

Center for Disease Control

# FOODBORNE OUTBREAKS

ANNUAL SUMMARY 1971

ISSUED OCTOBER 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE / PUBLIC HEALTH SERVICE  
Health Services and Mental Health Administration

# PREFACE

Summarized in this report is information received from state and city health departments, Food and Drug Administration, and other pertinent sources. Much of the information is preliminary. It is intended primarily for the use of those with responsibility for disease control activities. Anyone desiring to quote this report should contact the Enteric Diseases Section for confirmation and interpretation.

Contributions to the Status Report are most welcome. Please address to the:

Center for Disease Control  
Attn: Enteric Diseases Section  
Bacterial Diseases Branch  
Epidemiology Program  
Atlanta, Georgia 30333

Center for Disease Control . . . . . David J. Sencer, M.D., Director  
Epidemiology Program . . . . . Philip S. Brachman, M.D., Director  
Bacterial Diseases Branch . . . . . John V. Bennett, M.D., Chief  
Eugene J. Gangarosa, M.D., Deputy Chief  
Enteric Diseases Section . . . . . William H. Barker, M.D., Chief  
Matthew S. Loewenstein, M.D.\*  
Foodborne Outbreaks Surveillance Activity . . . . . Andrew Taylor, Jr., M.D.\*  
Michael H. Merson, M.D.  
Statistical Services . . . . . Stanley M. Martin, M.S.  
Office of Veterinary Public Health Services . . . . . Richard L. Parker, D.V.M.

## *Collaborators*

Laboratory Division . . . . . U. Pentti Kokko, M.D.  
Bacteriology Section . . . . . Louis C. Lamotte, Ph.D.  
Anaerobic Bacteriology Laboratory . . . . . V. R. Dowell, Ph.D.  
Training Program  
Community Services Training Section  
Foodborne Disease Unit . . . . . Frank L. Bryan, Ph.D.

\*Through June 1972

TABLE OF CONTENTS

	<u>PAGE</u>
A. TEXT	1
B. FIGURES	
1. Number of outbreaks of foodborne illness by state, 1971	2
2. Individuals involved in foodborne disease outbreaks (confirmed and unconfirmed), by causative organism, United States, 1971	3
3. Foodborne disease outbreaks (confirmed and unconfirmed), by causative organism, United States, 1971	4
C. TABLES	
1. Initial reporting source of foodborne illness, Annual Summary - 1971	7
2. Outbreaks of foodborne illness by location, 1970 - 1971	7
3a. Confirmed and unconfirmed foodborne outbreaks by bacterial etiology, 1971	8
3b. Confirmed and unconfirmed foodborne outbreaks by nonbacterial etiology, 1971	8
4a. Confirmed and unconfirmed foodborne outbreaks by bacterial etiology, 1970 - 1971	9
4b. Confirmed and unconfirmed foodborne outbreaks by nonbacterial etiology, 1970 - 1971	9
5. Number of persons ill in outbreaks of foodborne illness, by specific etiology (confirmed and unconfirmed), 1970 - 1971	10
6. Median attack rate, range of attack rates, and number of outbreaks of foodborne illness by specific etiology (confirmed and unconfirmed), 1970 - 1971	11
7. Number of persons ill in foodborne disease outbreaks by specific etiology (confirmed and unconfirmed), 1970 - 1971	12
8. Vehicles associated with foodborne illness, by specific etiology (confirmed and unconfirmed), 1970 - 1971	13
9. Place where food was mishandled in foodborne outbreaks reported by specific etiology (confirmed and unconfirmed) 1970 - 1971	14
10. Place of acquisition of foodborne illness by specific etiology (confirmed and unconfirmed) 1970 - 1971	15
11. Monthly occurrence of outbreak of foodborne illness by specific (confirmed and unconfirmed) etiology, 1970 - 1971	16
D. REVISED FOODBORNE OUTBREAKS SURVEILLANCE REPORTING FORM (Revised March 1971)	17
E. EXPLANATION OF LINE LISTING	19
F. LINE LISTING OF FOODBORNE OUTBREAKS REPORTED TO THE CDC, 1971	20

## SECTION A.  FOODBORNE OUTBREAKS

This is the sixth annual summary of foodborne disease outbreaks compiled by the Epidemiology Program, Center for Disease Control (CDC).  These summaries are based on the analysis of data voluntarily transmitted from various sources, including local and state health departments, federal agencies, and other CDC programs.  A foodborne outbreak is defined in these reports as illness caused by ingestion of a pathogenic organism or noxious agent contained in food and affecting two or more persons.  There is one exception; a single case of botulism constitutes an outbreak.  This 1971 Annual Summary compliments and summarizes data included in the previous report, "Foodborne Outbreaks Status Report, January-June 1971".  In addition, tabular comparisons of the 1970 and 1971 data are presented.  Waterborne epidemics, included in the previous foodborne annual reports, are not reported in this 1971 report.  A subsequent review of waterborne epidemics will be issued at a later time.

Food poisoning in the United States is grossly underreported.  In the State of Washington, where foodborne disease surveillance has been developed to a high degree, 57 outbreaks were reported to the CDC in 1971.  Projecting from this figure, the estimated number of outbreaks for the entire United States was about 3,100 in 1971; however, only 320 outbreaks were actually reported to the CDC.  The fact that only 10 percent of the "expected" number of outbreaks were reported for the country serves to emphasize the need for improvement in both surveillance systems and investigations.  In 1971, for the second time in 5 years, the number of reported outbreaks (320) decreased when compared with the number for the previous year (366).  This decline probably does not reflect a decrease in the number of outbreaks of foodborne illness.  Rather, it suggests that foodborne disease surveillance may occupy a position of low priority relative to competing health problems.

Foodborne disease surveillance involves at least three interrelated objectives: disease control, knowledge of disease causation, and administrative guidance.

1. Disease Control: Early identification and withdrawal of contaminated food prevents further spread of an epidemic.  The demonstration of improper food handling procedures during an investigation and subsequent correction of these procedures prevents future outbreaks.  Analysis of laboratory data by serotype for apparently unrelated outbreaks may reveal hitherto unsuspected sources of infection, for example the presence of S. new-brunswick in dry milk products in 1968 (Collins, et al., 1968).<sup>1</sup>
2. Knowledge of Disease Causation: The predominant role of C. perfringens in food poisoning was only first defined in 1951.  Similarly, knowledge of the importance of food poisoning due to V. parahemolyticus in Japan has developed only in the past 10 years and in the United States only in the past 2 years.  Careful investigation and analysis provides information about the causative agent, its source, its reservoirs, and the factors that permit it to cause food poisoning.  Once this information is known, control measures can be developed.
3. Administrative Guidance: Comprehensive and adequate surveillance help allow for rational planning, allocation of budgets, setting of priorities, and institution of training programs for county and state health departments.

1. Collins RN, Treger MD, Goldsby JB, et al: Interstate outbreak of Salmonella newbrunswick infection traced to powdered milk. JAMA 203:838-844, 1968



Figure 2 depicts the major etiologic categories responsible for outbreaks of food poisoning and their relative percents reported to CDC from all sources in 1971. There were a total of 320 outbreaks in 1971 compared with 366 in 1970. Bacterial etiology predictably accounted for the majority of all foodborne outbreaks of known etiology (62.8 percent), followed by chemical food poisoning (9.4 percent). Parasitic and viral agents were incriminated in 2.6 percent of the outbreaks. In 25.3 percent of outbreaks, no etiology could be determined. In Figure 2 the subcategory "Other" under the "Bacterial" heading includes outbreaks attributed to Bacillus cereus, Escherichia coli, groups A and D streptococcus, and Vibrio parahemolyticus.

