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Cases of anthrax in the United States – update and public health guidance

On 4 October 2001, a case of anthrax was reported in a 63 year old resident of Florida (1). The patient was admitted to hospital with the respiratory form of anthrax and subsequently died. An epidemiological investigation and public health surveillance was started to determine how infection with Bacillus anthracis occurred and identify other infections. An environmental investigation identified one sample taken from the patient's workplace (America Media Incorporated (AMI), Boca Raton, Florida) as positive for anthrax. B. anthracis was also identified in one nasal sample from another worker in the same building, which suggests exposure.

On 16 October, the 73 year old male employee of AMI, in hospital since the beginning of October, was diagnosed as a probable case of anthrax disease. The diagnosis could not be confirmed according to the strictest diagnostic criteria. The overall picture of clinical symptoms, however, combined with positive results on laboratory tests, suggests that this patient has anthrax disease. Also, a minuscule amount of anthrax spores has been found in a small, non-public mail processing area of the Boca Raton main post office. There is no indication that these spores pose a health risk to workers or visitors. As an extraordinary precaution, health officials asked employees to leave this small portion of the building. At present in Florida, there are two cases of anthrax and one exposure.

In New York on 12 October it was reported that an employee of a media concern (ABC) based in the city developed cutaneous anthrax (2). The source of the exposure is still being investigated, but it is possible that it may have occurred when an envelope was opened on 25 September 2001 that may have contained material contaminated with the spore form of anthrax. The employee developed a skin infection and was seen by an infectious disease specialist who suspected cutaneous anthrax. The patient has been treated with antibiotics and is doing well. Although test results are normally not released to the public until there is confirmation, these preliminary results were released given the current circumstances. Selected areas of the man’s workplace were closed, and environmental samples taken. The risk of exposure is greatest for the few people who handled the suspect letter after it was opened, or those in the immediate area at the time the envelope was opened. Nevertheless, as a precaution, all the people who worked on the third floor of the office building were given antibiotics.

On 16 October it was reported that cutaneous anthrax had been diagnosed in an infant on the basis of preliminary tests (3). The infant’s doctor notified the New York City Health Department on 12 October that the symptoms might be suggestive of a cutaneous anthrax

infection. On 13 October, a skin biopsy was sent to the Centers for Disease Control and Prevention (CDC) for testing and the health department received the results on 15 October. The child's mother, an ABC employee, took the child with her to the ABC building on West 66th Street in Manhattan on 28 September. Although it is not certain that the child came into contact with anthrax bacteria at the ABC building, it is currently the focus of an investigation. The child started taking a course of antibiotics and is doing well. The New York City Health Department is not aware of any other individuals with symptoms of cutaneous anthrax who work in, or visited, the ABC building. At present in New York, there are two cases of anthrax and three exposures.

Also on 16 October, CDC and health officials in Washington began a public health investigation related to possible anthrax exposure on Capitol Hill (3). Information and guidelines on antibiotic prophylaxis and anthrax is available from CDC at http://www.bt.cdc.gov. Further public health updates on the developing situation in the United States can be expected to be posted at http://www.cdc.gov/od/oc/media/.

United States postal service guidance about the management of anthrax threat letters or packages (http://www.usps.com/news/2001/press/pr01_1010tips.htm) includes a list of criteria for recognising a suspicious letter or parcel (see box).

What constitutes a suspicious letter or parcel?

Some typical characteristics that ought to trigger suspicion include letters or parcels that:

- have any powdery substance on the outside
- are unexpected, or from someone unfamiliar to you
- are addressed to someone no longer with your organisation, or are otherwise outdated
- have no return address, or have one that cannot be verified as legitimate
- are of unusual weight, given their size, or are lopsided or oddly shaped
- have an unusual amount of tape on them
- are marked with restrictive endorsements, such as "Personal" or "Confidential"
- have strange odours or stains
- show a city or state in the postmark that does not match the return address

Further information is available at http://www.bt.cdc.gov/DocumentsApp/-Anthrax/10122001Handle/10122001Handle.asp
In the United Kingdom, the Public Health Laboratory Service has updated its website to provide up to date guidelines on disease facts (http://www.phls.co.uk/facts/anthraxinfo.htm), frequently asked questions (http://www.phls.co.uk/advice/anthrax%20QA.pdf), and provisional guidelines for action in the event of a deliberate release (http://www.phls.co.uk/advice/anthrax_guidelines.pdf). Information on past human cases in England and Wales can be found at http://www.phls.co.uk/publications/CDR Weekly/pages/news.html. Statutory notifications of anthrax in England and Wales show that there were 16 possible cases of anthrax between 1981 and 2000, with all cases being the cutaneous form of the disease. There have been no cases so far in 2001.

