The need to develop control measures for salmonellosis to ensure safety of home-produced eggs, Poland 2011: Lessons from an outbreak

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Salmonella enteritidis and eggs: A persisting problem in Poland

✓ Infection linked to poultry, eggs or pork.
✓ EU law: Table eggs from private farms excluded in Salmonella screening processes.
✓ Proportion of human S. Enteritidis linked to home-produced eggs increased from 76% (2004) and 82% (2010) in Poland.

7 September 2011 → Outbreak alert: 5 cases of gastroenteritis in Warsaw suburbs.

Objective: Document the need for control measures for Salmonellosis linked to home produced eggs.

Methods: Retrospective cohort study among christening attendees from 2 provinces

Data collection: List of attendees from hosts, data collected on: demographics, symptoms, food consumption and potential risk factors.

Probable case: Party attendee within 72 hours developed → Diarrhoea OR Vomiting OR Stomach cramps OR Temperature >39C.

Confirmed case: As above with positive stool result for S. Enteritidis.

Analytical study: Food specific attack rates (ARs) and multivariable analysis (aORs).

Laboratory investigation:
✓ Stool specimens tested for viruses (adenovirus, rotavirus and norovirus) and Salmonella
✓ Eggs from hosts private flock tested for Salmonella.
✓ Phage typing: Salmonella strains.

Environmental investigation:
✓ Food preparation/ serving, learn origin of food products and identify food handlers.

Results: Angel cake made from unscreened home produced eggs likely source

Cohort: 48 people, 26 ill
✓ Median age: 36 years (range: 4-88); 33 (51%) female
✓ Symptoms: diarrhea (96%), high temperature (39°C) (>80%), vomiting (>65%).

✓ 3 individuals hospitalized.
✓ First case: 18:30PM on 4 September, peak midnight- noon on 5 September. No cases reported after 7 September.

Figure 1: Cases of gastro-intestinal illness (N= 24) by time of onset, 4-7 September 2011, Warsaw, Poland

Analytical cohort study: Angel cake associated with illness (aOR=192, 95% CI: 7-5200).

Laboratory results:
✓ S. Enteritidis isolated in: 11/17 people and 2/4 eggs.
✓ S. Enteritidis PT21c found in: 4 strains in stool samples and yolk of 2 and shell of 1 egg.

Environmental results:
✓ Angel cake prepared using unscreened raw eggs. Cakes served: room temperature, all together with 1 knife.
✓ Origin of infected eggs: hosts laying hens (n=17). Laying hens likely to have infected pigeons (n=40).

Conclusions and recommendations: active engagement of public is key!

✓ Unscreened eggs from private flocks of laying hens that are currently missed by regulations should not be overlooked.
✓ Actively engage general public through food safety campaigns, promoting:
  ✓ Usage of screened eggs.
  ✓ Refrigeration of items containing raw eggs.
  ✓ Serving items containing raw eggs seperately.