**Figure 2**  
**FOODBORNE DISEASE OUTBREAKS (CONFIRMED AND UNCONFIRMED), BY CAUSATIVE ORGANISM, UNITED STATES, 1971**

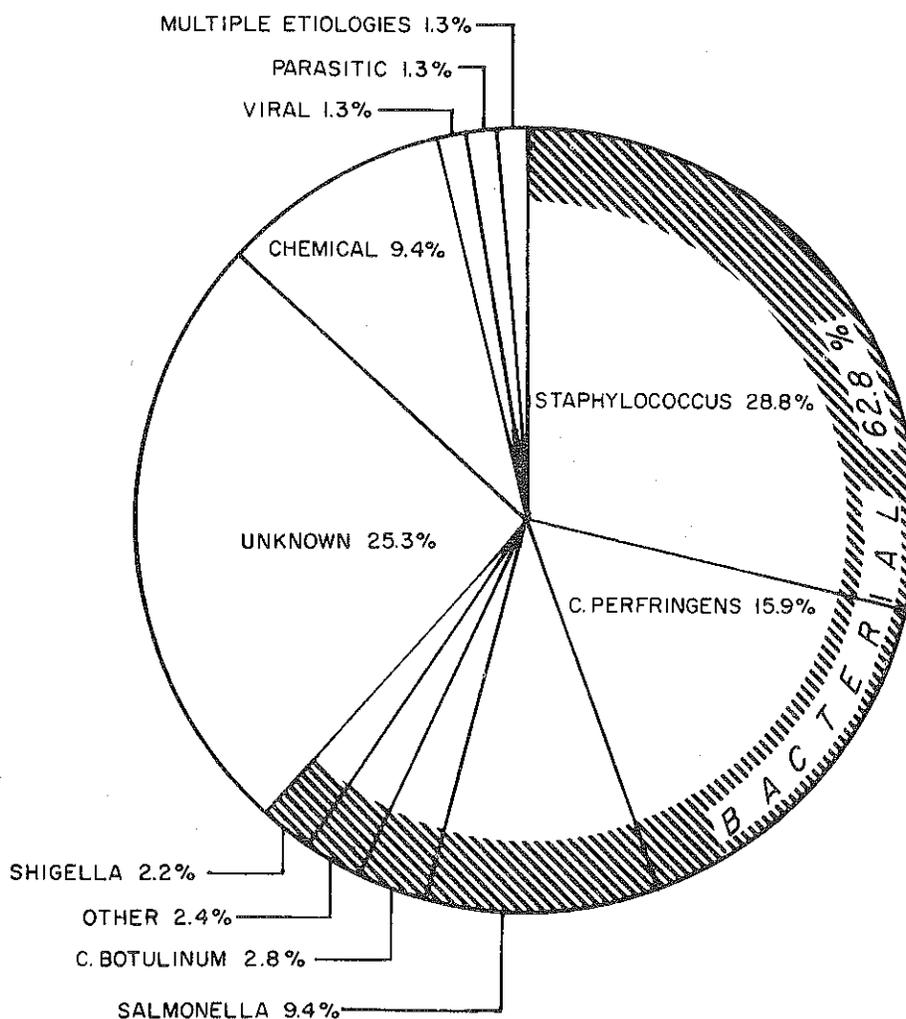


Figure 3 illustrates the relative percents of individuals involved in the major etiologic categories of food poisoning for 1971. A total of 13,453 individuals developed food poisoning in 1971, compared with 23,448 in 1970, and 28,563 in 1969. The 1969 data were biased by one large outbreak of *C. perfringens* involving 13,000 school children. The difference in the 1971 and 1970 data results from 46 fewer reported outbreaks in 1971 and from a decrease in outbreaks involving over 100 persons from 55 in 1970 to 22 in 1971. Over 89 percent of individuals experienced food poisoning of bacterial etiology. In 1971, staphylococcal food poisoning occurred in 38.0 percent of all patients, followed by *C. perfringens* (28.7 percent), shigellosis (6.7 percent), salmonellosis (5.6 percent), and group A streptococcus (3.7 percent, notably in only 1 outbreak). The remaining bacterial etiologies (others in Figure 3) (*B. cereus*, *C. botulinum*, group D streptococcus, *V. parahaemolyticus* and *E. coli*) affected less than 6 percent of all patients. Parasitic, chemical, and viral food poisoning involved only 1.9 percent of all patients. Food poisoning of unknown etiology caused 8.2 percent of the cases.

**Figure 3**  
**INDIVIDUALS INVOLVED IN FOODBORNE**  
**DISEASE OUTBREAKS (CONFIRMED AND**  
**UNCONFIRMED), BY CAUSATIVE ORGANISM,**  
**UNITED STATES, 1971**

