

# CDC's Foodborne Outbreak Reporting System

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# Foodborne outbreak surveillance

- Most outbreaks detected, investigated and controlled by local and state health departments
  
- CDC collects reports of outbreaks investigated
  - Reporting is voluntary and incomplete
  - Definition of an outbreak:
    - 2 or more cases of a similar illness resulting from the ingestion of a common food
  - Data collected: # of cases, implicated food, etiology
  - Received reports of 400-600/year before 1998

# Evolution of FoodBorne Outbreak Reporting System

1973

1998

2000

2005

2006

2007

pFORS:  
Paper reports  
Sent to CDC

eFORS  
v1.0: Web-  
based  
reporting

aFORS:  
analysis tool  
built

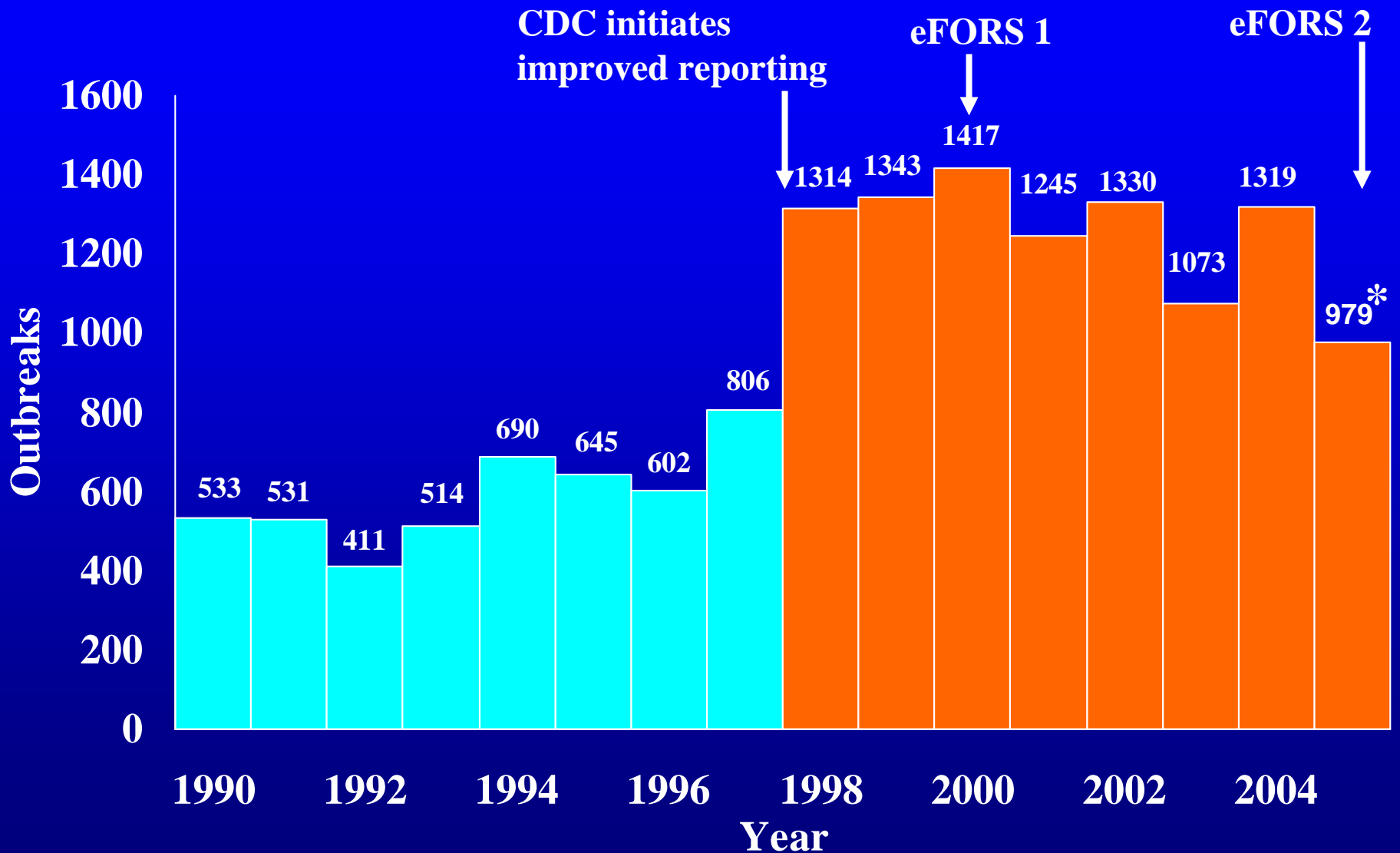
ORS begins  
development

Form 52.13

Formal data close  
out with states

eFORS v2.0  
launched:  
web-based  
data  
extraction

# Foodborne Outbreak Reports




\* Preliminary data.

