

# School-related Foodborne Disease Outbreaks in the United States

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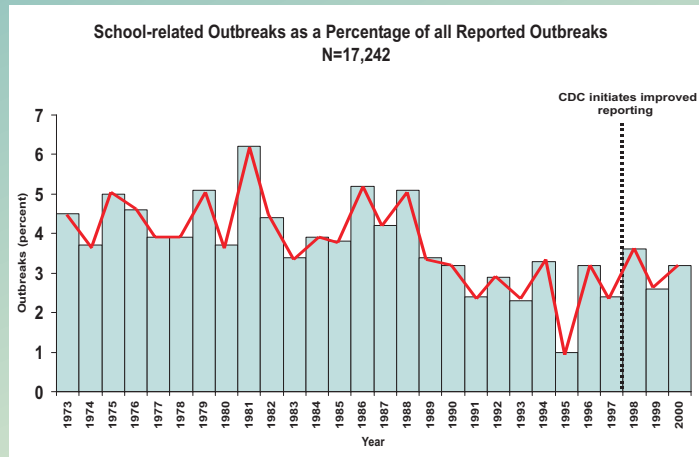
## Background

- Each year millions of American children eat meals prepared at school
- In fiscal year 2001 more than 24.5 million children each day ate lunch provided by the National School Lunch Program
  - ▶ The National School Lunch Program is a federally assisted meal program that provides nutritionally balanced, low-cost or free lunches to over 99,000 schools and child care institutions
- Recent media reports suggest an increased risk of foodborne illness associated with meals prepared at school

## Methods

- Reviewed data on foodborne outbreaks reported through the National Foodborne Outbreak Reporting System (FORS) from 1973-1997 and 1998-2000
  - ▶ Outbreak data are contained in two datasets due to revisions initiated in 1998 to CDC's outbreak reporting forms and policies
  - ▶ The enhanced surveillance implemented in 1998 resulted in an increase in reported outbreaks from an average of approximately 530 per year to over 1,300 per year
- Information about place of food preparation and consumption was provided by the state/agency that reported the outbreak
- A school-related outbreak was defined as illness in two or more persons reported to be associated with consumption of common food prepared in that school
- All analyses were conducted using SAS 8.2

## Results



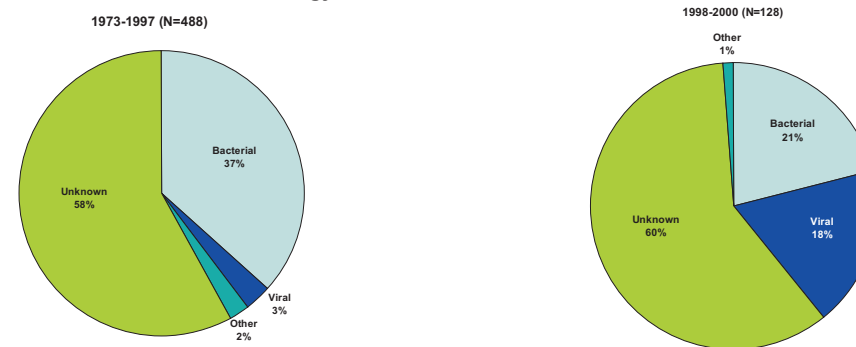
### 1973-1997

- 13,173 foodborne outbreaks were reported ~ average of 527 outbreaks per year
  - ▶ 488 (3.7%) of all foodborne outbreaks involved food prepared in schools and resulted in:
    - \* 41,590 (10.5%) of all illnesses ~ 82 illnesses/outbreak
    - \* 1340 (7.1%) of all hospitalizations
    - \* 2 (.9%) of all deaths
  - ▶ A food item was implicated in 273 (56%) school related outbreaks
  - ▶ An etiology was indicated for 205 (42%) school related outbreaks

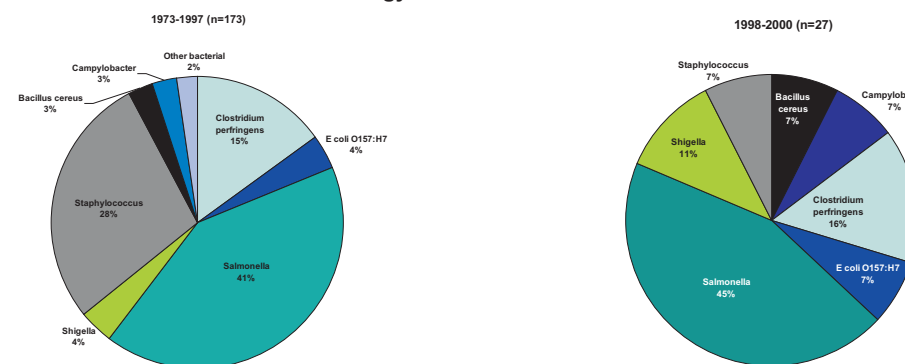
### 1998-2000

- 4069 foodborne outbreaks were reported ~ average of 1356 outbreaks per year
  - ▶ 128 (3%) of all foodborne outbreaks involved food prepared in schools and resulted in:
    - \* 7993 (10%) of all illnesses ~ 62 illnesses/outbreak
    - \* 119 (6%) of all hospitalizations
    - \* 0 of all deaths
  - ▶ A food item was implicated in 44 (34%) school-related outbreaks
  - ▶ An etiology was indicated for 51 (40%) school related outbreaks

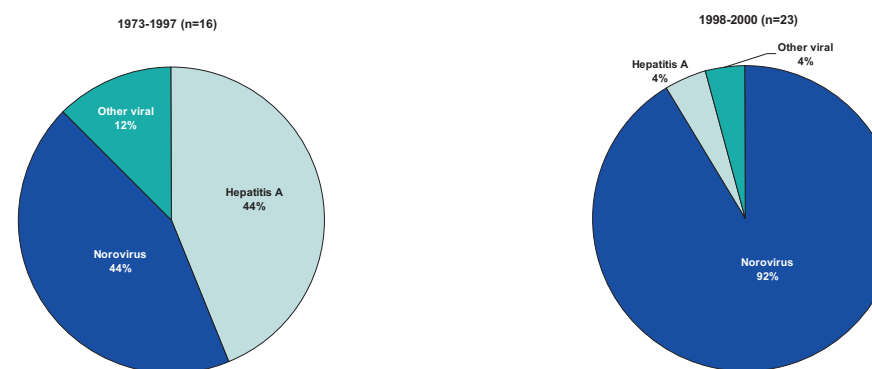
### Etiology of School-related Outbreaks



### Bacterial Etiology of School-related Outbreaks



### Viral Etiology of School-related Outbreaks



## Conclusions

- The numbers of total outbreaks and outbreaks related to foods prepared at schools have increased since 1998 due to increased surveillance
- However, neither the percent of all outbreaks nor the percent of outbreak associated illnesses have increased since 1998
- Salmonella and norovirus are leading causes of school-related outbreaks
- Efforts to ensure the safe production, storage, and preparation of foods in schools should remain a priority
- Improved investigations to detect food vehicles in outbreaks are needed
- Further studies should address specific food items identified during outbreaks and preventive measures needed to preclude these outbreaks

## Limitations

- Changes in data collection and acquisition initiated in 1998 make it difficult to directly compare data from 1973-1997 with data from 1998-2000.
- Limited definition of school outbreaks
  - ▶ Excludes school outbreaks attributable to foods prepared outside the school (ie. foods prepared at a factory or restaurant and consumed in the school)
- We have no information about outbreaks that were not reported to CDC

