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

Anna Zielicka-Hardy (1,2), D. Zarowna (3), J. Szych (4), G. Madajczak (4), M. Sadkowska-Todys(2)
(1) European Programme for Intervention Epidemiology Training (EPIET), ECDC, Sweden
(2)Department of Epidemiology, National Institute of Public Health-National Institute of Hygiene, Poland
(3) Department of Epidemiology, District Sanitary Station in Otwock, Poland
(4)Department of Bacteriology, National Institute of Public Health-National Institute of Hygiene, Poland

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 (39C) (>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.

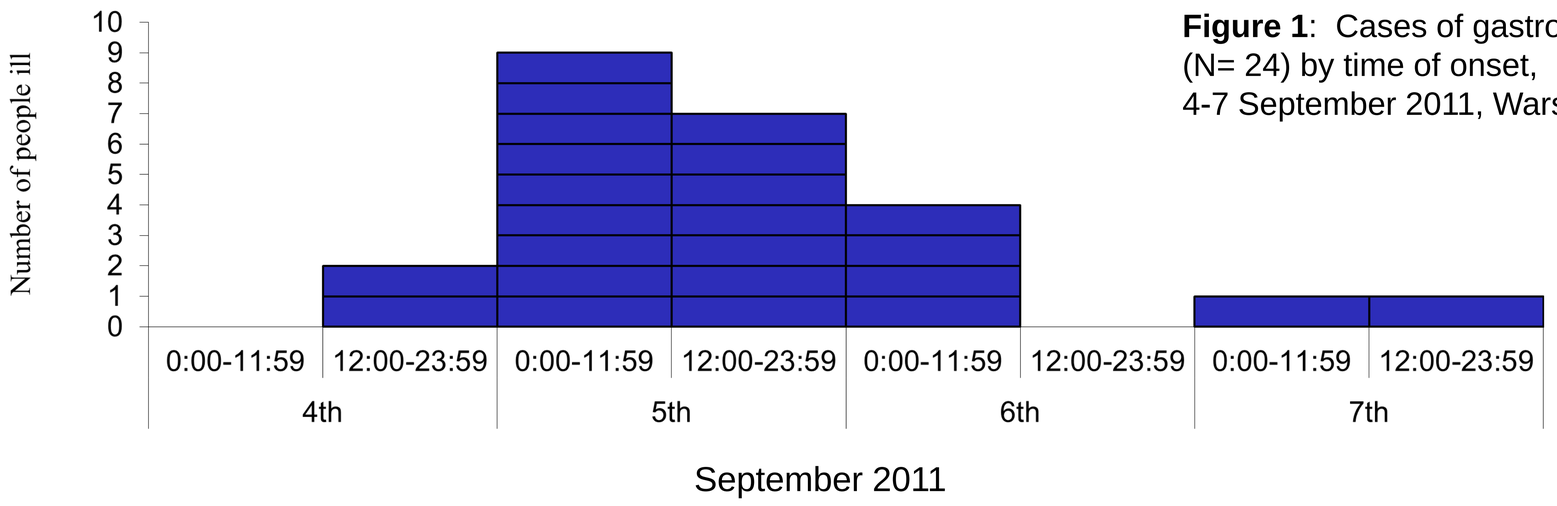

Figure 1: Cases of gastro-intestinal illness (N= 24) by time of onset, 4-7 September 2011, Warsaw, Poland

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).

Control measures: All laying hens and symptomatic pigeons culled.

Limitations: Among untested additional asymptomatically infected people? Lack of identification → understimate strength of association.

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.