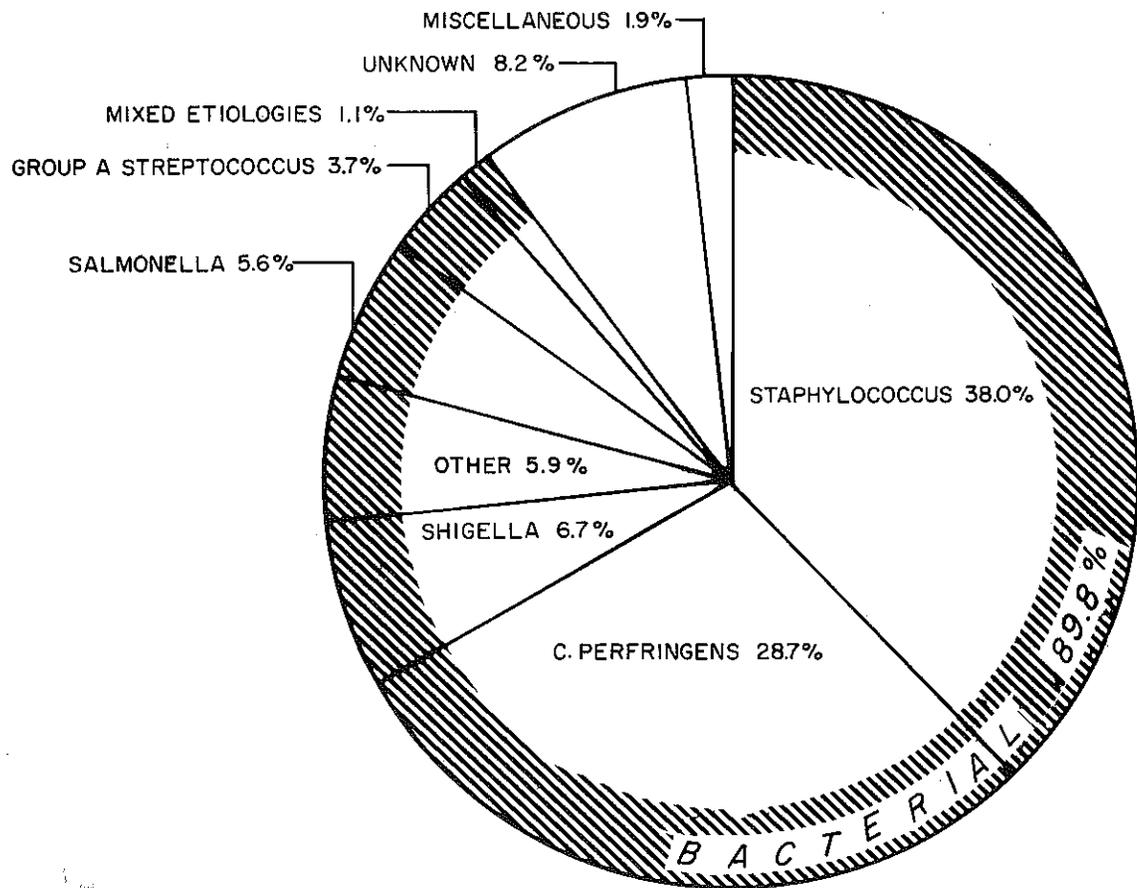


Table 1 lists the sources that initially reported outbreaks to CDC. The category, "Department of Health," includes monthly reports of EIS Officers at state and local health departments. Of the 320 outbreaks recorded for 1971, 291 (91 percent) emanated from state, local, or territorial health departments, 22 (7 percent) were reported directly from other federal agencies such as Food and Drug Administration, United States Department of Agriculture, and United States Armed Forces. For the second time since 1966, the number of reported outbreaks failed to increase over the number for the previous year. The decline from 364 reports in 1970 to 320 in 1971 reflects a slight decrease in reporting from all sources except the United States Department of Agriculture.

Table 2 shows the number of outbreaks reported for 1970 and 1971. The two health departments contributing the most reports for 1971 were Washington State (18 percent), and California (10 percent). In 1971, four state health departments did not report, compared to 5 in 1970. It is of interest that Wyoming is the only state that reported no outbreaks of foodborne illness in either 1970 or 1971. The apparent decrease in outbreaks from New York City is also notable. These figures probably do not indicate the prevalence of foodborne disease in the respective areas, but rather may reflect the interest of the various health departments in local investigation and national reporting.

Table 3 (A & B) records the number and percentage of confirmed and unconfirmed outbreaks and cases by etiology. Bacterial diseases accounted for almost 63 percent of the outbreaks and almost 90 percent of total cases. In Table 4 the 1970 and 1971 data are compared. In 1971, C. perfringens accounted for almost 16 percent of all outbreaks and almost 29 percent of all patients; in 1970, C. perfringens was implicated in 15 percent of food poisoning outbreaks and was responsible for nearly 30 percent of all patients. Thus the relative number of foodborne outbreaks and total cases related to C. perfringens remained basically unchanged (though the total number of cases substantially decreased). The high number of unconfirmed C. perfringens outbreaks (94 percent of all C. perfringens outbreaks) suggests the need for improvement in anaerobic culturing. In 1971, salmonella caused 9 percent of all food poisoning outbreaks and 6 percent of all cases. This represents a decrease in salmonellosis cases when compared with the 1970 data, 13 percent of outbreaks and 20 percent of cases. The most common type of food poisoning in 1971 was staphylococcal gastroenteritis accounting for almost 29 percent of all outbreaks and 38 percent of all cases. In 1970, staphylococci were implicated in 27.5 percent of outbreaks and 20 percent of all cases. Thus, there were relatively more cases of staphylococcal etiology in 1971, though the relative number of outbreaks remained unchanged. For 1971, the above three etiologies were responsible for 54 percent of all foodborne outbreaks and 72 percent of all ill individuals; in 1970 the corresponding figures were 55 percent and 70 percent. Considering all etiologies, 13,453 persons suffered from food poisoning in 1970 compared with 23,448 in 1970.\*

Table 5 lists the median and range of the number of persons involved in all of the confirmed and unconfirmed outbreaks for 1970 and 1971. In general, food poisoning outbreaks of B. cereus, C. botulinum, staphylococcus, parasitic, viral, chemical, and unknown etiology involved small groups of persons (<10) both years. The median number of persons involved in foodborne outbreaks of staphylococcal, C. perfringens and salmonella origin remained about the same over the past 2 years, while the size of E. coli and shigella outbreaks has increased in 1971. Of interest, the median number of persons, 7, involved in foodborne outbreaks considering all etiologies has remained relatively constant over the past 3 years.

Table 6 lists the median attack rate and range of attack rates by specific etiology. Attack rates were exceedingly high (>80 percent) for C. botulinum and most chemical food poisonings, moderately high (40-80 percent) for C. perfringens, E. coli,

\*Of the 23,448 cases in 1970, 262 were related to waterborne outbreaks.

salmonella, shigella, staphylococcus, and unknown etiology food poisoning, and low (<40 percent) for V. parahemolyticus and viral food poisoning. In some etiologic categories the number of outbreaks was too small to draw reliable conclusion.

Table 7 categorizes the total of confirmed and unconfirmed outbreaks by the size of the outbreak and by etiology. It is apparent the C. perfringens, salmonella, shigella, and staphylococcal food poisoning sometimes involve large groups of people; C. botulinum, parasitic, viral, and chemical food poisoning are usually prevalent in small groups. Over 70 percent of outbreaks of unknown etiology involved groups of 10 or less.

Table 8 lists the vehicles of infection by specific etiology. The three most commonly incriminated vehicles in decreasing order of frequency were pork (including ham, salami), beef, and fowl. Other vehicles of importance were fish, bakery products, vegetables, and fruits. Pork tended to be associated with staphylococcal food poisoning and beef with C. perfringens food poisoning. No particular food was widely associated with salmonella food poisoning. Similar relationships were apparent in the 1970 data except that salmonella in 1970 was more common in fowl. Bakery products had a 50 percent decrease in frequency between 1970 and 1971.

Table 9 delineates the various places where improper food handling occurred and which allowed the reported outbreaks to materialize. The heading, "Food Processing Establishments," refers to the place or site of improper food handling in preparation for marketing. The heading, "Food Service Establishments," refers to the place or site of improper food handling that occurs during food processing in commercial establishments for public consumption, in contradistinction to the heading, "Home," which refers to mishandled food in the home itself. The column, "Unknown-Unspecified," includes those outbreaks reported with insufficient information, precluding specific classification. In 1971, 36 percent of the vehicles were improperly handled during processing in a commercial eating place, while only 8 percent were improperly handled in preparation for marketing. The homemaker was culpable 17.5 percent of the time. Although, the site of improper food handling could not be determined 39.5 percent of the time in 1971, this figure represents an improvement compared with 1970 when 50 percent of the time the site of improper handling could not be determined.

Table 10 lists the place where the suspect food was ingested according to specific etiology. It is apparent that the majority of foodborne outbreaks, 66 percent, occurred in homes and restaurants; these two locations account for 47 percent of those who became ill with food poisoning. Illness due to C. botulinum, T. spiralis, and chemical poisonings tended to be caused by foods eaten at home while those due to C. perfringens, staphylococcus and salmonella were common in both public facilities and at home.

Table 11 lists the monthly incidence of all outbreaks by specific etiology. An outbreak is assigned to a particular month according to the date of onset of the first case. Outbreaks of food poisoning are distributed over the calendar year; as in 1970, there may be a slight propensity for more cases to occur during the months May through August.

