitored 69 new threats, in addition to the 18 threats that were carried over from previous years



Epidemic Intelligence daily and weekly outputs

Round Table Report



Round Table Report
18 April 2018

For ECDC and European Commission only

This report summarises the ECDC daily roundtable discussion and provides updates on threats detected and monitored by Epidemic Intelligence.

Active threats
Disease of unknown origin – Oman – 2018 **CONFIDENTIAL**

Source: EWRS
Update: The UK, through selective EWRS exchange, informed ECDC that the deceased case tested negative, at the post mortem, for MERS-CoV and that investigations of the event from public health authorities are complete.
Summary: WHO and the PHE are investigating a cluster of a unknown disease. The cluster consists of an expatriate family who have been living in Muscat, Oman and fell ill during travel in to Sikkim, India. All family members, the father, the mother and the three sons got sick with an acute influenza-like-illness. The main symptoms were a combination of neurological and respiratory symptoms. Two cases reported leg pain and two epistaxis. Epidemiological and laboratory investigations are now concluded.
One of the sons died following a very rapidly progressing illness with respiratory and meningo-encephalitic symptoms. Several contacts of the family in Oman have been ill with influenza-like-illness. Some influenza circulation is still being reported by authorities in Oman. After being discharged from medical facilities, the family travelled from Easter India to UK and back to Oman.
Assessment: The case tested negative for MERS-CoV. The investigations are now complete from the UK public health authorities.
Action: ECDC is in contact with WHO and UK for further details.

Threats under weekly review
Dengue – France, Réunion – 2018
Source: ADS
Update: Between 9 and 15 April 2018, Réunion has reported 396 dengue cases.
Summary: Since the beginning of 2018 and as of 15 April, there have been 1 388 autochthonous cases of dengue in Réunion. The main affected areas are on the western part of the island. The most prevalent serotype is DENV-2.
The main vector of infection implicated in the outbreak is *Aedes albopictus*.

1/3

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Communicable Disease Threat



COMMUNICABLE DISEASE THREATS REPORT

CDTR
Week 15, 8-14 April 2018

All users

This weekly bulletin provides updates on threats monitored by ECDC.

NEWS
ESCAIDE 2018 - call for abstracts
ESCAIDE 2018 will be held at the Milla-Hatta Hotel in St. Julian's, Malta, 21-23 November 2018. The call for abstracts will close on 7 May 2018.

Ramadan 2018 and Umrah in Mecca, Saudi Arabia
This year, the Ramadan is estimated to take place from 16 May to 14 June. Ramadan is the holy month when Muslims around the world are fasting from dawn to sunset, except for pregnant women, children and sick people.
During this time, many Muslims choose to perform Umrah - a pilgrimage to Mecca. The Ministry of Health of Saudi Arabia does not recommend the pilgrimage to people over the age of 65-years, children, pregnant women, or people with chronic diseases or cancer. Due to the ongoing outbreak of the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), pilgrims should avoid close contact with animals, particularly camels, when visiting farms, markets, or barn areas. Most commonly, coronaviruses are transmitted by respiratory droplets when an infected person coughs or sneezes. The disease is often mild (taking the form of a cold), but can occasionally lead to severe, life-threatening respiratory disease, especially in people with chronic conditions. Pilgrims may be at increased risk of infection in crowded baths, packed transportation and confined accommodation.
According to the Ministry of Health of Saudi Arabia, since 2012 and as of 9 April 2018, there have been 1 092 cases and 739 deaths due to MERS-CoV detected in the country: <https://www.moh.gov.sa/en/CCC/PressReleases/Pages/statistics-2018-04-09-001.aspx>
As recently as March 2018, 15 cases were detected from Riyadh (5), Jeddah (4), Hufuf (2), Najran (2), Hail (1) and Medinah (1). Almost half of these cases reported contact with camels, three were due to nosocomial transmission, three were household contacts and for two the route of transmission was not specified. Further information is available in the factsheets on MERS-CoV from WHO and ECDC.
Pilgrims visiting Mecca should check prior to departure whether they have the obligatory vaccinations against meningitis and yellow fever if coming from endemic country. It is recommended that they should be immunised against polio, influenza, hepatitis A and B, measles, diphtheria and tetanus. According to WHO, an increase in measles cases has been reported in Saudi Arabia in 2017, with 402 confirmed cases reported compared to 112 cases reported in 2016.
Pilgrims should follow advice on personal hygiene and measures to prevent food- and waterborne diseases in order to decrease the risk of gastrointestinal illness. They should practice good hand and personal hygiene to reduce the risk of respiratory infections.
After returning from Umrah, if symptoms suggestive of gastrointestinal, respiratory or any other type of infection occur, pilgrims should mention their travel history to their healthcare provider.
ECDC published a rapid risk assessment 'Public health risks related to communicable diseases during the Hajj 2017' on 10 August 2017 and the main conclusions remain valid for the Umrah 2018.

Support to stakeholders

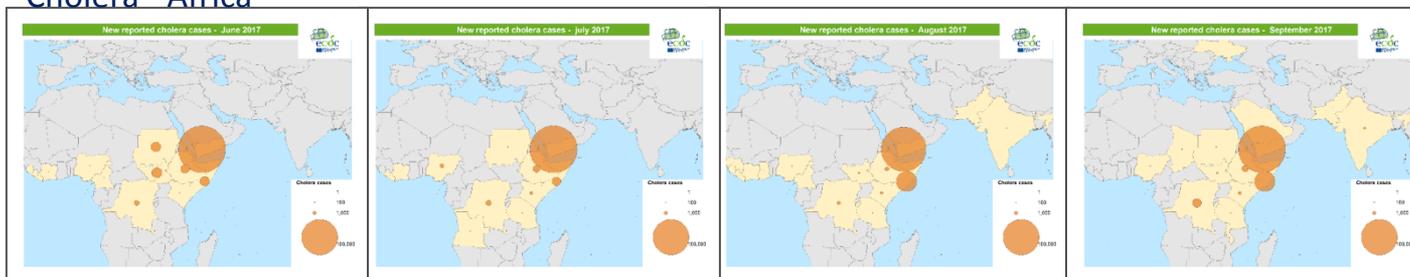
Examples of requests in December 2017

- Dengue in Egypt (Member State)
- Malaria in Tripoli, Libya (European Commission)
- Cholera (ECHO)
- Plague in Madagascar (ECHO)
- Viral haemorrhagic fever in Africa (ECHO)
- Zika (Member State)

