Salmonellosis at Elementary Schools Associated with Dissection of Owl Pellets

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First Reports of Illness

May 22, 2001

- Two physician reports
  - Children with acute febrile gastroenteritis
  - Bloody stools
  - Stool cultures: 1 pending
    (+) *Salmonella*
  - Attend same elementary school

- School nurse report
  - High absenteeism rate
Outbreak Investigation
Andersen Elementary School

- **Case - Control Study**
  - 58% (205/352) students interviewed
    - Two week history
      - school lunch
      - school activities
    - Food service evaluated
  - Interventions
    - Exclusion policy enforced
    - Self-service food bar closed
    - Parent information letters
Case Definition

- Elementary school student with diarrhea (3 stools in 24 hours) and fever with onset on or after May 14
Primary Attack Rates
Elementary School

Grade
K 1st 2nd 3rd 4th 5th 6th Faculty

Percent

0 10 20 30 40 50 60

K: 20%, 1st: 50%, 2nd: 30%, 3rd: 25%, 4th: 5%, 5th: 20%, 6th: 0%, Faculty: 0%
Investigation Results

- 39 cases
  - 27 culture confirmed S. Typhimurium
  - 26 of 27 isolates pulse-field gel electrophoresis (PFGE) subtype TM353
- Food handlers’ stool cultures - negative
Salmonellosis Cases at Andersen Elementary by Illness Onset Date, May 2001
Elementary School Activities Associated with Illness

Science Club

11 of 39 cases vs. 1 of 98 controls
Odds ratio, 38.0; 95% CI, 5 - 308; p < 0.001

Adventure Club

25 of 39 cases vs. 19 of 98 controls
Odds ratio, 7.0; 95% CI, 3 - 17; p < 0.001
Implicated School Activities

Adventure Club
- After school care
- 72 students (K – 5)
- Lunchroom

Science Club
- Sixteen 1st – 3rd grade students
- After school
- Lunchroom
Salmonellosis Cases at Andersen Elementary by Illness Onset Date, May 2001

![Bar chart showing the number of salmonellosis cases by date. The chart indicates a peak on May 20, with a notable increase around May 19. A note is placed near May 19, mentioning "Science Club met."
Science Club  
May 16, 2001

Raptor Program

- Dissected owl pellets
- Pellets: Regurgitated indigestible balls of fur, feathers and bones of owl prey.
Owl Pellet Dissection

- Directly on lunchroom dining table
- Hand washing not encouraged
- Table not sanitized following Science Club
- Table used by Adventure Club kids for snack
- Table used following day for school lunch
Environmental Specimens
Local Nature Center

Barred owl
- Pellets
- Feces

Owl feed
- Chicks
- Mice
Second Outbreak
Rutherford Elementary School

- Science Club, May 24, 2001
  - Fifteen 1st and 2nd grade students
  - Science room
  - 9 of 15 dissected owl pellets

- 7 of 9 students ill
  - 6 confirmed S. Typhimurium PFGE TM353
S. Typhimurium TM353 isolated from:

- Owl pellets
- Owl feces (4 months)
- Frozen chicks (4 of 4)
- 32 of 33 Children’s stool specimens
Salmonellosis and Owl Pellets
Mode of Transmission
Recommendations

Separate areas should be designated for school curricula and functions where animal contact is anticipated (i.e., these activities should not occur in food service areas).
Recommendations

- As with all animal-derived materials, handling of owl pellets should be followed by sanitation of contact surfaces and thorough hand washing.

- Sterilized owl pellets for use in educational activities can be obtained from commercial sources.
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