



European Monitoring Centre
for Drugs and Drug Addiction



**Joint ECDC and EMCDDA Threat Assessment
Anthrax outbreak in drug users, Scotland
21 December 2009**

SOURCE AND DATE OF REQUEST

EWRS from the UK on 18 December 2009

PUBLIC HEALTH ISSUE

Anthrax in injecting drug users and risk of continued transmission or new infections through contaminated product

CONSULTED EXPERTS

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DISEASE BACKGROUND INFORMATION

Anthrax is an acute infectious disease caused by the Gram-positive spore-forming bacterium *Bacillus anthracis*. Anthrax most commonly occurs in wild and domestic animals like cattle, sheep, goats, camels, and is endemic in a number of mostly agricultural countries in South- and Central America, Southern and Eastern Europe, Asia, Africa, the Caribbean, and the Middle East. In most industrialized countries, anthrax is a rare disease, and in infection in humans is usually due to occupational exposure to infected animals or their products.

Anthrax infection can occur in three forms: cutaneous (about 95% of all cases occurring), pulmonary with severe atypical pneumonia, and gastrointestinal. Symptoms of disease vary depending on how the disease was contracted. The incubation period is usually 1 to 7 days, but can be prolonged to up to 60 days. Untreated, the case fatality rates range from 5-20% in cutaneous anthrax, to more than 85% in pulmonary and gastrointestinal anthrax. Antibiotic treatment is

effective and can prevent most deaths in cutaneous cases; however, mortality in pulmonary and gastrointestinal cases remains high even with treatment. ⁽¹⁾

B. anthracis spores can live in the soil for many years, and humans can become infected with anthrax by handling products from infected animals or by inhaling anthrax spores from contaminated animal products. Anthrax infection can also be acquired by eating undercooked meat from infected animals, or, as has been reported, by injecting contaminated drugs (5). The risk of person-to-person transmission is extremely low.

B. anthracis is listed as Category A pathogen in the list of bioterrorism agents of the US CDC, and belongs to the group of “very high threat” agents of the EU. Deliberate release of spores may also lead to infection in humans.

EVENT BACKGROUND INFORMATION

On 18 December 2009, the UK issued a message through EWRS reporting an outbreak of anthrax among injecting drug users (IDU) in Scotland. Two cases from Glasgow, one of them fatal, had been confirmed as having anthrax infections, and 3 additional possible cases were under investigation. Both confirmed cases developed illness in the first week of December.

On 21 December 2009, HP Scotland updated the information and reported 3 confirmed cases, one of them fatal, 1 probable case, and 4 additional possible cases with clinical pictures compatible with anthrax infection. The cases are six males and 2 females, between 26 and 44 years of age. They developed symptoms between 7 and 20 December 2009, and originate from Glasgow and the surrounding areas. The only link so far between the cases is that they are all heroin users, either injecting (7 cases, reporting no needle-sharing) or smoking (1 possible case who has developed severe atypical pneumonia).

In Scotland and England information had been sent out to hospitals, GPs, emergency departments, microbiologists, and drug teams to raise awareness and to request that cases of severe soft tissue infection or sepsis in an injecting drug user, who has died or has been sufficiently unwell to require admission to hospital, are reported to their local public health authority.

Anthrax surveillance in Scotland is based on voluntary laboratory reports. Only one case of anthrax has been reported in Scotland since 1987, in 2006, in a person who made drums from animals hides ⁽²⁾.

The European early warning network of the EMCDDA has been alerted to support surveillance efforts in detecting possible additional cases in other countries in Europe.

ECDC THREAT ASSESSMENT FOR THE EU

The frequent occurrence of skin and soft tissue infections in IDU is a well-known phenomenon ^(3,4), even though anthrax is a rare cause, and few cases have been described so far. In 2000, one single case of anthrax was diagnosed in a heroin user in Norway, but no further cases had been detected ⁽⁵⁾.

The current event indicates the existence of a cluster of three confirmed cases of *B.anthraxis* infections and five additional probable or possible cases in Scotland in heroin users. This could suggest the contamination of heroin or cutting products from a common source. At present, no other cases are reported from other European countries. However, considering the complex international distribution chain of heroin, the exposure of heroin using IDU in other EU Member States cannot be excluded. Investigation of the origin of the drug supply and distribution channels, if possible, may help to clarify the range of possible spread of the potentially contaminated batch of heroin.

This event confirms the importance of clinical awareness in health care settings of the risk of injection-related infection with rare pathogens as well as pneumonia as a manifestation of pulmonary anthrax infection among the IDU population.

CONCLUSIONS

Based on current information, there are no confirmed or suspected cases of anthrax infection among IDU reported from other EU Member States outside of the UK (Scotland). However, since a likely cause of the outbreak is contamination of heroin or cutting substances, increased awareness in hospitals and other health care settings would be useful to support surveillance efforts, and to provide an indication on a broader distribution of contaminated products.

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