

## RAPID RISK ASSESSMENT

# Increase of cholera cases in the Horn of Africa and the Gulf of Aden – risk for EU/EEA citizens

19 May 2017

### Main conclusions and options for response

There has been an unusual increase in the number of cases of cholera in the Horn of Africa and the Gulf of Aden in recent years. Despite the large number of travellers from the EU/EEA visiting countries in the Horn of Africa and the Gulf of Aden, particularly Ethiopia, Kenya and Tanzania, very few cases are reported each year among returning EU/EEA travellers. In this context, the risk of cholera infection in travellers visiting these countries remains low, even though the likelihood of sporadic importation of cases may increase in the EU/EEA.

According to the World Health Organization, vaccination should be considered for travellers at higher risk such as emergency/relief workers who are likely to be directly exposed. Vaccination is generally not recommended for other travellers [1].

Travellers to cholera endemic areas should seek advice from travel health clinics to assess their personal risk and apply precautionary sanitary and hygiene measures to prevent infection. These can include drinking bottled water or water treated with chlorine, carefully washing fruits and vegetables with bottled or chlorinated water before consumption, regularly hand washing with soap, eating thoroughly cooked food and avoiding consumption of raw seafood products.

### Source and date of request

ECDC internal decision, 17 May 2017.

### Public health issue

The production of this rapid risk assessment was triggered by a report by the Czech Republic of two travel-associated cases of cholera from Zanzibar (Tanzania) and the cholera epidemics in the Horn of Africa and the Gulf of Aden.

This rapid risk assessment focuses on the following risks:

- risk for EU/EEA citizens living or travelling in the Horn of Africa and the Gulf of Aden
- likelihood of introduction and further spread within the EU/EEA.

### Consulted experts

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External reviewer: World Health Organization, Geneva, Switzerland

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## Disease background information

Cholera is an acute enteric infection caused by the bacterium *Vibrio cholerae*. Most infected individuals remain asymptomatic or experience only mild diarrhoea. About 20% of symptomatic cases present with a severe form of the disease, with massive and acute watery diarrhoea, severe dehydration and potential hypotensive shock, which can lead to death in up to 50% of cases if left untreated. Among people receiving appropriate treatment based on rehydration, the case-fatality rate is below 1%. The gold standard laboratory diagnosis is the identification of toxigenic *Vibrio cholerae* serogroup O1 or O139 by culture polymerase chain reaction (PCR) of a stool specimen [2].

Cholera can be transmitted through faecally contaminated water or food. The incubation period ranges from a few hours to five days. Symptomatic patients can shed the bacterium for between two days and two weeks [3]. Outbreaks of cholera are associated with inadequate sanitation and lack of safe drinking water. Cholera is most common in South Asia, particularly in the Indian sub-continent, and is endemo-epidemic in several countries in Africa. Regarding the Americas, cholera outbreaks and sporadic cases have been reported in Mexico, Haiti, the Dominican Republic and Cuba.

Adequate sanitation, clean water supplies, access to safe water (chlorination or boiling of water before consumption) and appropriate food hygiene are the most important preventive measures. There are three safe and effective oral cholera vaccines prequalified by the World Health Organization (WHO) [4].

For more information see the ECDC factsheet on cholera at <http://ecdc.europa.eu/en/healthtopics/cholera/Pages/Factsheet.aspx>

## Event background information

### Imported cases in the Czech Republic

On 16 May, the Czech Republic posted a EWRS message about one confirmed and one probable cases of cholera imported from Tanzania. The confirmed case is a 30-year-old woman who returned to Prague from Zanzibar, via Dar es Salaam and Dubai on 12 May after a seven month stay in Zanzibar. She developed symptoms on 9 May and was diagnosed on 15 May as having *Vibrio cholerae* O1, serotype Ogawa. She was isolated on the same day. The probable case is the 29-year-old male partner of the confirmed case who stayed in Zanzibar and travelled back with the confirmed case. He developed symptoms on 5 May and was isolated on 15 May. The laboratory results are pending.