References :

1. Centers for Disease Control and Prevention (CDC). Notice to readers: ongoing investigation of anthrax – Florida, October 2001. Morb Mortal Wkly Rep MMWR 2001; 50: 878. (http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5040a5.htm)

2. CDC. Update: public health message regarding anthrax. 12 October 2001. (click here)

3. CDC. Update: Anthrax Investigations, Florida and New York. Press Release 16 October 2001. (http://www.cdc.gov/od/oc/media/pressrel/r011016.htm)

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Cluster of cases of meningococcal serogroup C disease in Austria – justification for no mass intervention

Three cases of meningococcal disease occurred in three neighbouring villages in the Austrian state of Styria between 29 January and 8 February 2001 (1). The surrounding region has a population of 10 145 people, distributed over nine villages.

The first case, a 1 year old boy with meningococcal septicaemia, became ill with a feverish infection on 28 January 2001. The following day he had a skin rash and was taken to the family doctor and admitted to hospital where meningococci were isolated from the blood culture. He was treated with cefotaxime and, after diagnosis, penicillin. He was discharged on 8 February. His contacts received chemoprophylaxis but declined immunisation with a quadrivalent vaccine.

The second case, a 14 year old schoolboy, developed a high temperature on 29 January 2001, accompanied by a severe headache and vomiting. On the morning of 30 January his mother found him unconscious in bed. He was admitted to the same hospital as the first case, and meningococci were cultured from his cerebrospinal fluid (CSF). He received cefotaxime and later penicillin, and was discharged on 10 February. His family, classmates, and 16 teachers received chemoprophylaxis; his classroom and the school workshop were closed for three days. Twelve contacts chose to be immunised.

The third case, a 59 year old man, was admitted to hospital on 11 February, having felt ill since 8 February. Because he had shown neurological disturbances, he was to be transferred to another hospital for computed tomography. During preparation for the transfer his condition deteriorated, and he gradually lost consciousness. He was admitted to intensive care, and meningococci were isolated from his CSF. Antibiotic treatment was started on 12 February, but the patient died on 14 February as a result of a rare site of meningococcal infection, purulent pericarditis, and meningitis. At necropsy, no further underlying conditions were found. His partner received chemoprophylaxis but declined the vaccine.

The Neisseria meningitidis isolates of all three patients were closely related phenotypically. All three strains were identified as serogroup C serotype 2b (two were subtype 1.2, the third subtype 1.2,5). Pulsed field gel electrophoresis showed the same pattern by all strains of that phenotype isolated over several years in Austria. Therefore it gave no conclusive evidence for a cluster. Nevertheless, N. meningitidis serogroup C serotype 2b, is not isolated very often in Austria. Throughout 2000, only five cases of this serotype were registered. The finding of three primary cases caused by nearly identical but otherwise rare strains leads to the assumption that this constituted a cluster.

Thorough investigations by the local health authorities did not show any social or institutional links between the three cases, and no group could be identified as specifically at risk on the basis of the information obtained. The outer municipal boundaries of the three neighbouring villages in Styria are a maximum distance of 20 km apart and are easily accessible via a network of traffic and transport routes.

As no common affiliation (for example, a school or club) of the patients could be assessed, nor did they belong to a defined age group (a baby, an adolescent, and an older man), the population of the region was the basis for the estimation of the attack rate. The estimated attack rate of 30 cases per 100 000 population exceeded the intervention criterion defined by the Centers for Disease Control and Prevention (CDC) in Atlanta, of 10 cases/100 000 within three months (odds ratio 2.96; 95% confidence interval 0.88 to 9.96). By calculating the

confidence interval it was concluded that this could have occurred by chance (2).

In contrast to the CDC criterion, the Public Health Laboratory Service Communicable Disease Surveillance Centre (PHLS CDSC) for England and Wales gives the following guidance on clusters (3). CDSC recommends possible intervention if the age specific attack rate in a three month period is high – for example, 40/100 000. There are also differences in the minimal number of cases required before considering a vaccination campaign. The CDC recommendations quote a minimum of three primary cases whereas the PHLS guidance suggests a minimum number of four primary cases. The death of one of the cases in the cluster described here was an aggravating factor in considering the necessity of starting a vaccination campaign in the affected region and disseminating public health warnings. The described cluster was on the borderline of intervention. Either approach – taking an observing position or prompting a vaccination campaign – were warranted at that time. The polysaccharide vaccine is, however, effective only in children older than 2 years and only seven to 10 days after administration. The overall small number of cases and the special circumstances (the beginning of a week of school holidays) were reasons not to start a community based immunisation programme. In the following three months no further cases of infection with N. meningitidis were observed in this region.

A description of arrangements for managing an epidemiological emergency involving more than one member state of the European Union includes a case study for meningococcal disease (4). Notification systems for meningococcal disease are comparatively similar for most countries in Europe, but policies on its control are heterogeneous. The differences in the guidelines reflect lack of evidence of the dynamics for the spread and acquisition of meningococcal disease. Each country handles 'outbreaks' by managing only the situation in that country.