Plague - Madagascar

Value	17-Oct-17	20-Oct-17	24-Oct-17	27-Oct-17	30-Oct-17	03-Nov-17	06-Nov-17	13-Nov-17	24-Nov-17	Difference 17 to 24 Nov 2017
Number of cases	849	1305	1309	1554	1801	1947	2034	2267	2384	+117
Deaths	47	106	93	113	127	148	165	195	207	+12
Pneumonic plague cases	568	915	882	985	1111	1437	1565	1732	1828	+96
Bubonic plague cases	155	275	221	230	261	295	297	327	347	+20
Septicaemic plague cases	1	1	1	1	1	1	1	1	1	0
Unspecified plague cases	125	174	186	338	428	211	171	207	208	+1
Health Care Workers affected	39	54	71	71	71	71	82	81	81	0
Districts affected (pneu conf-prob)	unk	33	29	28	unk	51	unk	55	57	+2
Pneumonic cases confirmed	unk	160	235	245	257	364	371	389	347	-42
Pneumonic cases probable	unk	375	300	336	374	555	581	612	634	+2
Pneumonic cases suspected	unk	380	347	404	480	518	613	711	824	+93

Cholera - Africa



EOC Response activities

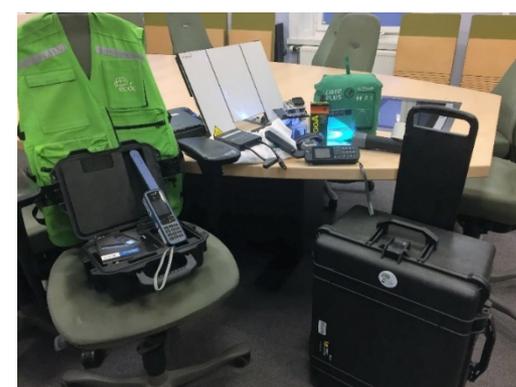
- Provide technical and logistics support to PHE teams and PHE activities as well as to ECDC teams deployed in the field

PHE

- 2017, Plague – Madagascar
- 2016, Zika – PHE level 1
- 2014, Ebola – PHE level 1&2
- 2013, H7N9 Flu – PHE level 1
- 2011, E-coli – PHE level 1
- 2009, H1N1 Flu – PHE level 1&2
- 2007, Tuberculosis – PHE level 1

Missions

- 2017, Plague – Madagascar
- 2016, Angola – Yellow fever
- 2015, Guinea – Ebola
- 2013, Madera – Dengue
- 2010, Haiti – Cholera
- ...





European Centre for Disease Prevention and Control

Current threats





RAPID RISK ASSESSMENT

- **Multi-country outbreak of hepatitis A virus genotype IA infections, EU, 2018.** 15 May 2018
- **Extensively drug-resistant (XDR) *Neisseria gonorrhoeae* in the United Kingdom and Australia.** 04 May 2018
- **Hospital-acquired malaria infections in the European Union.** 30 Apr 2018
- ***Candida auris* in healthcare settings – Europe.** 23 Apr 2018
- **Dengue outbreak in Réunion, France.** 16 Apr 2018
- **Acute encephalitis associated with infection with Borna disease virus 1, Germany.** 26 Mar 2018
- **Multi-country outbreak of *Listeria monocytogenes* serogroup IVb, multi-locus sequence type 6, infections probably linked to frozen corn.** 22 Mar 2018
- **Risk of measles transmission in the EU/EEA.** 21 Mar 2018
- **Outbreak of yellow fever in Brazil, Third update.** 16 Mar 2018

Ebola virus disease - Democratic Republic of the Congo – ECDC RRA 25 May 2018

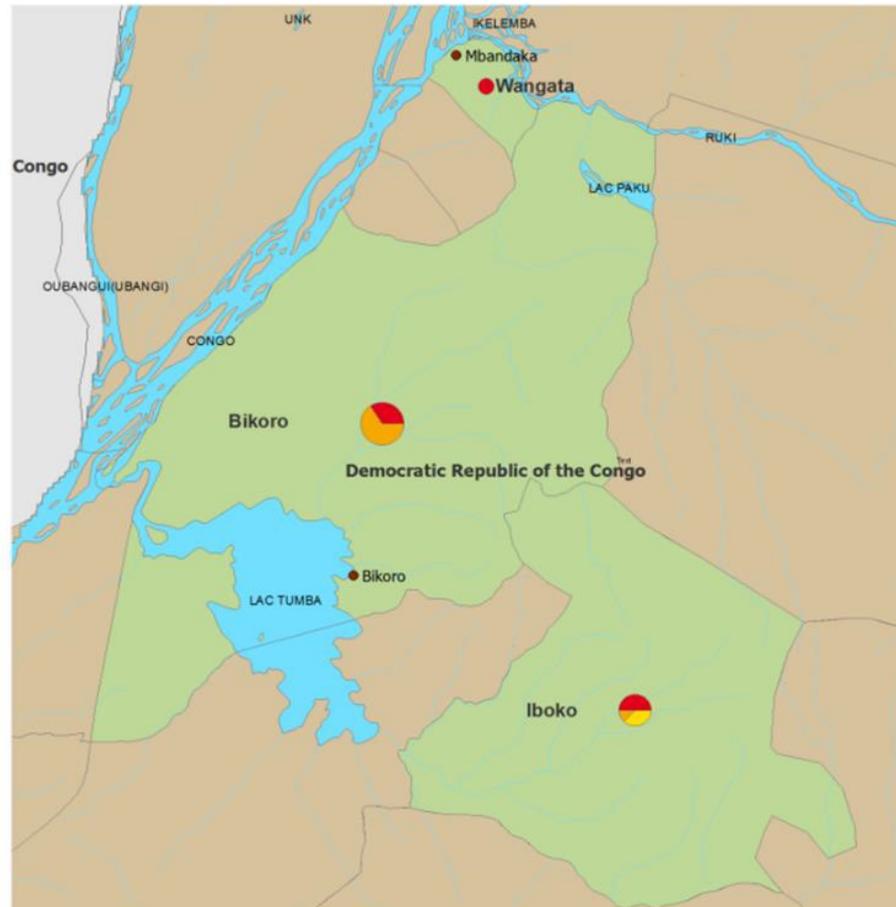
As of 4 June 2018, MoH DRC has reported 56 cases, including 25 deaths. 37 confirmed, 13 probable and 6 suspected.

