

Smallpox

Annual Epidemiological Report for 2018

Key fact

- Smallpox was declared eradicated in 1980. There were no reports of confirmed or possible smallpox in the EU/EEA or other countries for 2018.

Methods

This report is based on data for 2018 retrieved from The European Surveillance System (TESSy) on 10 September 2019. 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].

In 2018, 30 EU/EEA countries reported smallpox data (Liechtenstein did not report). Twenty-four countries used the EU case definition, three countries (Denmark, Germany and Italy) used an alternative case definition, and three countries (Belgium, Finland and France) did not specify the definition they used. Surveillance is comprehensive in all countries.

Epidemiology

There were no reports of confirmed or possible smallpox cases in the EU/EEA or other countries for 2018.

Discussion

Smallpox is a systemic infectious disease unique to humans, caused by either of two orthopoxvirus variants, *Variola major* and *Variola minor* [3]. In 1980, the World Health Organization (WHO) declared smallpox eradicated. Since then, WHO closely follows the status of post-eradication decisions, including smallpox virus research and medical countermeasures (vaccines and antivirals) [4]. Development of new point-of-care tools for differential diagnosis of poxviruses is promising, particularly in areas lacking proper laboratory infrastructure, as well as rapid on-site testing of suspected samples [5].

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Public health implications

Mass smallpox vaccination campaigns have ceased after eradication. Consequently, the population that is immunologically naive to orthopoxviruses has increased, which renders smallpox viruses suitable for use as a biological weapon. Legitimately, the virus exists only in two WHO reference laboratories. Preparedness for dealing with any accidental or intentional release or natural re-emergence requires global attention [6].

The disease most similar to smallpox clinically and immunologically is monkeypox, a zoonosis endemic to moist forested regions in West and Central Africa. The smallpox vaccine provided protection against both infections. The observation of monkeypox cases in humans in the Democratic Republic of Congo over several years has prompted the question whether the cessation of smallpox vaccination may be driving this phenomenon [7].

References

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