References :

1. Berghold C, Heuberger S, Neckstaller I, Piribauer F. Auftreten eines Clusters von Meningokokken der Serogruppe C im Frühjahr 2001 in der Steiermark. Mitteilungen der Sanitätsverwaltung 2001; 102(8): 3-7.
2. CDC. Control and prevention of meningococcal disease and control and prevention of serogroup C meningococcal disease: evaluation and management of suspected outbreaks: recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR Morb Mortal Wkly Rep 1997; 46: (No RR-5). (http://www.cdc.gov/mmwr//preview/mmwrhtml/00046237.htm)
3. Stuart JM, Monk PL, Lewis DA, Constantine C, Kaczmarski EB, Cartwright KAV, et al. Management of clusters of meningococcal disease. Commun Dis Rep CDR Rev 1997; 7(1): R3-5. (http://www.phls.co.uk/publications/CDRreview/1997/cdrr0197.pdf)
4. Brand H, Camaroni I, Gill ON, Fulop N, MacLehose L, McKee M, et al. An evaluation of the arrangements for managing an epidemiological emergency involving more than one EU member state. Bielefeld: Landesinstitut für den Öffentlichen Gesundheitsdienst NRW, 2000. (Funded by DGV of the European Commission.)

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Surveillance for infectious diseases in the European Union

In 1998, the European Parliament and Council concluded a debate on how to organise infectious disease surveillance in the European Union with a Decision to create a scheme for decentralised networks rather than build a large European surveillance centre (1,2). Institutions in member states receive funding to organise European surveillance for one or more infectious pathogens. A study reported in last week's BMJ examines how these networks

functioned in five international outbreaks (3). This study had been commissioned by the Directorate General Health and Consumer Protections (DG SANCO, then DGV) (4,5).

The outbreaks – meningococcal disease, salmonella food poisoning, shigella food poisoning, legionnaires' disease, and influenza H5N1 – were selected to capture different routes of disease transmission. A postal questionnaire survey was undertaken among participants in the investigations identified through relevant European surveillance networks for specific diseases and national communicable disease surveillance centres, the World Health Organization (WHO), and the Centers for Disease Control and Prevention (CDC) in Atlanta. Analysis of the data was performed using techniques of data triangulation and hazard analysis of critical control points (HACCP) to identify potential weaknesses where system components interact or where events are critical to outcome. Flow charts for the management processes for each study helped identify obstacles to the effective management of emergencies.

The common critical control points thus identified were: a failure to identify and report cases; a failure to inform other countries; inadequate preparedness planning; inadequate funding arrangements; a failure to link information to action; a failure to provide capacity for international outbreak investigation; and a failure to share lessons. The authors recommend that the European Commission further develop existing disease related surveillance networks within a framework in which organisational, financial, and legal uncertainties are clarified. The existing networks have shown their value, and no additional value is seen in the development of a single, centralised European surveillance centre, although coordination at the European level is essential.

The authors of the accompanying editorial, however, do not think that decentralised networks and a centre are mutually exclusive, and they suggest a "slim" European centre with an important coordinating and response role (6). The functions of such a centre could be: coordination, but not delivery, of the networks' activities; helping to create broader European strategies for developing national and international capacities for training, applied research, surveillance, and prevention; providing technical advice to the European Commission on public health issues; managing activities such as the European Programme for Intervention Epidemiology Training (EPIET) and publications such as Eurosurveillance and Eurosurveillance Weekly; and providing a means of external evaluation of national programmes.

References :

1. Decision No 2119/98/ED of the European parliament and of the council of 24 September 1998 setting up a network for the epidemiological surveillance and control of communicable diseases in the community. Official Journal of the European Communities No L268 1998 October 3:1-7.
2. Akehurst C. European Parliament decides on a communicable disease network. Eurosurveillance Weekly 1998; 2: 981022.
3. MacLehose L, Brand H, Camaroni I, Fulop N, Gill ON, Reintjes R, et al. Communicable disease outbreaks involving more than one country: systems approach to evaluating the response. BMJ 2001; 323: 861-3. (http://www.bmj.com/cgi/content/full/323/7317/861)
4. Institute of Public Health NRW, London School of Hygiene and Tropical Medicine, Public Health Laboratory Service Communicable Disease Surveillance Centre. An evaluation of the arrangements for managing an epidemiological emergency involving more than one EU member state. Draft report for discussion on 7 February 2000. (Funded by DGV of the European Commission.)
5. Brand H, Camaroni I, Gill ON, Fulop N, MacLehose L, McKee M, et al. An evaluation of the arrangements for managing an epidemiological emergency involving more than one EU member state. Bielefeld: Landesinstitut für den Öffentlichen Gesundheitsdienst NRW, 2000. (Funded by DGV of the European Commission.)
6. Catchpole M, Petersen L. Surveillance for infectious diseases in the European Union. BMJ 2001; 323: 818-9. (http://www.bmj.com/cgi/content/full/323/7317/818)

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