Bikoro (26), Iboko (25) and Wangata (5) in Equateur Province.

The identification of EVD cases in the urban area of Mbandaka city and around Tumba Lake (both areas are connected to the Congo River) increases the risk of regional spread to other provinces of DRC and neighbouring countries (namely the Republic of the Congo and the Central African Republic).
the public health risk associated with this event is estimated to be very high at the national level, high at regional level, and low at the international level.

The IHR Emergency Committee on 18 May 2018 concluded that the conditions for a PHEIC had not been met.

Geographical distribution of confirmed, probable and suspected cases of Ebola virus disease, Equateur Province, Democratic Republic of Congo, as of 20 May 2018



Data as of 20/05/2018

Affected health zones

Number of cases



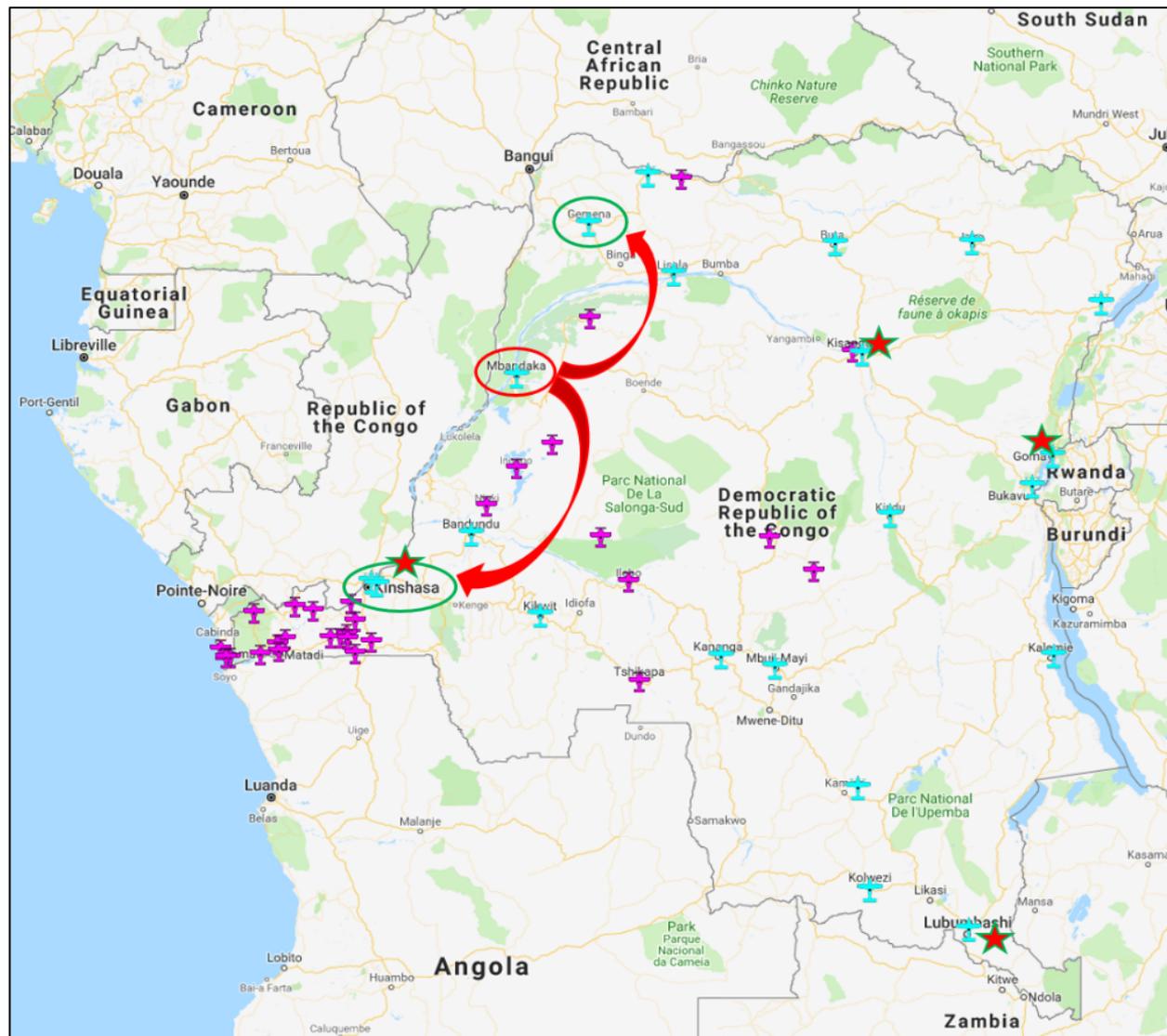
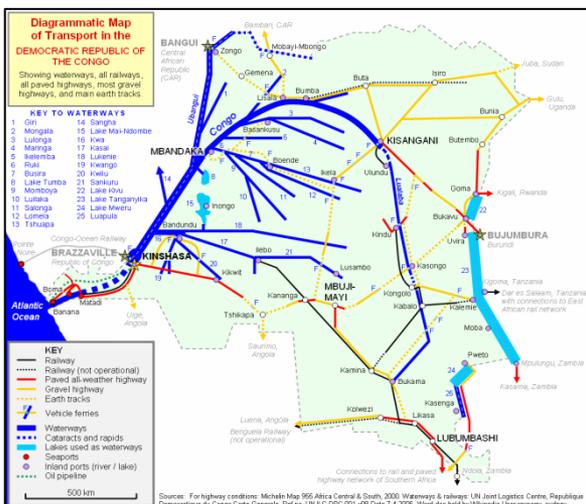
ECDC. map produced on 21 May 2018

