



Salmonellosis at Elementary Schools Associated with Dissection of Owl Pellets

Fred Anderson

**Washington Co. Dept.
of Public Health &
Environment**

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

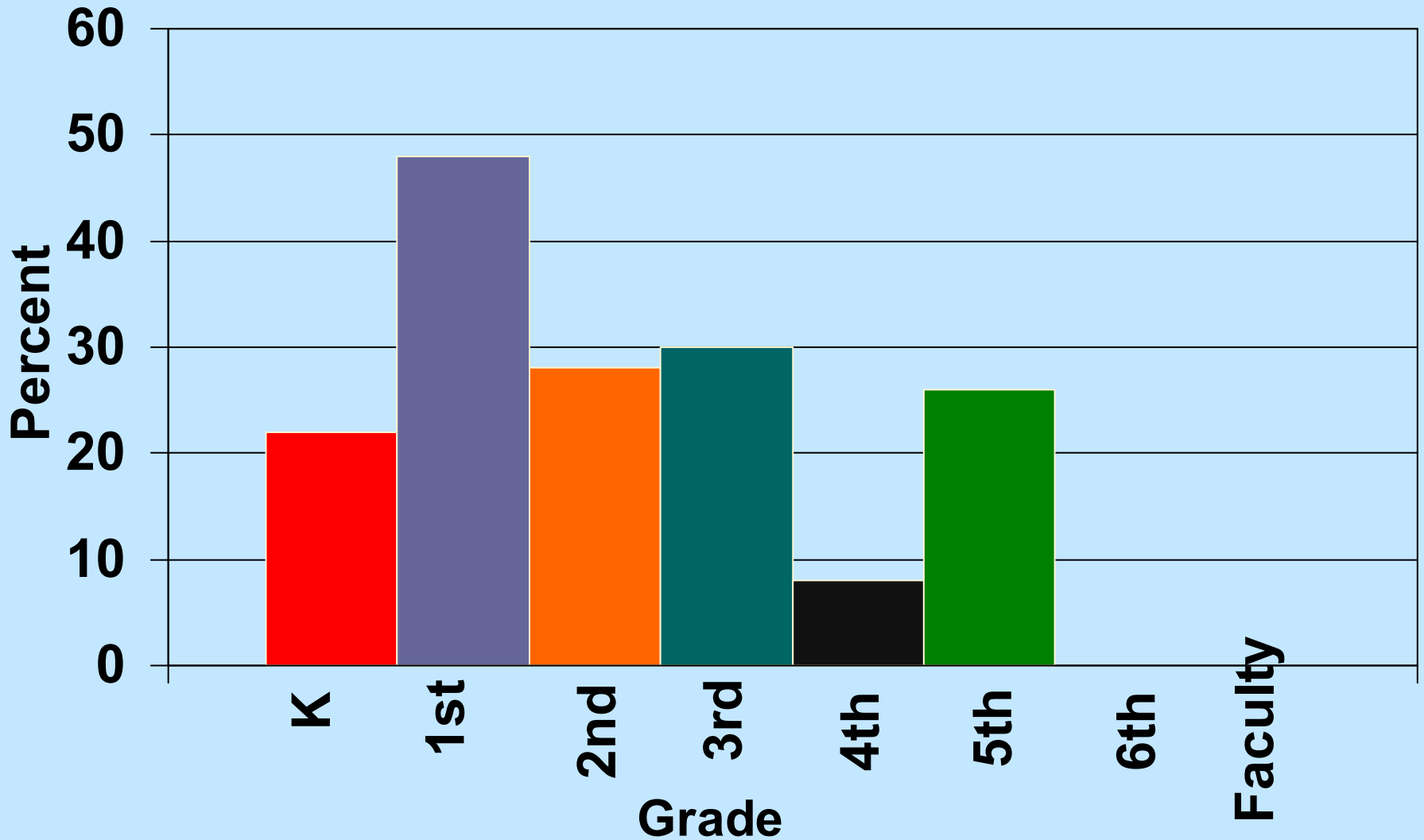
Outbreak Investigation Andersen Elementary School

