

OUTBREAK OF *SALMONELLA* KEDOUGOU IN NORWAY ASSOCIATED WITH SALAMI, APRIL-JUNE 2006

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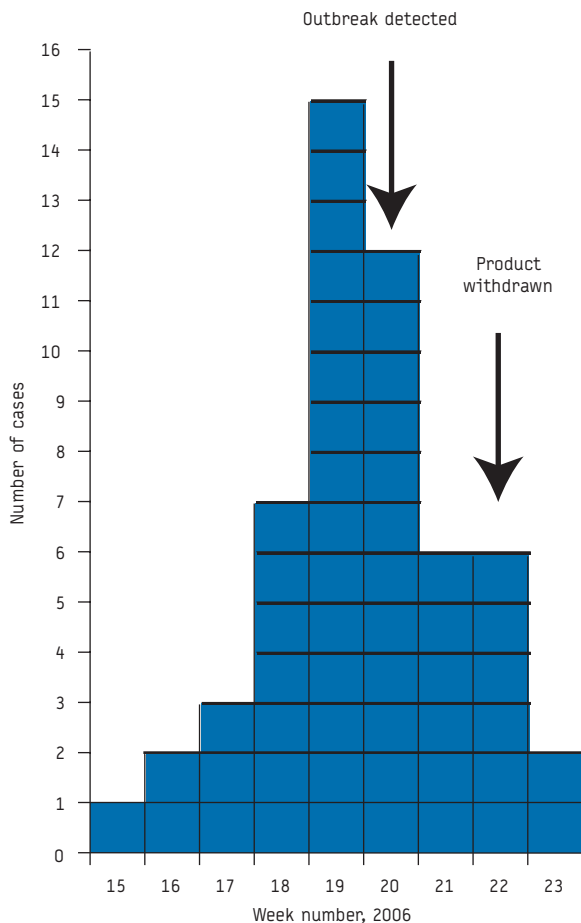
<http://www.eurosurveillance.org/ew/2006/060706.asp#3>

Nasjonalt folkehelseinstituttet (the Norwegian Institute of Public Health, NIPH) has recently completed the investigation of a nationwide outbreak of *Salmonella* Kedougou infections. The outbreak was detected by the reference laboratory at NIPH on 18 May 2006 after verifying six cases without travel history during the previous month [1]. On 22 May, an urgent enquiry was sent out through Enter-net, the international surveillance network for the enteric infections *Salmonella* and VTEC O157 (http://www.hpa.org.uk/hpa/inter/enter-net_menu.htm). Other participating countries indicated that they had no cases, suggesting a source in a food product sold mainly in Norway.

A total of 54 cases were verified by the national reference laboratory by 28 June (Figure 1). The case definition was patients with *S. Kedougou* verified in faeces, blood or urine by the national reference laboratory, onset of symptoms between April and June 2006

FIGURE 1

Cases of *Salmonella* Kedougou in Norway associated with salami, by week of symptom onset, April-June 2006, Norway. n=54



and with no history of travel. The patients' ages ranged from 9 months to 90 years, with a predominance of cases in the age groups 0-9, 50-59 and 80-89 years. Twenty six cases were female and 28 male (Figure 2). The onset of symptoms was 11 April for the first case and 6 June for the last case. The cases were spread over 37 out of 436 municipalities in Norway. No cases were reported from the northern part of the country. One of the patients, a man aged between 50 and 59 years with serious underlying illness, died due to *Salmonella* sepsis. All the patients had diarrhoea.

Based on answers from pilot interviews with the first 12 patients, a more detailed questionnaire focusing on spices and salami types was prepared and distributed to the patients. Food samples were collected from the patient's homes by the NFSA.

S. Kedougou was isolated from an opened package of a particular brand of Danish-style salami on 1 June, and on 3 June the preliminary results from a case-control study (at that time 6 cases and 12 matched controls) supported the suspicion that this specific salami product was the probable source of the outbreak. On 4 June *S. Kedougou* was isolated from an unopened package of the same product from a shop, and NFSA recalled the product from the market the same day.

The product was produced in Norway for the Norwegian market only, and was not distributed in northern Norway, which explains the geographical distribution of the cases. Further investigation did not reveal how the contamination of the production batch could have occurred.

Kedougou is a very rare serotype in Norway. The isolates in this outbreak are fully sensitive to antibiotics. Only 7 cases were reported in Norway between 1979 and 2005, of which 6 had a history of travel abroad during the incubation period. In 2005, only 48 cases of this serotype were reported to Enter-net, accounting for 0.05 % of the total number of *Salmonella* isolates reported.

Acknowledgements:

The outbreak investigation was a collaboration between NIPH (Department of Infectious Disease Epidemiology and Department of Foodborne Infections), Norwegian Food Safety Authority (NFSA), the National Veterinary Institute and municipal medical officers.

References:

1. Status for utbruddet av *Salmonella* Kedougou-infeksjon. MSIS-rapport 2006;34(23). (<http://www.fhi.no/dav/733ED1710D.pdf>)

FIGURE 2

Cases of *Salmonella* Kedougou in Norway associated with salami, by age and sex, April-June 2006, Norway. n=54