Cities in DRC (green circles) directly connected by the Mbandaka airport (red circle). Red stars: DRC international airports

Road access in the affected area



Diagrammatic map of the transports in the Democratic Republic of the Congo





Map data ©2018 Google

Dengue in Réunion



RAPID RISK ASSESSMENT

Dengue outbreak in Réunion, France

16 April 2018

Main conclusions and options for response

A dengue outbreak of unusual magnitude is currently taking place in the French Outermost Region of Réunion. *Aedes albopictus* mosquitoes are considered to be the principal vector of dengue virus in Réunion. Dengue virus (DENV) transmission in Réunion is not unexpected: over the last ten years a number of limited dengue outbreaks have been reported on the island.

The current epidemic could continue and intensify in the coming weeks. Based on previous *Aedes* mosquito-borne outbreaks on the island, further transmission is expected up to the beginning of the southern-hemisphere winter (which lasts from July to September).

The risk of onward transmission of dengue fever in Europe is linked to the importation of virus by viraemic travellers into receptive areas with established and active competent vectors, i.e. *Aedes albopictus* in mainland Europe, primarily around the Mediterranean, and *Aedes aegypti* on Madeira. Environmental conditions in Europe are expected to become more favourable to the growth of mosquito populations in the coming weeks, reaching a high vector abundance in summer and early autumn. Prior to this high-activity season, there is a low likelihood of sustained autochthonous transmission of dengue virus in continental Europe associated with introduction by returning travellers from Réunion or other areas with active DENV transmission.

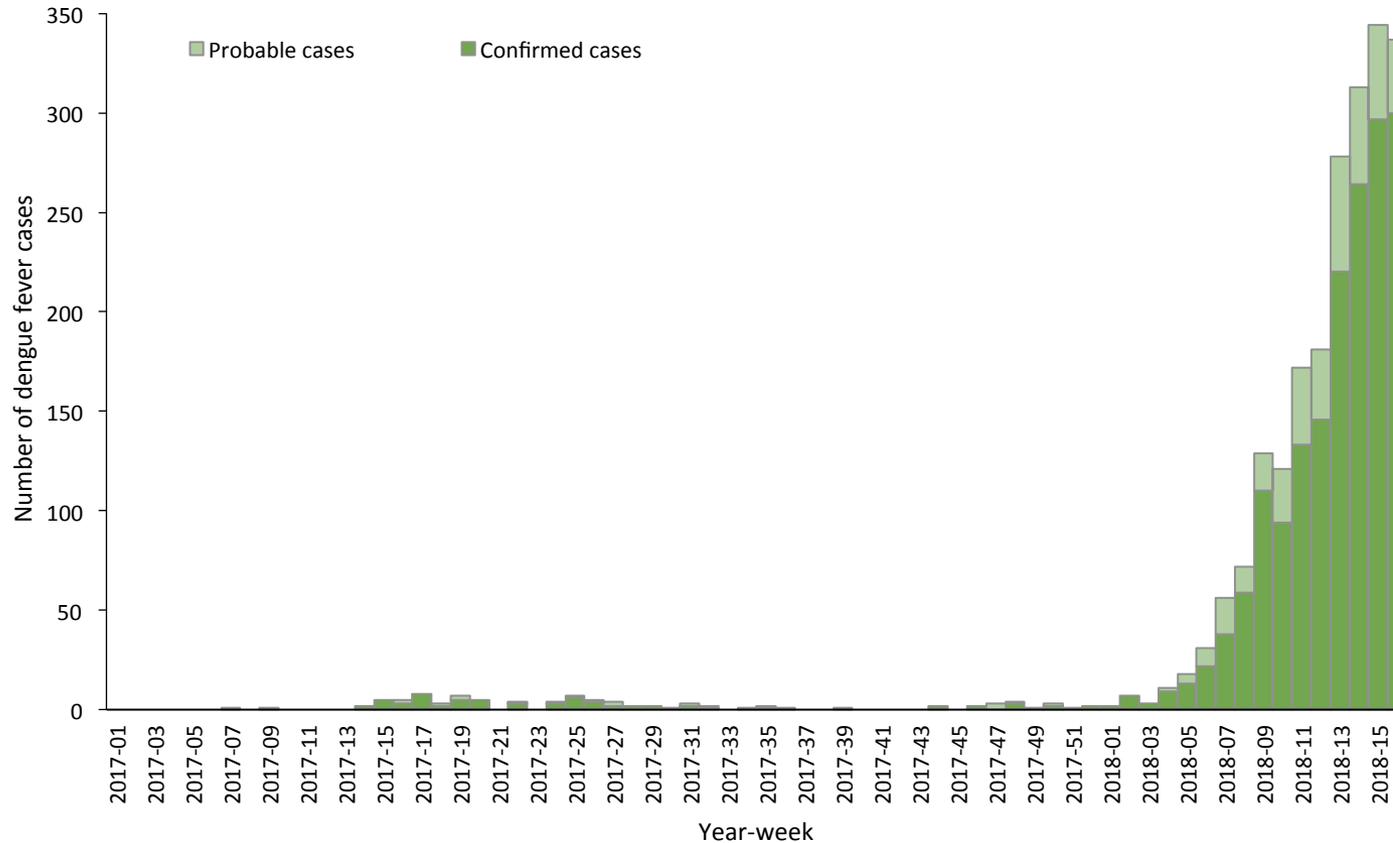
During the high vector activity season in southern Europe, early detection of imported cases is essential to prevent the establishment of local transmission. The detection of an autochthonous case in Europe in receptive areas should trigger epidemiological and entomological investigations to assess the potential for onward transmission and guide vector control measures aimed at lowering mosquito population density in order to reduce the probability of further spread. Increased awareness among clinicians and travellers returning from areas with active dengue virus transmission, combined with adequate laboratory diagnostic capability, are instrumental for the early detection of travel-associated cases.