Table 1

Initial Reporting Source of Foodborne Illness  
Annual Summary - 1971

<u>Number of Reports</u>	<u>Reporters</u>	
291	DH	- Department of health, state or local; includes reports of EIS Officers located at state and local health departments
14	FDA	- Food and Drug Administration
7	MMWR	- Morbidity and Mortality Weekly Report, CDC
2	AF	- Armed Forces installation and U.S. Public Health Service, Bureau of Indian Affairs
6	USDA	- United States Department of Agriculture
<hr/> 320	Total	

Table 2

Outbreaks of Foodborne Illness by Location, 1970 - 1971\*

	<u>1970</u>	<u>1971</u>		<u>1970</u>	<u>1971</u>
Alabama	0	2	Missouri	3	2
Alaska	2	5	Montana	1	2
Arizona	2	1	Nebraska	2	3
Arkansas	2	3	Nevada	1	1
California	26	31	New Hampshire	1	2
Colorado	1	1	New Jersey	8	14
Connecticut	3	2	New Mexico	5	9
Delaware	1	2	New York City	43	16
District of Columbia	0	1	New York State	6	9
Florida	8	5	North Carolina	5	2
Georgia	12	11	North Dakota	1	1
Hawaii	3	10	Ohio	2	8
Idaho	4	3	Oklahoma	2	6
Illinois	7	5	Oregon	3	0
Indiana	3	1	Pennsylvania	13	14
Iowa	1	4	Puerto Rico	3	4
Kansas	2	4	Rhode Island	1	1
Kentucky	2	3	South Carolina	4	15
Louisiana	7	3	South Dakota	0	1
Maine	0	1	Tennessee	8	3
Maryland	4	6	Texas	1	3
Massachusetts	3	2	Utah	3	4
Michigan	3	14	Vermont	0	1
Minnesota	11	6	Virginia	6	2
Mississippi	0	1	Washington	68	57
<u>Other</u>			West Virginia	2	0
Virgin Islands	1	0	Wisconsin	4	8
Guam and Trust Territories	1	2	Wyoming	0	0
			Others*	0	3
			1970 Total	305	
			1971 Total	320	

\* Annual Summaries, 1970 - 1971

\*\* Others include 2 unknown and 1 multiple state outbreaks

Table 3a

Confirmed and Unconfirmed Foodborne Outbreaks by Bacterial Etiology, 1971

	Outbreaks			Patients		
	Confirmed #	%**	Total #	Unconfirmed #	%†	Total #
<i>B. cereus</i>	0	0	1	0	0	3
<i>C. botulinum</i>	6	6.4	3	15	0.4	21
<i>C. perfringens</i>	3	3.2	48	106	2.7	3,856
<i>E. coli</i>	1	1.1	2	387	9.7	8
<i>Salmonella</i>	28	29.8	2	729	18.3	31
<i>Shigella</i>	6	6.4	1	806	20.3	100
<i>Staphylococcus</i>	26	27.7	66	930	23.4	4,185
Group A streptococcus	1	1.1	0	498	12.5	0
Group D streptococcus	0	0	1	0	0	3
<i>V. parahaemolyticus</i>	3	3.2	0	370	9.3	0
Multiple etiologies	0	0	4	0	0	153
Subtotal	74	78.7	127	3,841	96.6	8,239

Table 3b

Confirmed and Unconfirmed Foodborne Outbreaks by Nonbacterial Etiology, 1971

	Outbreaks			Patients		
	Confirmed #	%**	Total #	Unconfirmed #	%†	Total #
<u>PARASITIC</u>						
<i>Trichinella spiralis</i>	4	4.3	0	18	0.5	0
<u>VIRAL</u>						
Infectious hepatitis	3	3.2	1	10	0.3	12
<u>CHEMICAL</u>						
Chinese restaurant syndrome (MSG)	0	0	1	0	0	7
Fish toxin	2	2.1	1	7	0.2	34
Heavy metal	4	4.3	9	19	0.5	53
Other chemical	7	7.4	6	83	2.1	27
UNKNOWN	0	0	81	0	0	1,103
<u>BACTERIAL SUBTOTAL</u>						
(From Table 3a)	74	78.7	127	3,841	96.6	8,239
TOTAL (Bacterial and nonbacterial)	94	100.1	226	3,978	100.0	9,475
			320			100.0
						13,453
						89.8
						100.0

\*Percent of total confirmed outbreaks by specific etiology.

†Percent of total of unconfirmed outbreaks by specific etiology.

‡Percent of total outbreaks.

\*Percent of persons ill in total confirmed outbreaks.

†Percent of persons ill in total of unconfirmed outbreaks.

‡Percent of total persons ill.

Table 4a

## Confirmed and Unconfirmed Foodborne Outbreaks by Bacterial Etiology, 1970 - 1971\*

	1970				1971			
	Outbreaks		Patients		Outbreaks		Patients	
	#	% <sup>@</sup>	#	% <sup>#</sup>	#	% <sup>@</sup>	#	% <sup>#</sup>
<u>B. cereus</u>	3	1.0	49	0.2	1	0.3	3	0
<u>C. botulinum</u>	7	1.9	14	0	9	2.8	21	0.2
<u>C. perfringens</u>	54	14.7	6,952	29.7	51	15.9	3,856	28.7
<u>E. coli</u>	7	1.9	1,297	5.5	2	0.6	395	2.9
Salmonella	48	13.1	4,747	20.4	30	9.4	760	5.6
Shigella	8	2.2	1,668	7.1	7	2.2	906	6.7
Staphylococcus	102	27.5	4,699	119.8	92	28.8	5,115	38.0
Group A streptococcus	0	0	0	0	1	0.3	498	3.7
Group D streptococcus	1	0.3	23	0.1	1	0.3	3	0
<u>Vibrio parahemolyticus</u>	2	0.5	168	0.7	3	0.9	370	2.8
Multiple etiologies	0	0	0	0	4	1.3	153	1.1
Subtotal	232	63.1	19,617	83.5	201	62.8	12,080	89.8

Table 4b

## Confirmed and Unconfirmed Foodborne Outbreaks by Nonbacterial Etiology, 1970 - 1971\*

	1970				1971			
	Outbreaks		Patients		Outbreaks		Patients	
	#	% <sup>@</sup>	#	% <sup>#</sup>	#	% <sup>@</sup>	#	% <sup>#</sup>
<u>PARASITIC</u>								
<u>Trichinella spiralis</u>	9	2.5	41	0.2	4	1.3	18	0.1
<u>VIRAL</u>								
Infectious hepatitis	4	1.1	107	0.5	4	1.3	22	0.2
<u>CHEMICAL</u>								
Chinese restaurant syndrome (MSG)	5	1.4	23	0.1	1	0.3	7	0.1
Fish toxin		0	0		3	0.9	41	0.3
Heavy metals	3	1.0	24	0.1	13	4.1	72	0.5
Other chemical	14	3.7	248	1.0	13	4.1	110	0.7
<u>UNKNOWN</u>	99	27.2	3,388	14.6	81	25.3	1,103	8.2
<u>BACTERIAL SUBTOTAL</u> (From Table 4a)	232	63.1	19,617	83.5	201	62.8	12,080	89.8
<u>TOTAL</u> (Bacterial and nonbacterial)	366	100.0	23,448	100.0	320	100.0	13,453	100.0

\*Annual Summaries 1970 and 1971.

