

# Plague

## Annual Epidemiological Report for 2019

### Key facts

- For 2019, no cases of plague were reported by any of the EU/EEA countries.

Plague is caused by the bacillus *Yersinia* (*Yersinia pestis*), belonging to the family of the Enterobacteriaceae. It evolved several thousand years ago from *Yersinia pseudotuberculosis*. Three phenotypically different biovars can be recognised and, according to molecular data, they correspond to phylogenetically distinct groups. The bacterium contains a toxin-producing plasmid that is responsible for its high lethality.

Plague is a bacterial disease that has played an important role in the history of Europe. Three different plague pandemics have occurred in the past centuries, the latest one at the turn of the 19th century, and all with significant mortality worldwide. Plague has been absent from Europe for over half a century now, but is still widespread in the Americas, Africa and Asia.

### Methods

This report is based on data for 2019 retrieved from The European Surveillance System (TESSy) on 17 November 2020. TESSy is a system for the collection, analysis and dissemination of data on communicable diseases.

For a detailed description of methods used to produce this report, refer to the *Methods* chapter [1].

An overview of the national surveillance systems is available online [2].

A subset of the data used for this report is available through ECDC's online *Surveillance atlas of infectious diseases* [3].

For 2019, 30 EU/EEA countries reported case-based plague data (Liechtenstein did not report). Twenty-six countries used the EU case definition, three (Denmark, Germany and Italy) used an alternative case definition and one (France) did not specify the case definition used. Surveillance is compulsory in 28 EU/EEA countries (not specified in Belgium and the United Kingdom), comprehensive and mostly passive.

### Epidemiology

For 2019, no cases of plague were reported by any of the EU/EEA countries. Autochthonous plague has not occurred in Europe for several decades.

## Discussion

Plague, caused by the bacterium *Yersinia pestis*, is enzootic in wild rodents in central and eastern Asia, Africa, and North America and remains endemic in many natural foci around the world [4]. Recent outbreaks have shown that plague may reoccur in areas that have long remained unaffected [5]. While urban plague has been controlled in most of the world, the disease remains a public health problem in rural areas in many countries. In the US, one locally acquired case was reported in 2018 [6].

In 2018, the Democratic Republic of the Congo had 133 cases, overtaking Madagascar (104 cases in 2018), which accounted for most of the plague cases worldwide reported between 2013 and 2017 [5].

## Public health implications

Plague has been absent from Europe for over half a century, however it should be considered in the diagnosis for symptomatic travellers returning from risk areas [7]. In risk areas, plague can be avoided by reducing the risk of contact with wild rodents and their fleas, either through personal protection or environmental sanitation, including rodent and flea control [8]. In natural foci, monitoring programmes should be set up so that control can be promptly initiated. There is no approved vaccine, but antibiotics can be used as prophylaxis. Prophylactic treatment is only recommended for those who have been in close contact with plague cases, or who have had other types of high-risk exposure, such as bites from fleas or direct contact with the bodily fluids or tissues of infected animals [7]. Healthcare workers should apply appropriate protective measures (i.e. wear gloves and masks) when dealing with patients, particularly for cases of pneumonic plague [7].

## References

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