Travellers returning from areas where dengue virus transmission occurs should be advised to seek medical attention if presenting with symptoms compatible with dengue fever in the first two weeks after return, particularly if returning to areas where competent vectors are established, especially during the high vector activity season. This will help reduce the risk of further local transmission by ensuring timely detection of cases. Symptomatic patients should be advised on how to apply personal protective measures against mosquito bites in order to prevent further transmission.

Erratum, 18 April 2017: The date of an earlier dengue outbreak in Réunion (p. 5) was corrected to 1977–78.

Suggested citation: European Centre for Disease Prevention and Control. Dengue outbreak in Réunion, France – 16 April 2018. Stockholm: ECDC; 2018.

Distribution of autochthonous cases of Dengue by week of onset, weeks 1-2017 to 16-2018, Réunion



Main conclusions

- The risk of onward transmission of dengue fever in Europe is linked to the importation of virus by **viraemic travellers** into receptive areas with established and active competent vectors, i.e. *Aedes albopictus* in mainland Europe, primarily around the Mediterranean, and *Aedes aegypti* in Madeira.
- Environmental conditions in southern Europe are now favourable to the growth of mosquito populations. The vector abundance will be reaching **its high level in summer and early autumn.**
- Prior to this high-activity season, there is a **low likelihood of sustained autochthonous transmission** of dengue virus in continental Europe associated with introduction by returning travellers from Réunion or other areas with active DENV transmission.

Options for response

- Travellers returning from areas where dengue virus transmission occurs should be advised to seek medical attention if presenting with symptoms compatible with dengue fever in the first two weeks after return, particularly if returning to areas where competent vectors are established, especially during the high vector activity season. This will help reduce the risk of further local transmission by ensuring timely detection of cases.
- Symptomatic patients should be advised on how to apply personal protective measures against mosquito bites in order to prevent further transmission.

Nipah Virus Disease India 2018



Data as of 31 May 2018



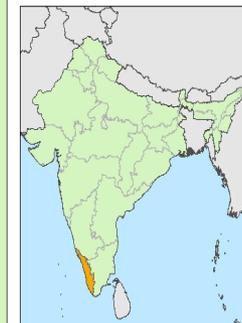
Major cities

Number of Nipah cases

5 cases

Confirmed Cases

Suspected cases



Map produced on 31 May 2018

Acute encephalitis Associated with infection Borna disease Virus 1, Germany



- Borna disease virus 1 (BoDV-1) has been associated with human disease in four cases in Germany resulting in the death of three people.
- As three of the cases belong to a cluster of solid organ recipients from a single donor, **donor-derived BoDV-1 transmission is possible**. The fact that the virus could be transmitted through solid organ transplantation raises concerns about the possibility of transmission through other types of substances of human origin (SoHO).
- The bicoloured white-toothed shrew (*Crocidura leucodon*) has been proposed as the animal reservoir of BoDV-1. The routes of transmission of BoDV-1 to humans from the animal reservoir remain unknown and the zoonotic transmission pathways should be further investigated.



RAPID RISK ASSESSMENT

Acute encephalitis associated with infection with Borna disease virus 1, Germany

26 March 2018

Main conclusions and options for response

Borna disease virus 1 (BoDV-1) has been associated with human disease in four cases in Germany resulting in the death of three people. As three of the cases belong to a cluster of solid organ recipients from a single donor, donor-derived BoDV-1 transmission is possible. There is no evidence that the donor had any clinical manifestation of the disease.

BoDV-1 in humans occurs rarely; however considering the severity of this disease, Member States may consider adding BoDV-1 to the list of pathogens included in the differential diagnosis of causes of human encephalitis. The fact that the virus could be transmitted through solid organ transplantation raises concerns about the possibility of transmission through other types of substances of human origin (SoHO). This should be further investigated.

Clinicians and transplantation professionals should be aware of possible BoDV-1 related encephalitis and the possibility of transmission through donated organs, especially in areas where Borna disease is endemic. Endemic areas so far have been identified in central Europe including eastern and southern Germany, the eastern part of Switzerland, Liechtenstein, the most western federal state of Austria and more recently in Upper Austria [1,2].

The bicoloured white-toothed shrew (*Crocidura leucodon*) has been proposed as the animal reservoir of BoDV-1. The routes of transmission of BoDV-1 to humans from the animal reservoir remain unknown and the zoonotic transmission pathways should be further investigated.

Source and date of request

ECDC Internal Decision, 09 March 2018.