### Imported cholera cases in the EU/EEA

Cholera is a rare disease in the EU/EEA. According to data reported to The European Surveillance System (TESSy), 162 confirmed cholera cases (annual range: 9 to 35 cases) were reported by 11 EU/EEA countries in the period from 2008 to 2015. The majority (n=153, 96%) of cases were reported as imported. Cases were reported in all age groups with most cases among those between 25-44 years of age (30%) and those between 45-64 years of age (29%). Cases were more common in men than in women (male to female ratio of 1.4). The United Kingdom accounted for 73% of imported cases followed by Germany (9.2%) and the Netherlands (4.6%). The most common travel destinations, accounting for 70% of travel-related cases, were Pakistan (33%), India (32%) and the Dominican Republic (4.8%). The United Kingdom reported one case from Kenya in 2010. No cases were linked to travel to Ethiopia, Tanzania, Somalia and Yemen in the period 2008 to 2015 [5].

## Cholera situation in 2016/2017 in the Horn of Africa and the Gulf of Aden

**Somalia:** In 2016, 15 619 suspected cholera cases including 531 deaths were reported in Somalia [6]. In comparison, for the first four months in 2017, Somalia reported 36 066 suspected cholera cases, including 697 deaths (CFR: 1.9%). The main affected regions are in the South: Bay, Bakol and Lower Shabelle, Middle Juba and Gedo. The last large-scale outbreak that occurred in Somalia was in 2011 with 77 636 cases reported.

**Ethiopia:** There are no official data available on the number of cholera cases in 2016. Since the beginning of 2017 and as of 7 May, Ethiopia has reported 32 689 acute watery diarrhoea cases, including 776 deaths (CFR: 2.4%). Among these cases 5 723 cases were reported in April. The Ethiopian Somali Regional State is the region most affected, with 91% of the reported cases and 99% of the reported deaths.

**Tanzania:** Between 15 August 2015 and 23 March 2017, 25 115 cases, including 390 deaths (CFR: 1.6%) were reported from mainland Tanzania. In 2016, Tanzania reported 14 928 cases, including 202 deaths. In May 2017, 11 cases were reported in Dar es Salaam [7,8].

Between 19 September 2015 and 24 July 2016, 4 330 cases, including 68 deaths (CFR: 1.6%) occurred in all five regions of the Zanzibar archipelago. In April 2017, two cases were reported in Zanzibar.

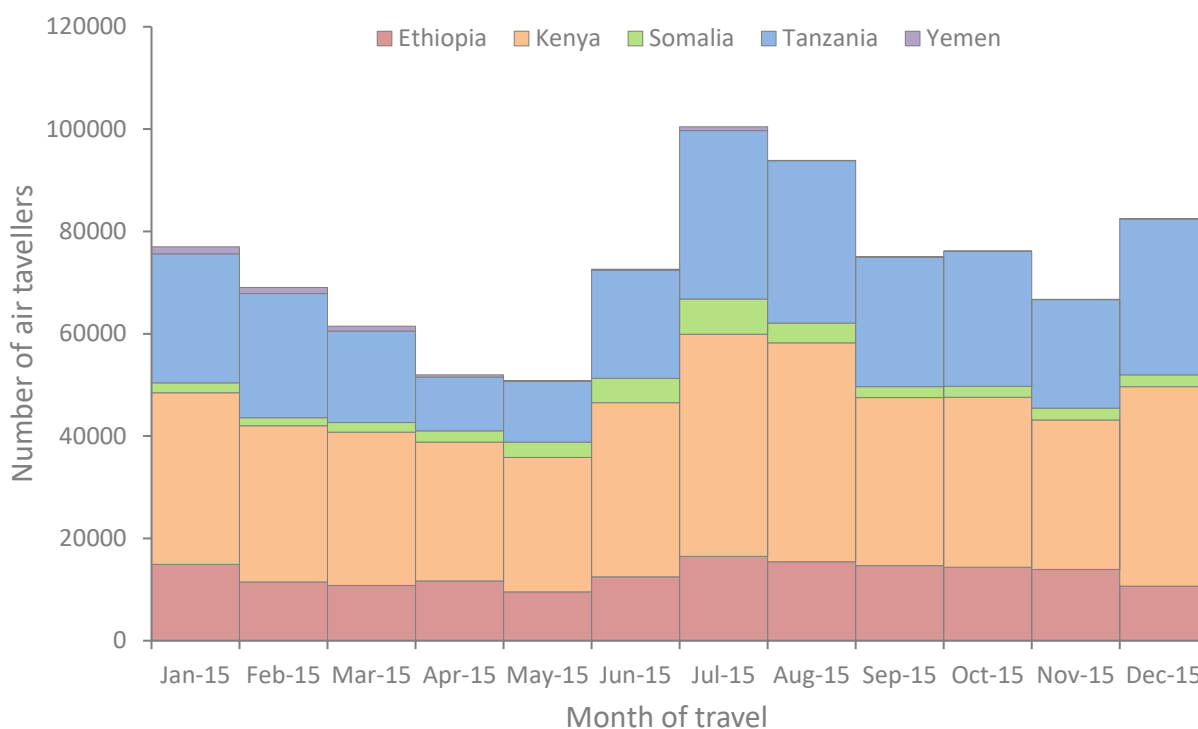
**Kenya:** There are no official data available on the number of cholera cases in 2016. Between January and 15 May 2017, 303 cholera cases, including five deaths, have been reported [9].

