



SURVEILLANCE REPORT

Annual Epidemiological Report for 2016

Smallpox

Key fact

- Smallpox was declared eradicated in 1980. There were no reports of confirmed or possible smallpox cases in the EU/EEA or other countries for 2016.

Methods

This report is based on data for 2016 retrieved from The European Surveillance System (TESSy) on 4 April 2018. 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, please refer to the *Methods* chapter [1].

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

In 2016, 27 EU/EEA countries reported smallpox data (Croatia, Liechtenstein, Malta and Portugal did not report). Twenty-one 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 in the EU/EEA or other countries for 2016.

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 declared smallpox eradicated. Since then, WHO closely follows the status of the post-eradication decisions including smallpox virus research and medical countermeasures (vaccines and antivirals) [4]. Development of new point-of-care tools for differential

Suggested citation: European Centre for Disease Prevention and Control. Smallpox. In: ECDC. Annual epidemiological report for 2016. Stockholm: ECDC; 2018.

Stockholm, October 2018

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diagnosis of poxviruses is promising, particularly in areas lacking proper laboratory infrastructure as well as rapid on-site testing of suspected samples [5].

Public health implications

Mass smallpox vaccination campaigns have ceased after eradication. Consequently, the population that is immunologically naïve 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 clinically and immunologically most similar to smallpox is monkeypox, a zoonosis endemic to moist forested regions in West and Central Africa. 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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