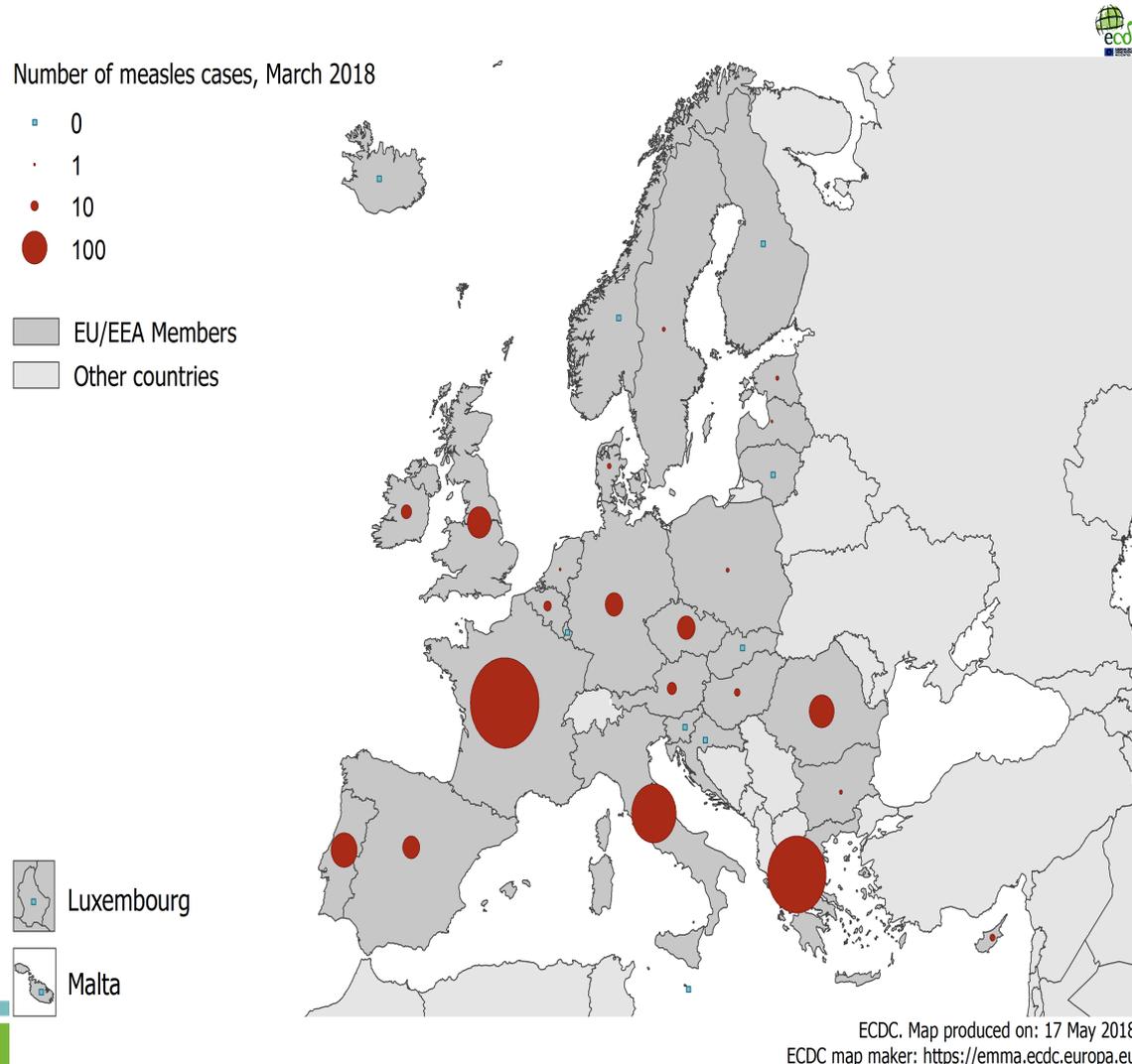
Public health issue

The investigation of four human cases of acute encephalitis associated with Borna disease virus 1 infection (BoDV-1, species *Mammalian 1 bornavirus*) in Germany, raises questions about the zoonotic spread of infection in the country and potential human-to-human transmission through organ transplantation.

Suggested citation: European Centre for Disease Prevention and Control. Acute encephalitis associated with infection with Borna disease virus 1 – Germany, 2018. 26 March 2018. Stockholm: ECDC; 2018.

© European Centre for Disease Prevention and Control, Stockholm, 2018

Distribution of measles cases by country (n=2143), March 2018 in EU/EEA countries