<sup>@</sup>Percent of total outbreaks (bacterial and nonbacterial).<sup>#</sup>Percent of persons ill in all outbreaks.

Table 5

Number of Persons Ill in Outbreaks of Foodborne Illness, by Specific Etiology (confirmed and unconfirmed), 1970 - 1971\*

	1970			1971		
	Number of Outbreaks**	Median	Range	Number of Outbreaks**	Median	Range
<u>BACTERIAL</u>						
<u>B. cereus</u>	3	6	3-40	1	3	-
<u>C. botulinum</u>	7	1	1-4	9	2	1-5
<u>C. perfringens</u>	53	35	2-689	51	26	2-430
<u>E. coli</u>	6	41	3-150	2	198	8-387
Salmonella	47	19	2-353	30	15	2-186
Shigella	7	28	3-334	7	100	21-440
Staphylococcus	100	6	2-318	89	6	1-212
Group A streptococcus	0			1	498	-
Group D streptococcus	1	23	-	1	3	-
<u>V. parahemolyticus</u>	2	84	4-164	3	25	25-320
Multiple etiologies	0			4	33	12-76
<u>PARASITIC</u>						
<u>T. spiralis</u>	9	2	2-15	4	3	2-10
<u>VIRAL</u>						
Infectious hepatitis	4	11	9-77	4	6	5-6
<u>CHEMICAL</u>						
Chinese restaurant syndrome (MSG)	5	2	2-11	1	7	-
Fish toxin				3	7	6-28
Heavy metals				13	3	1-20
Other chemicals	16	2	2-131	13	4	1-61
<u>UNKNOWN</u>	99	6	2-425	81	5	1-183
TOTAL	359	8	1-689	317	7	1-498

\*Annual Summaries, 1970 - 1971

\*\*Excludes those outbreaks not giving adequate information on number of people ill.

Table 6

Median Attack Rate, Range of Attack Rates, and Number of Outbreaks of Foodborne Illness by Specific Etiology (confirmed and unconfirmed), 1970-1971\*

	<u>Number of outbreaks**</u>	<u>Median attack rates</u>	<u>Range of attack rates</u>
<u>BACTERIAL</u>			
<u>E. cereus</u>	1	100.0	-
<u>C. botulinum</u>	6	100.0	.1-100.0
<u>C. perfringens</u>	42	51.0	1.8-100.0
<u>E. coli</u>	2	65.5	36.4- 94.6
Salmonella	28	49.2	2.9-100.0
Shigella	6	51.7	16.4- 88.0
Staphylococcus	74	71.6	.8-100.0
Group A streptococcus			
Group D streptococcus			
<u>V. parahemolyticus</u>	3	33.3	25.0- 58.2
Multiple etiologies	4	43.9	24.0- 72.1
<u>PARASITIC</u>			
<u>T. spiralis</u>			
<u>VIRAL</u>			
Infectious hepatitis	2	33.9	26.1- 41.7
<u>CHEMICAL</u>			
Chinese restaurant syndrome (MSG)	1	53.9	-
Fish toxin	3	87.5	77.8-100.0
Heavy metals	10	100.0	55.0-100.0
Other chemicals	12	92.9	33.3-100.0
<u>UNKNOWN</u>	75	80.0	4.0-100.0

\*Annual Summary, 1970 - 1971

\*\*Excludes those outbreaks with inadequate information for these calculations.

Table 7

Number of Persons Ill in Foodborne Disease Outbreaks, by  
Specific Etiology (confirmed and unconfirmed), 1970 - 1971\*

	Size of Outbreak							Total
	1-3	4-10	11-30	31-100	101-300	301-1000	1000+	
<u>BACTERIAL</u>								
<u>B. cereus</u>	1							1
<u>C. botulinum</u>	8	1						9
<u>C. perfringens</u>	8	11	9	15	5	2	1	51
<u>E. coli</u>		1				1		2
Salmonella	3	9	14	2	2			30
Shigella			2	2	2	1		7
Staphylococcus	25	37	6	16	5			89
Group A streptococcus						1		1
Group D streptococcus	1							1
<u>V. parahemolyticus</u>			2			1		3
Multiple etiologies			2	2				4
<u>PARASITIC</u>								
<u>T. spiralis</u>	3	1						4
<u>VIRAL</u>								
Infectious hepatitis		4						4
<u>CHEMICAL</u>								
Chinese restaurant syndrome (MSG)		1						1
Fish toxin		2	1					3
Heavy metals	9	1	3					13
Other chemicals	6	5	1	1				13
<u>UNKNOWN</u>	33	27	9	11	1			81
TOTAL 1971**	97	100	49	49	15	6	1	317
TOTAL 1970***	116	78	61	52	40	13	2	362

\* Annual Summaries 1970 and 1971

\*\*In three staphylococcal outbreaks the number of ill was not reported.

\*\*\*In four outbreaks the number ill was not reported; 1 C. perfringens, 1 salmonella,  
and 2 staphylococcal outbreaks.

Table 8

## Vehicles Associated with Foodborne Illness, by Specific Etiology (confirmed and unconfirmed), 1970 - 1971\*

	<u>Beef**</u>	<u>Veal</u>	<u>Pork***</u>	<u>Lamb or mutton</u>	<u>Chicken*</u>	<u>Turkey*</u>	<u>Shellfish</u>	<u>Other fish</u>	<u>Other meat</u>	<u>Eggs</u>	<u>Milk</u>	<u>Cheese</u>	<u>Other dairy</u>	<u>Bakery products</u>	<u>Fruits &amp; vegetables</u>	<u>Chinese food</u>	<u>Multiple vehicles</u>	<u>Other</u>	<u>Unknown</u>	<u>Total</u>
<u>BACTERIAL</u>																				
<u>B. cereus</u>																1				1
<u>C. botulinum</u>							1								3			3	2	9
<u>C. perfringens</u>	19		1		3	7	2	1	1	1				1	1	1	2	3	8	51
<u>E. coli</u>							1					1								2
Salmonella	2		3		1	4		2		1				1			4	5	7	30
Shigella						1									1			2	3	7
Staphylococcus	7		37	1	4	3	2	3	3	2			1	3	1	1	3	8	13	92
Group A streptococcus													1							1
Group D streptococcus	1																			1
<u>V. parahemolyticus</u>							3													3
Multiple etiologies	3				1															4
<u>PARASITIC</u>																				
<u>T. spiralis</u>			4																	4
<u>VIRAL</u>																				
infectious hepatitis							1											1	2	4
<u>CHEMICAL</u>																				
Chinese restaurant syndrome (MSG)															1					1
Fish toxin							3													3
Heavy metals															1			10	2	13
Other chemicals	1						1			1				4				6		13
<u>UNKNOWN</u>	10		4		2	1	1	4	1		1	2		3	3	1	1	11	36	81
TOTAL 1971	43		49	1	11	16	10	15	5	4	2	3	2	12	10	5	10	49	73	320
TOTAL 1970	60	3	37		17	29	13	10	8	5	4	2	9	24	20	9	8	27	71	356

\* Annual Summaries 1970 and 1971

\*\*Includes some outbreaks due to meat and/or gravy and/or dressing

\*\*\*Includes ham, salami

Table 9

Place Where Food was Mishandled in Foodborne  
Outbreaks Reported by Specific Etiology (confirmed and unconfirmed)  
1970 - 1971