**Yemen:** In 2016, 15 843 cholera cases, including 531 deaths (CFR: 3.4%), were reported. Between 27 April and 14 May 2017, authorities reported 11 046 cases, including 124 deaths (CFR: 1.1%). Among these cases, 208 were confirmed cases. The cases are from 18 out of the 21 governorates.

## Travel data

In 2015, according to the International Air Transport Association, 877 373 people travelled by air from EU/EEA Member States to the five affected countries: 401 732 to Kenya (including 63 100 to Mombasa), 279 011 to Tanzania (including 73 713 to Zanzibar), 156 594 to Ethiopia, 35 090 to Somalia and 4 946 to Yemen (Figure 1). Overall, the main countries of departure to the five affected countries were the United Kingdom (30.7% of passengers), Germany (14.5%), Italy (12.4%), the Netherlands (12.3%) and France (9.1%). The months with the highest number of travellers were January and February for Yemen, June and July for Somalia, and July and August for Ethiopia, Kenya and Tanzania.

**Figure 1. Number of travellers from EU/EEA countries to Ethiopia, Kenya, Somalia, Tanzania and Yemen by month in 2015**



## ECDC threat assessment for the EU/EEA

The number of cholera cases reported in Ethiopia, Kenya, Somalia, Yemen and Tanzania since 2000 varies significantly across the years. A significant increase in reported cases has been reported in the region in 2017.

Because of the ongoing humanitarian crisis in the region, resulting in disruptions in water supplies and sanitation, and in the displacement of populations to overcrowded camps, the number of cholera cases detected each week may remain high or even increase.

## Risk for EU/EEA citizens living in or travelling to the Horn of Africa and the Gulf of Aden

Despite the recent increase in the number of cases reported in the affected region, the risk of cholera infection in EU/EEA citizens visiting or residing in these countries remains very low.

However, the risk may be increased for:

- EU residents visiting family and friends in the affected areas
- emergency and relief workers exposed to cholera patients or to contaminated food or water, particularly those staying in areas with poor access to healthcare facilities.

## Likelihood of introduction and further spread within the EU/EEA

The likelihood of introduction of cholera in the EU/EEA countries through an infected person is low, but may increase in the context of the increased number of cases reported in the affected region.

The importation of cholera through food items carried back by travellers returning after having visited friends and family in affected region is possible, potentially resulting in small clusters of cases exposed to the food, but the likelihood of this remains very low [10].

The likelihood of secondary transmission around imported cases in families or among healthcare workers is extremely low considering the hygiene standards in the EU/EEA.

The likelihood of transmission to passengers in an airplane in which a symptomatic case has travelled is very low unless direct exposure with diarrhoea or vomiting fluids has taken place.

## References

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