# pFORS

- Paper-based reporting starting in 1973
- Manual data entry at CDC, often delayed
- Large flat-file database
- Variables with multiple entries (i.e., multiple vehicles in an outbreak) entered as first listed or continuous string
- Limited access by states
- Formal data close out with states 1998

# Foodborne Outbreak Surveillance

	<b>Electronic Foodborne Outbreak Reporting System</b>	<b>Investigation of a Foodborne Outbreak</b>	<b>CDC Use Only</b> _____ _____	
	This form is used to report foodborne disease outbreak investigations to CDC. It is also used to report <i>Salmonella</i> Enteritidis and <i>E. coli</i> O157:H7 outbreak investigations involving any mode of transmission. A foodborne outbreak is defined as the occurrence of two or more cases of a similar illness resulting from the ingestion of a common food in the United States. This form has 6 parts. Part 1 asks for the minimum or basic information needed and must be completed for the investigation to be counted in the CDC annual summary. Part 2 asks for additional information for any foodborne outbreak, while Parts 3 - 6 ask for information concerning specific vehicles or etiologies. Please complete as much of all parts as possible.		<b>State Use Only</b> _____ _____	
<b>Part 1: Basic Information</b>				
<b>1. Report Type</b> A. <input type="checkbox"/> Please check if this a final report  B. <input type="checkbox"/> Please check if data does not support a FOODBORNE outbreak	<b>2. Number of Cases</b>  Lab-confirmed cases _____ (A) Including _____ secondary cases  Probable cases _____ (B) Including _____ secondary cases  Estimated total ill _____ (If greater than sum A + B)	<b>3. Dates</b> Please enter as many dates as possible  Date first case became ill ____/____/____ Month Day Year  Date last case became ill ____/____/____ Month Day Year  Date first known exposure ____/____/____ Month Day Year  Date last known exposure ____/____/____ Month Day Year	<b>4. Location of Exposure</b>  Reporting state _____  If multiple states involved: <input type="checkbox"/> Exposure occurred in multiple states <input type="checkbox"/> Exposure occurred in single state, but cases resided in multiple states Other states: _____ _____  Reporting county _____  If multiple counties involved: <input type="checkbox"/> Exposure occurred in multiple counties <input type="checkbox"/> Exposure occurred in one county, but cases resided in multiple counties Other counties: _____ _____	
<b>5. Approximate Percentage of Cases in Each Age Group</b>  <1 year _____%    20-49 yrs _____% 1-4 yrs _____%    ≥50 yrs _____% 5-19 yrs _____%    Unknown _____%	<b>6. Sex</b> (Estimated percent of the total cases)  Male _____% Female _____%	<b>7. Investigation Methods</b> (Check all that apply) <input type="checkbox"/> Interviews of only cases <input type="checkbox"/> Case-control study <input type="checkbox"/> Food preparation review <input type="checkbox"/> Cohort study <input type="checkbox"/> Investigation at factory or production plant <input type="checkbox"/> Investigation at original source (farm, marine estuary, etc.) <input type="checkbox"/> Food product traceback <input type="checkbox"/> Environment / food sample cultures		
<b>8. Implicated Food(s):</b> (Please provide known information)				
Name of Food	Main Ingredient(s)	Contaminated Ingredient(s)	Reason(s) Suspected (See codes just below)	Method of Preparation (See attached codes)
e.g., Lasagna	e.g., Pasta, sauce, eggs, beef	e.g., Eggs	e.g., 4	e.g., M1
1)				
2)				
3)				
<input type="checkbox"/> Food vehicle undetermined				
Reason Suspected (List above all that apply) 1 - Statistical evidence from epidemiological investigation    4 - Other data (e.g., same phage type found on farm that supplied eggs) 2 - Laboratory evidence (e.g., identification of agent in food)    5 - Specific evidence lacking but prior experience makes it likely source 3 - Compelling supportive information				

# eFORS v. 1

- **Web-based reporting**
- **Links to help files (i.e., pathogen confirmation)**
- **Data available to reporting sites**
- **Data structure- large flat file**
  - **Same issue for fields with multiple values**

## eFORS v. 2

- **Newly designed and developed system**
- **Increased security**
- **Normalized database design with related tables**
- **Incorporated all modes of transmission for STEC and SE**

# eFORS 2.0 Issues

- **Downloading/Analyzing data**
  - **Extracted as XML (need latest version of Access)**
  - **Relational data set**
  - **Lots of caveats to the data that require many sub queries to get accurate counts**
- **Security issues sometime impedes development**

# Outbreak Reporting System ORS

- Reduce the amount of data entry and separate systems
- Incorporates Waterborne, Foodborne, and other enteric outbreak reporting into one system
  - Based on a new form that is being created to base the system from

# Future Directions....

- Assess the feasibility of an import function to decrease the burden of reporting on State
- Automate the generation of standard reports, which would lead to more frequent and rapid feedback to partners
- Web- based access to data???

# Summary

- Serves as central repository for foodborne outbreaks in the United States
- Long history of system with most improvements occurring only recently
- Relies on the participation from state and local public health officials
- Major constraints are lack of resources



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