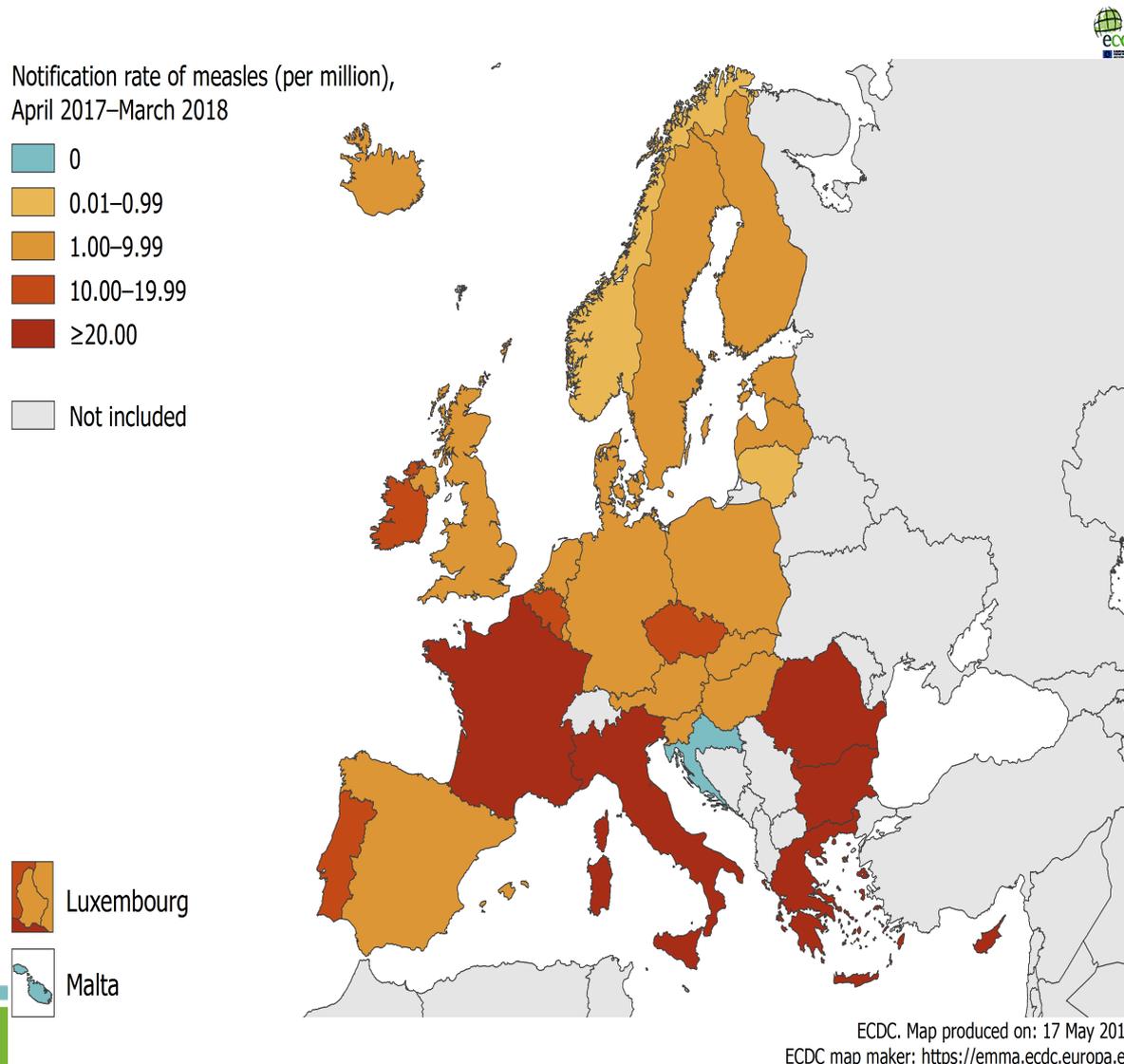


Number of measles cases by month and notification rate per million population by country, 1 April 2017-31

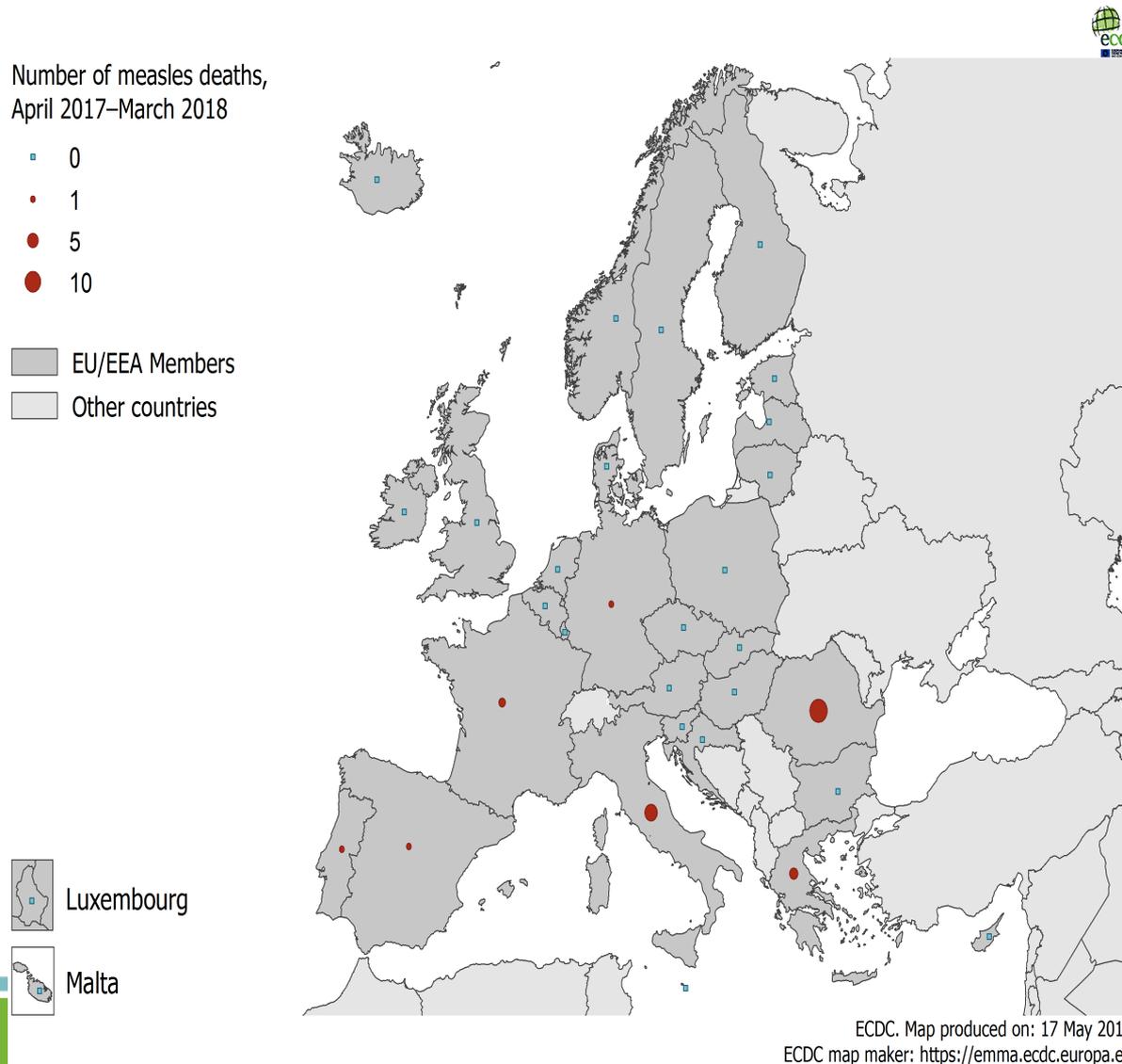
Country	2017	2017	2017	2017	2017	2017	2017	2017	2017	2018	2018	2018	Total cases	Cases per million	Total lab-positive cases
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar			
Austria	2	6	1	2	2	1	2	8	1	7	5	15	52	5.9	45
Belgium	35	21	34	16	0	2	0	3	1	1	6	10	129	11.4	101
Bulgaria	42	55	44	5	0	0	0	0	0	0	1	2	149	21.0	107
Croatia	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Cyprus	0	1	2	0	0	0	0	0	0	5	6	4	18	21.1	18
Czech Republic	64	43	7	1	0	0	0	6	4	0	0	50	175	16.5	170
Denmark	0	0	0	0	3	0	0	0	0	0	0	3	6	1.0	6
Estonia	0	1	0	0	0	0	0	0	0	0	0	2	3	2.3	3
Finland	0	0	1	4	5	0	0	0	0	0	0	0	10	1.8	10
France	62	114	43	39	15	19	13	11	65	237	523	753	1894	28.3	861
Germany	178	137	77	23	51	16	9	9	14	26	30	51	621	7.5	458
Greece	0	3	1	7	71	126	167	250	342	431	453	549	2400	222.9	1422
Hungary	0	0	0	9	10	1	1	0	0	2	5	6	34	3.5	34
Iceland	0	0	0	0	0	0	0	1	0	0	0	0	1	3.0	1
Ireland	0	0	0	0	0	0	10	9	5	11	17	19	71	14.8	61
Italy	863	804	661	600	251	166	126	66	114	199	272	326	4448	73.4	3572
Latvia	0	0	0	0	0	0	0	0	0	7	7	1	15	7.7	15
Lithuania	1	0	0	1	0	0	0	0	0	0	0	0	2	0.7	2
Luxembourg	0	0	0	0	0	0	0	1	0	0	0	0	1	1.7	1
Malta	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0
Netherlands	2	6	2	1	1	1	3	0	0	0	2	1	19	1.1	17
Norway	0	0	0	1	0	0	0	0	0	0	4	0	5	1.0	5
Poland	4	2	4	6	1	12	13	3	1	17	10	2	75	2.0	49
Portugal	18	4	0	0	0	0	0	0	0	0	4	109	135	13.1	118
Romania	1220	1029	100	100	100	91	101	102	100	100	100	100	3243	165.1	1464
Slovakia	1	0	0	0	0	0	0	0	5	1	0	0	7	1.3	7
Slovenia	0	0	0	0	0	0	0	0	1	2	0	0	3	1.5	3
Spain	10	38	19	9	10	2	0	1	11	6	14	49	169	3.6	157
Sweden	3	4	0	0	2	2	2	0	11	17	2	2	45	4.5	45
United Kingdom	17	34	25	22	12	18	22	65	46	57	79	89	486	7.4	486
EU/EEA	2522	2302	1021	846	534	457	469	535	721	1126	1540	2143	14216	27.5	9238



