Sesame-seed paste caused an international outbreak due to *Salmonella* Typhimurium DT104 - the investigation in Norway

Ole Alvseike\(^1\), P. J. Guerin\(^{1,2}\), T. Stavnes\(^1\), P. Aavitsland\(^1\)

\(^1\)Norwegian Institute of Public Health, Oslo, NORWAY

\(^2\)EPIET (European Programme for Intervention Epidemiology Training)
Background

- **DT104**
  - *Salmonella* Typhimurium definitive phage type 104
  - Antibiogramme: ACSSuT

- **Incidence DT 104 in Norway**
  - up to 12 domestic cases per year (1998 – 2000)
  - Incidence rate: 0.3/100,000

- **The Norwegian notification system**
  - 3-way system: Physicians, primary laboratories and national reference laboratory
  - Place of acquisition is being reported
The cluster

- April 2001: The cumulative incidence of S. Typhimurium from Buskerud County was unusually high: 11 cases
- Asian and Middle Eastern names
- June 2001: Sweden isolated DT104 from sesame seed paste (Helva)
Methods

Case definition:
- DT104
- Acquired in Norway
- Nov 2000 - Jul 2001

Controls
- 2 controls per case from the national population register
- Matched for origin based on name, geography, age and sex

Questionnaire:
- A helva hypothesis
- A hospital hypothesis
- Pictures of food items
Results:

- 28 cases
  - Sex ratio: m/f = 0.4
  - Median age: 23 years

- Case control
  - 18 cases
  - 20 controls

- Ate helva the week before: $\text{OR}_e = 8.8 \ (1.2 - 394)$
- Ever eaten helva: $\text{OR}_e = 19.6 \ (3.2 - \text{+infinity})$
- DT104 detected in helva from patient’s kitchen, and in helva bought in a shop
Discussion

- **International networks**
  - Rapex, Enter-Net, personal contacts
- **Helva was the source of most of the Norwegian cases**
- **Cluster in Buskerud county**
  - Turkish community
- **Many cases of salmonellosis AFTER hospitalization**
  - Neonatal infections, post-surgery cases
  - Trigger: Antibiotic treatment?
- **Some cases probably not directly linked to helva, especially native Norwegians**
Acknowledgements

- **Norway:** Philippe Guérin, Trine Stavenes, Bjørn-Arne Lindstedt, A. Moradi-Soureh, David Katzenelson, Sanaz Amirabedin, Nevzat Altan and Preben Aavitsland

- **Sweden:** Yvonne Andersson

- **Australia:** Kerry-Ann O’Grady

- **Germany:** Stefan Brockman

- **England:** Chris Little

- **Turkey:** Duygu Esel

- **Norwegian Meat Research Centre**