- **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**

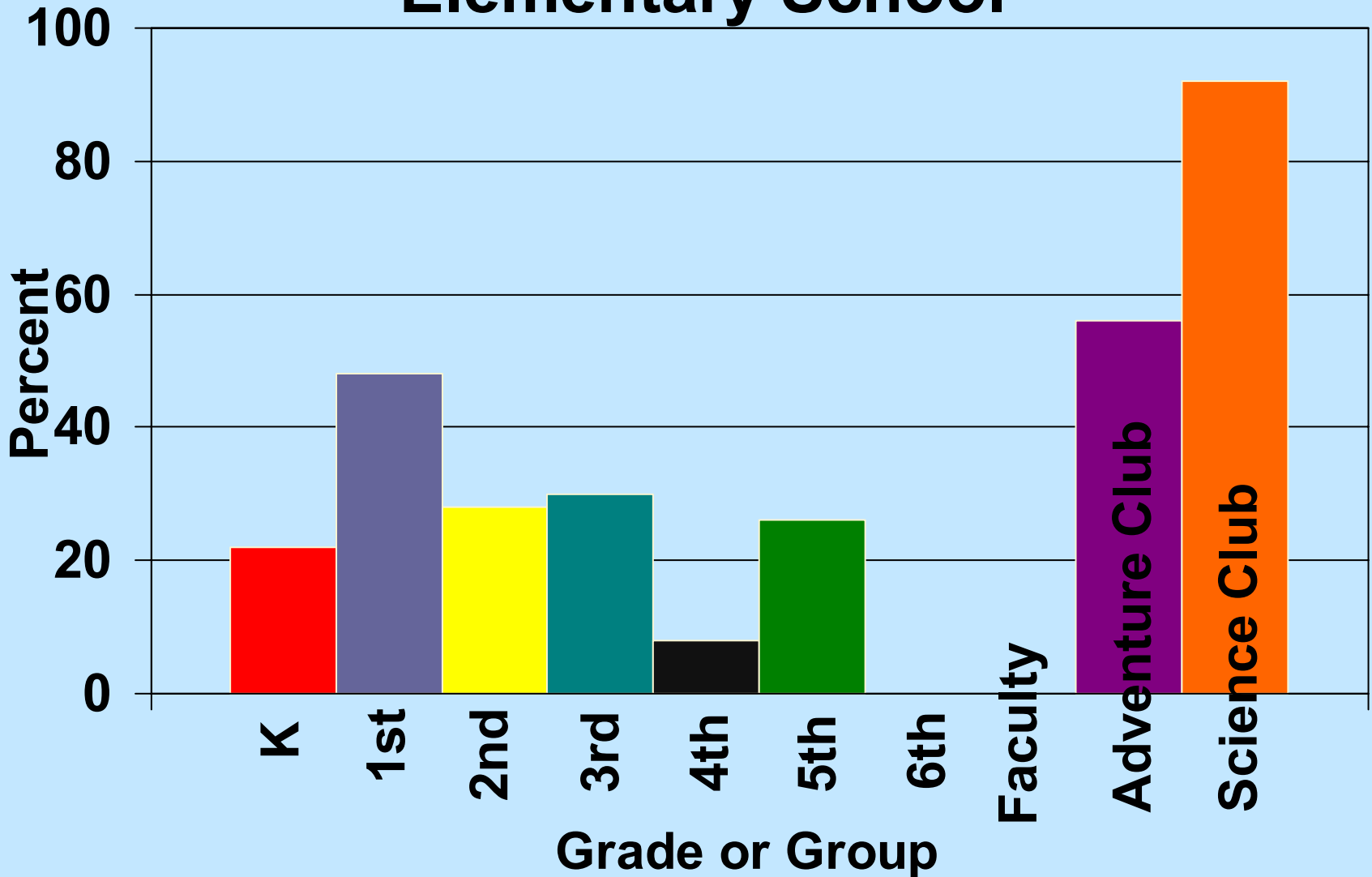
Case Definition

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

Primary Attack Rates Elementary School



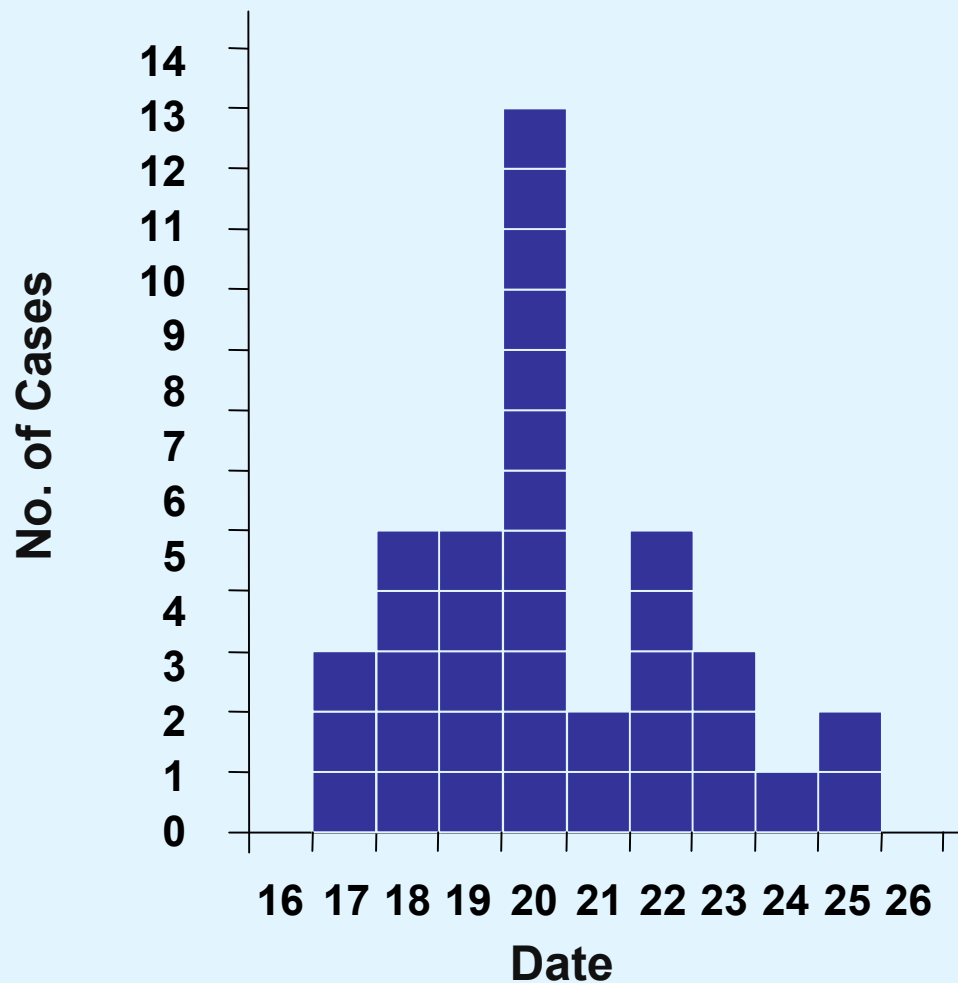
Primary Attack Rates Elementary School



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

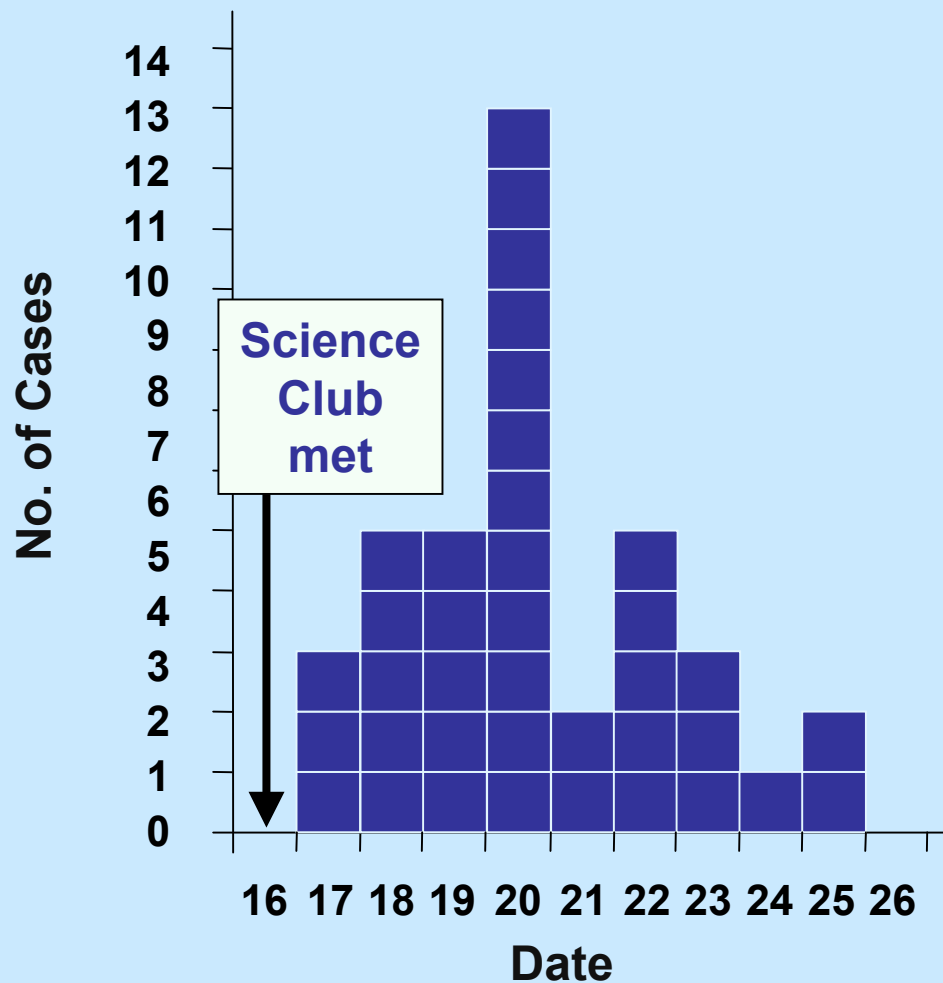
- After school care
- 72 students (K – 5)
- Lunchroom

Science Club

- Sixteen 1st – 3rd grade students
- After school
- Lunchroom



Salmonellosis Cases at Andersen Elementary by Illness Onset Date, May 2001





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

Who, me?

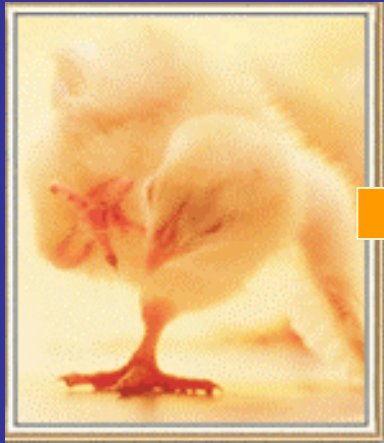


***S. Typhimurium* TM353
isolated from:**

- 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.**



Acknowledgements



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