Measles notification rate per million population by country, 1 April 2017 - 31 March 2018, EU/EEA countries

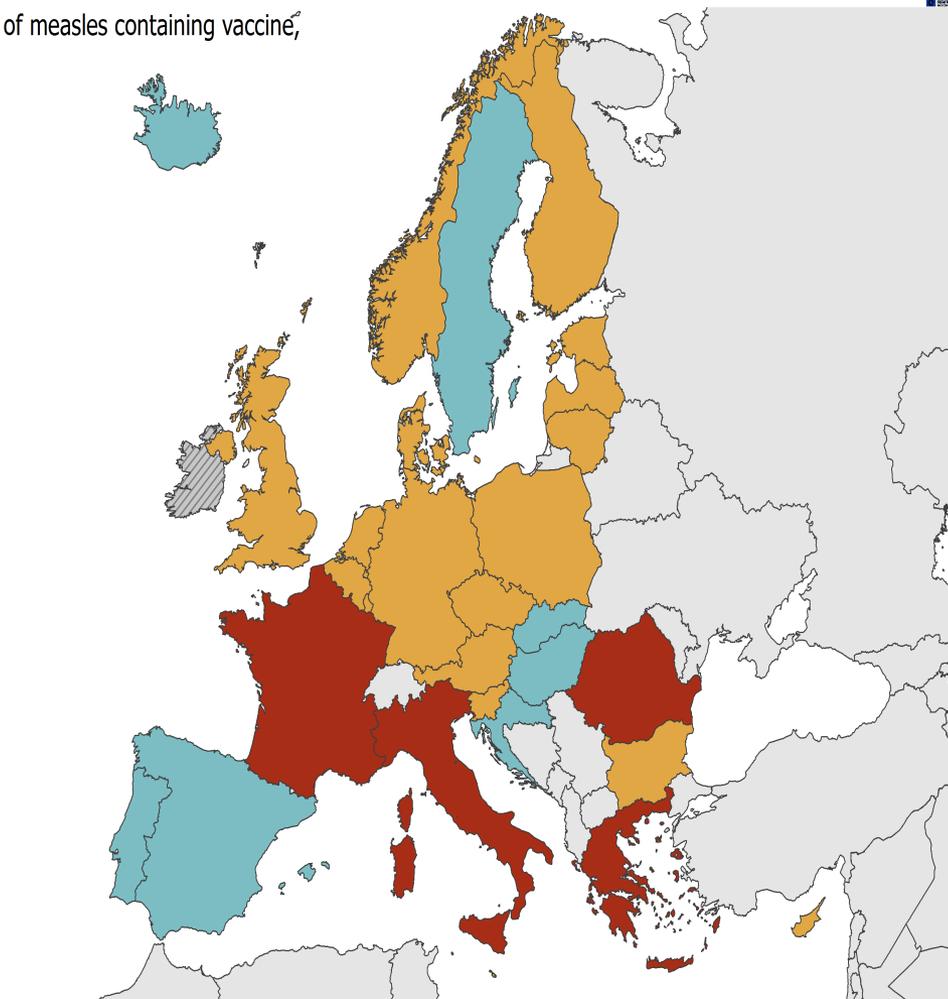
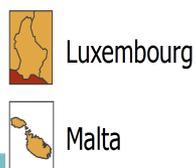
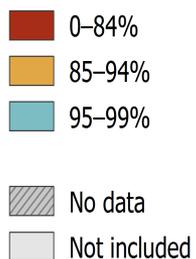


Distribution of measles deaths by country (n=28), April 2017–March 2018, EU/EEA countries



Vaccination coverage for the second dose of measles-containing vaccine by country, 2016, WHO, EU/EEA count

Vaccination coverage of measles containing vaccine,
second dose*, 2016



* Estimates reported to WHO

ECDC. Map produced on: 17 May 2018
ECDC map maker: <https://emma.ecdc.europa.eu>

Thank you for sharing information with ECDC

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