	<u>Food processing establishments</u>	<u>Food service establishments</u>	<u>Homes</u>	<u>Unknown- Unspecified</u>	<u>Total</u>
<u>BACTERIAL</u>					
<u>B. cereus</u>				1	1
<u>C. botulinum</u>	1		6	2	9
<u>C. perfringens</u>		33	2	16	51
<u>E. coli</u>	1			1	2
Salmonella		15	10	5	30
Shigella		1		6	7
Staphylococcus	8	40	23	21	92
Group A streptococcus				1	1
Group D streptococcus				1	1
<u>V. parahemolyticus</u>		3			3
Multiple etiologies		1	2	1	4
<u>PARASITIC</u>					
<u>T. spiralis</u>	3	1			4
<u>VIRAL</u>					
Infectious hepatitis			1	3	4
<u>CHEMICAL</u>					
Chinese restaurant syndrome (MSG)		1			1
Fish toxin		1	1	1	3
Heavy metal	7	3	1	2	13
Other chemicals	6	1	3	3	13
<u>UNKNOWN</u>	1	14	7	59	81
TOTAL 1971	27	114	56	123	320
TOTAL 1970	21	115	42	185	363

\*Annual Summaries 1970 and 1971

Table 10

Place of Acquisition of Foodborne Illness by  
Specific Etiology (confirmed and unconfirmed)  
1970 - 1971\*

	<u>Restaurant</u>	<u>Delicatessen</u>	<u>Cafeteria</u>	<u>Home</u>	<u>Picnic</u>	<u>School</u>	<u>Church</u>	<u>Camp</u>	<u>Other or Unknown</u>	<u>Total</u>
<u>BACTERIAL</u>										
<u>B. cereus</u>				1						1
<u>C. botulinum</u>				8					1	9
<u>C. perfringens</u>	15		5	8	2	8	3		10	51
<u>E. coli</u>				1	1					2
Salmonella	9			14			1		6	30
Shigella	2			1	3	1				7
Staphylococcus	24	1	1	32	2	7	2	1	22	92
Group A streptococcus						1				1
Group D streptococcus				1						1
<u>V. parahemolyticus</u>					2				1	3
Multiple etiologies				2			2			4
<u>PARASITIC</u>										
<u>Trichinella spiralis</u>				4						4
<u>VIRAL</u>										
Infectious hepatitis	2			2						4
<u>CHEMICAL</u>										
Chinese restaurant syndrome (MSG)	1									1
Fish toxin				1					2	3
Heavy metal	1	1		8			1		2	13
Other chemical		1		9					3	13
Unknown	33			31	2	5	1		9	81
Total 1971	87	3	6	123	12	22	10	1	56	320
Total 1970	114	3	15	132	7	26	3	6	60	366

\*Annual Summaries 1970 and 1971

Table 11

Monthly Occurrence of Outbreak of Foodborne Illness by Specific  
(confirmed and unconfirmed) Etiology  
1970 - 1971\*

	1971													Total
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Unk.	
<u>BACTERIAL</u>														
<u>B. cereus</u>			1											1
<u>C. botulinum</u>			1			2	2	2	1		1			9
<u>C. perfringens</u>	1	9	8	5	4	2	3	5	2	3	7	2		51
<u>E. coli</u>					1					1				2
Salmonella	3		1	1	1	3	6	7	3	1		3	1	30
Shigella	1	1			1		2	1				1		7
Staphylococcus	4	4	6	6	7	17	10	9	4	7	8	6	4	92
Group A streptococcus										1				1
Group D streptococcus	1													1
<u>V. parahemolyticus</u>								3						3
Multiple etiologies	1	1		1	1									4
<u>PARASITIC</u>														
<u>T. spiralis</u>							2	1					1	4
<u>VIRAL</u>														
Infectious hepatitis						1		1					2	4
<u>CHEMICAL</u>														
Chinese restaurant syndrome (MSG)			1											1
Fish toxin		1				1		1						3
Heavy metals		1		1	6	1		1	1		2			13
Other chemicals	4		2	1	1		1			2	1	1		13
<u>UNKNOWN</u>	8	4	7	6	10	4	14	4	4	3	5	6	6	81
TOTAL 1971	23	21	27	21	32	31	40	35	15	18	24	19	14	320
TOTAL 1970	22	27	27	28	39	33	29	40	28	37	32	22	2	366

\*Annual Summaries 1970 and 1971





## Section E - Line Listing of Foodborne Outbreaks

### Explanation of line listing:

Listing is by specific etiology. Under each etiology confirmed outbreaks are listed first in chronological order. Unconfirmed outbreaks are listed next in chronological order, denoted by the prefix "probable" (prob.).

For all instances in which there was any question as to the accuracy of information, a question mark is included.

Onset - the month is followed by the day of the month. In some outbreaks involving continual exposure over a period of time, the onset is expressed as a range between onset of the first and last case.

Lab data - usually refers to cultural confirmation.

P - patient  
V - vehicle  
H - food handler

### Symptoms:

N - nausea	F - fever
V - vomiting	A - anorexia
C - cramps, abdominal pain	O - other
D - diarrhea	LFT - liver function tests
H - headache	

Reporter - see Table 1 for explanation of abbreviations

### Other symbols and abbreviations:

$\bar{x}$  - mean  
med. - median  
≈ - approximately

Explanation of code letters in parentheses - (A), (B), (C), (D) - in line listing under column headed "Comment". These letters refer to data presented in Table 9.

- (A) "Food processing establishments" - Site or place of food improperly handled in preparation for marketing.
- (B) "Food service establishments" - Site or place of food improperly handled during food processing in a commercial establishment for public consumption.
- (C) "Homes" - Food mishandled in homes.
- (D) "Unknown-Unspecified" - Information lacking, precluding classification.

SECTION F  
FOODBORNE OUTBREAKS, JULY - DECEMBER, 1971\*

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA		CLINICAL DATA		REPORTER	COMMENT	
				P.	V.	H.	# ill (at risk)			incub. period (hrs.)
<u>BACTERIAL</u>										
<u>CLOSTRIDIUM BOTULINUM</u>										
<u>C. botulinum</u> type A	6-29	New York	home-prepared antipasto	+			2 (2)	24	MMWR	Home (C)
<u>C. botulinum</u> type A	6-30	New York	commercial vichyssoise soup	+			2 (2)	24	MMWR	Home (A)
<u>C. botulinum</u> type E	7-20	Alaska	smoked whitefish	+			2	51	DH	Home (C)
<u>C. botulinum</u> type A	8-11	Maryland		+			1		DH	Home? (D)
<u>C. botulinum</u> type B	8-21	Pennsylvania	home-canned peppers	+			3 (3)	24	DH	Home (C)
<u>C. botulinum</u> type A	9-12	California	home-canned chili peppers	+			84 (250)	14	DH	Restaurant (D)
prob. <u>C. botulinum</u>	7-21	Washington	home-canned beets				2 (2)	72	DH	Home (C)
prob. <u>C. botulinum</u>	11-8	California	home-canned celery?	-			2		DH	Home (C)
<u>CLOSTRIDIUM PERFRINGENS</u>										
prob. <u>C. perfringens</u>	2-6	Pennsylvania					84 (250)	14	DH	Restaurant (D)
prob. <u>C. perfringens</u>	7-11	Washington	barbecued beef	+			30 (53)	11	DH	Picnic (B)
prob. <u>C. perfringens</u>	7-25	Ohio	beef noodle casserole				26 (67)	10	DH	Picnic (B)
prob. <u>C. perfringens</u>	7-26	Washington	chili	+			3 (3)	15	DH	Restaurant (B)
prob. <u>C. perfringens</u>	8-7	Louisiana	chicken salad sandwich				208 (400)	18	DH	Church (D)
prob. <u>C. perfringens</u>	8-9	California	spaghetti and meat sauce				43 (400)	12	DH	Wedding reception (B)

