

Smallpox

Reporting on 2014 data retrieved from TESSy* on 19 November 2015

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Key facts

- There were no reports of smallpox or potential smallpox in EU/EEA or other countries in 2014. Smallpox was declared eradicated in 1980.

Methods

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- Data were obtained from 27 EU/EEA countries; Croatia, Portugal and Liechtenstein did not submit data.
- The EU case definition was used by 21 countries; three countries used an alternative case definition, and three countries did not specify the case definition.
- Surveillance is compulsory in 26 EU/EEA countries; surveillance systems are comprehensive and mostly passive (Annex).

Epidemiology

There were no reports of smallpox or potential smallpox in EU/EEA countries or other countries in 2014.

Discussion

Smallpox is a systemic infectious disease, unique to humans, caused by either of two orthopoxvirus variants, Variola major and Variola minor. In 1980, the World Health Organization declared smallpox eradicated.

Mass smallpox vaccination campaigns have ceased after eradication. Consequently, the population that is immunologically naïve to orthopoxviruses has increased significantly, which makes it possible to consider smallpox viruses for use as a biological weapon. Legitimately, the virus exists only in two WHO reference laboratories. Any new case of smallpox would have to be the result of accidental or deliberate release. On 1 July 2014, the US National Institutes of Health (NIH) notified an episode where employees discovered vials labeled 'variola' in an unused portion of a storage room in a Food and Drug Administration laboratory located on the NIH Bethesda campus (Maryland, USA). There is no evidence that any of the vials were breached; onsite biosafety personnel did not identify any infectious exposure risk to lab workers or the public [1].

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 prompts the question of whether the cessation of smallpox vaccination drives this phenomenon [2,3].

References

1. Centers for Disease Control and Prevention. CDC media statement on newly discovered smallpox specimens 2014 [cited 2014 July 8]. Available from: <http://www.cdc.gov/media/releases/2014/s0708-NIH.html>
2. Petersen BW, Damon IK, Pertowski CA, Meaney-Delman D, Guarnizo JT, Beigi RH, et al. Clinical guidance for smallpox vaccine use in a postevent vaccination program. MMWR Recomm Rep. 2015 Feb 20;64(RR-02):1-26.
3. Reynolds MG, Damon IK. Outbreaks of human monkeypox after cessation of smallpox vaccination. Trends Microbiol. 2012 Feb;20(2):80-7.

Additional information

[ECDC Surveillance Atlas of Infectious Diseases](#)

Annex

Table. Smallpox, surveillance systems overview, 2014

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Country	Surveillance system
Albania	Notified diseases
Andorra	Notified diseases
Austria	Notified diseases
Belgium	Notified diseases
Bulgaria	Notified diseases
Croatia	Notified diseases
Cyprus	Notified diseases
Czechia	Notified diseases
Denmark	Notified diseases
Estonia	Notified diseases
Finland	Notified diseases
France	Notified diseases
Germany	Notified diseases
Greece	Notified diseases
Guernsey	Notified diseases
Hungary	Notified diseases
Iceland	Notified diseases
Ireland	Notified diseases
Italy	Notified diseases
Latvia	Notified diseases
Lithuania	Notified diseases
Luxembourg	Notified diseases
Malta	Notified diseases
Netherlands	Notified diseases
Norway	Notified diseases
Poland	Notified diseases
Portugal	Notified diseases
Romania	Notified diseases
Slovakia	Notified diseases
Slovenia	Notified diseases
Spain	Notified diseases
Sweden	Notified diseases
Switzerland	Notified diseases
Turkey	Notified diseases
United Kingdom	Notified diseases
Wales	Notified diseases
Yemen	Notified diseases

* The European Surveillance System (TESSy) is a system for the collection, analysis and dissemination of data on communicable diseases. EU Member States and EEA countries contribute to the system by uploading their infectious disease surveillance data at regular intervals.