\*For listing of outbreaks January - July, 1971, see report Foodborne Outbreaks January, - June, 1971

prob. <u>C. perfringens</u>	8-19	Ohio	chicken salad sandwich				168 (296)	13	DH	Cafeteria (B)
prob. <u>C. perfringens</u>	8-30	New Jersey	roast beef	-			50 (80)	10	DH	Fire Department (B)
prob. <u>C. perfringens</u>	8-31	Ohio	roast beef	+			5 (6)	20	DH	Restaurant (B)
prob. <u>C. perfringens</u>	9-6	Washington	prawns?				7 (380)	12	DH	Home (B)
prob. <u>C. perfringens</u>	9-15	Mississippi	turkey salad	+			1000 (1923)	8	USDA	School (B)
prob. <u>C. perfringens</u>	10-6	California	Mexican food				26 (149)	24	DH	Church (B)
prob. <u>C. perfringens</u>	10-16	Pennsylvania		-			430 (695)	9	DH	Restaurant (D)
prob. <u>C. perfringens</u>	10-30	Washington	wieners				3 (3)	15	DH	Home (D)
prob. <u>C. perfringens</u>	11-3	Washington	chili	+			20 (40)	8	DH	Church (C)
prob. <u>C. perfringens</u>	11-8	New Hampshire	turkey	+			75 (500)		DH	School (D)
prob. <u>C. perfringens</u>	11-8	North Dakota	meatballs	+			75 (900)	12	DH	School (B)
prob. <u>C. perfringens</u>	11-10	Utah	beef	+			9 (10)	12	DH	(D)
prob. <u>C. perfringens</u>	11-11	Washington	barbecued chicken	+			2 (2)	14	DH	Home (D)
prob. <u>C. perfringens</u>	11-19	Georgia	roast	+			30 (75)	7	DH	Fraternity house (B)
prob. <u>C. perfringens</u>	11-28	Ohio	turkey and dressing	+			10 (10)	12	DH	Home (C)
prob. <u>C. perfringens</u>	12-3	Ohio	creamed chicken				2 (5)	11	DH	Restaurant (B)
prob. <u>C. perfringens</u>	12-8	Alaska	roast turkey				58 (501)	13	AF	Dining hall (B)
<u>ESCHERICHIA COLI</u>										
<u>E. coli</u>	10-30	13 states and Washington, D.C.	imported cheese	+			387 (409)	18	DH	Home (A)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA			CLINICAL DATA			REPORTER	COMMENT	
				P.	V.	H.	# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)			Symptoms
<u>SALMONELLA</u>												
<u>S. heidelberg</u>	7-4	Illinois	roast pork	-	+	+	14(20)	30		N, V, D, F, C	DH	Home (C)
<u>S. javiana</u>	7-5	Kansas		+	-	+	23(76)	40	72	D, C, N, V, F	DH	Restaurant (C)
<u>S. manhattan</u>	7-10	California		+			23(79)	49	409	C, D, N, V, F	DH	Clubhouse (D)
<u>S. infantis</u>	7-21	Georgia	chef, shrimp, and tossed salads	+	+	+	18	24	24	D, F, V, C, N	DH	Restaurant (B)
<u>S. typhi-murium</u> phage type E-1	7-23	Pennsylvania	potato salad?	+	+	+	33(130)	432	27	F, H, D, C, V	DH	Church (B)
<u>S. thompson</u>	8-1	Iowa	deviled eggs, ham, dip	+	+	+	71(150)	18	72	D, F, N, V	DH	Country club (B)
<u>S. thompson</u>	8-1	Iowa	potato salad?	+	+	+	24(70)	18	72	D, F, N, V	DH	Home (B)
<u>S. thompson</u>	8-7	Maine	chicken salad	+	+	+	17(33)	18		D, C, F, N, V	DH	Home (C)
<u>S. Typhi-murium</u>	8-8	Minnesota	turkey and rice stuffing	+	+	-	8(35)	48	9	D, F, C	DH	Home (C)
<u>S. Typhi-murium</u>	8-22	New Jersey	roast beef	+	+	+	22(36)	18	72	D	DH	Home (B)
<u>S. Typhi-murium</u>	9-5	Minnesota	lemon meringue pie	+	+	+	5(21)	24			DH	Home (C)
<u>S. thompson</u>	9-10	Wisconsin	pork spare ribs	+	+	+	4			D	DH	Restaurant (B)
<u>S. derby</u>	12-25	Kansas		+			11(13)			D, N, V	DH	Home (C)
Salmonella group B	8-14	South Carolina		+			15(106)		18	D, F, C	DH	Nursing home (D)
<u>S. enteritidis</u>	10-9	Idaho	chicken	+	+		6(120)	5	12	D, N, V, C	DH	Restaurant (B)
Salmonella unknown type		Connecticut	turkey	+	+	-	2(2)	24		F, D	USDA	Home (C)
prob. <u>S. salmonella</u> group C	8-23	Puerto Rico	semiliquid diet	+			20(77)				DH	Nursing home (B)
prob. <u>S. manhattan</u>	7-12	New York City	beef stew	-	+	+	2(2)	1		D	DH	Restaurant (B)

SHIGELLA

<u>S. sonnei</u>	7-16	California	chicken spread	+			22(25)	15	72	N, C, D	DH	Home (D)
<u>S. sonnei</u>	7-21	Pennsylvania	fruit salad	+			80(253)	48	72	N, V, F, C, D	DH	Picnic (D)
prob. <u>shigella</u>	8-22	Alaska		+			100		36	N, V, C, D	DH	Restaurant (D)
<u>STAPHYLOCOCCUS</u>												
<u>S. aureus</u>	3-25	Oklahoma	ham	+	+	+	56(61)	5	8	N, V, D, C	DH	Restaurant (B)
<u>S. aureus</u>	7-8	Washington	turkey meat	-	+	+	4(4)	5	12	N, V, D, C	DH	Restaurant (B)
<u>S. aureus</u>	11-21	Wisconsin	baked ham	+	+	+	49	5	24	V, D, C, N, F	DH	Home (B)
<u>S. aureus</u>	12-23	California	ham	+	+	+	29(45)	4	6	N, V, C, D	AF	Party (B)
<u>S. aureus</u>	12-21	Hawaii	raw pork dish	+	+	+	8(11)	4		N, V, C, D, chills	DH	Iuau (D)
<u>S. aureus</u>	12-25	Kentucky	ham	+	+	+	10(36)	5	6	C, N, V, D	DH	Restaurant (C)
prob. <u>staph.</u>	4-5	Michigan	egg salad	-	+	+	4(4) 2	6		D, V, C, F	DH	Home (C)
prob. <u>staph.</u>	6-19	Pennsylvania	ham				48(250)	3	24	N, V, D	DH	Union Hall (C)
prob. <u>staph.</u>	6-26	Pennsylvania	chicken and ham	-	+	+	40(90)	4	24	N, V, C, D	DH	Home (B)
prob. <u>staph.</u>	7-2	California					(2)		24	N, V, C, D	DH	Home (D)
prob. <u>staph.</u>	7-6	Washington	spare ribs?	-			4(4)	5	3	N, V, D	DH	Restaurant (B)
prob. <u>staph.</u>	7-14	Texas	cream puffs				8(9)	2	24	N, V	DH	Home (C)
prob. <u>staph.</u>	7-20	Michigan	hamburger?	-	-		7(7)	3	36	N, V, D	DH	Restaurant (B)
prob. <u>staph.</u>	7-22	Idaho	salami	-	+		6(11)	4		N, V, D	DH	Home (C)
prob. <u>staph.</u>	7-24	Minnesota	shrimp salad	+			8(11)	3	24	N, V, D	DH	Home (D)
prob. <u>staph.</u>	7-26	California	baked ham	+	+		1(2)	1	18	N, V, C, D	DH	Home (B)
prob. <u>staph.</u>	7-27	California	ham salad	+	+	+	2(2)	2	44	N, V, D	DH	Home (B)
prob. <u>staph.</u>	7-15	Multiple states	Genoa salami	+	+		34	4	48	N, V, D, C	DH	Home (A)
prob. <u>staph.</u>	8-3	Michigan	bacon-egg salad sandwich				1(1)	3	36	N, V, D	DH	Office building (D)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA			CLINICAL DATA			REPORTER	COMMENT
				P.	V.	H.	# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)		
prob. staph.	8-1	New Mexico	potato salad	+			36(51)	4		DH	Private club (C)
prob. staph.	8-6	Montana	potato salad		+		70(108)	3	24	DH	School (B)
prob. staph.	8-8	New Mexico	macaroni	-			3	10	48	DH	Home (C)
prob. staph.	8-17	Washington	ham				2(2)	4		DH	Home (C)
prob. staph.	8-22	Delaware	chicken				10(27)	12	36	DH	Convent (B)
prob. staph.	8-25	Michigan		-	+	-	10(140)	5	16	DH	Restaurant (B)
prob. staph.	8-25	Nebraska		-	+		7(7)	3		DH	Home (A)
prob. staph.	8-30	Washington	roast beef	+			2(2)		12	DH	Food stand (B)
prob. staph.	9-8	Nebraska	ham	-			5	3	24	DH	Food stand (B)
prob. staph.	9-10	Wisconsin	ham	+	+		40			DH	School (B)
prob. staph.	9-12	Washington	roast beef				3(4)	3		DH	Restaurant (B)
prob. staph.	9-24	Pennsylvania	macaroni salad	+		-	212(433)	3	41	Other	School (B)
prob. staph.	10-8		pies	+			1(1)			DH	Restaurant (B)
prob. staph.	10-13	Washington	scallops?	-			3(3)	4	12	DH	Restaurant (B)
prob. staph.	10-22	California	ham	-			5(8)	4	24	DH	Restaurant (B)
prob. staph.	10-28	Arkansas	eggs	+	+		66(187)	4		DH	Prison (B)
prob. staph.	11-6	Washington	salami	+			2(2)	41	24	DH	Home (C)
prob. staph.	11-8	Washington	TV dinner?				5(5)	2	12	DH	Home (C)

24

prob. staph.	11-15	Oklahoma	ham	+		-	10(33)	4		DH	Conference (B)
prob. staph.	11-19	Delaware	turkey				70(400)	3	24	DH	School (B)
prob. staph.	11-20	Georgia		-			18(95)			DH	Cafeteria (D)
prob. staph.	11-21	Rhode Island	eclairs	+						DH	Home (B)
prob. staph.	11-21	Michigan	pork chops				6(6)	8	16	DH	Campground (B)
prob. staph.	12-19	Oklahoma		+			4	3	8	DH	(D)
prob. staph.	12-25	California	ham				8(6)	3	5	DH	Church (D)
prob. staph.	?	New York	chicken salad				10(55)	4	24	DH	Nursing home (D)
prob. staph.	?	Kentucky					50(80)	5	24	DH	Camp (C)

25

VIBRIO PARAHEMOLYTICUS

<u>V. parahemolyticus</u>	8-14	Maryland	steamed crabs	+			320(550)	15	72	DH	Picnic (B)
<u>V. parahemolyticus</u>	8-28	Maryland	steamed crabs	+			25(75)	12	72	DH	Picnic (B)
<u>V. parahemolyticus</u>	8-31	Maryland	crab salad	+			25(100)	18	72	DH	Hospital (B)

TRICHINELLA SPIRALIS

<u>T. spiralis</u>	7-14	New York	pork sausage	+			3	300		MMWR	Home (A)
<u>T. spiralis</u>	7-25	Arizona	pork?	+			2	5	30	MMWR	Home (A)
<u>T. spiralis</u>	8-1	Ohio	pork sausage	+			10	14		MMWR	Home (B)
<u>T. spiralis</u>			pork sausage	+	-		3	86		MMWR	Home (A)

VIRAL

infectious hepatitis	6-18	Oklahoma					5			DH	Restaurant (D)
infectious hepatitis	8-9	Massachusetts	clams				5(12)	500		MMWR	Home (C)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA			CLINICAL DATA			REPORTER	COMMENT
				P.	V.	H.	# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)		
infectious hepatitis		New York	chef or julienna salad				6(23)		jaundice	DH	Home (D)
prob. infectious hepatitis		Hawaii					6	900	jaundice	DH	Home (D)
<u>CHEMICAL</u>											
Andromeda toxin	10-?	Washington	honey	+			12(14)	1	H, dizziness, weakness	DH	Home (A)
prob. andromeda toxin (honey from Alpine Laurel blossoms)	11-11	New Mexico	honey				1(2)	1	H, dizziness, weakness	DH	Home (A)
chocolate laxative	3-11	Kansas	brownies				5(5)	3	D,C	DH	Home (C)
prob. chemical	7-4	New York City	watermelon				4(4)	6	N,V,C,D	DH	Home (D)
fish toxin	8-4	Florida	barracuda				6(6)	4	D,V	DH	Ship (C)
methanol antifreeze	10-30	Idaho	infant formula	+			1(3)	2		DH	Home (C)
phenolphthalein	12-2	Georgia	cake	+			4(4)	1	D	DH	Workbench (C)
tin	11-30	Washington	fruit cocktail	+			3(3)	1	N,V,C,H	DH	Home (A)
zinc	8-27	California	punch (galvanized container)				20(20)	15 min.	N,V,C,D	DH	Church (B)
zinc	9-4	Nebraska	fruit punch				17	15 min.	D,C	DH	Boy's club (B)
zinc	11-11	New Mexico	spaghetti sauce				4(5)	1	N,V,C,D	DH	Home (C)
<u>UNKNOWN</u>											
	5-3	Puerto Rico	cuajo				7(7)	18	D,N,V,C,F	DH	Restaurant (B)
	5-10	Pennsylvania		-			36(50)	13	D,N,V,C	DH	Restaurant (D)
	5-12	South Carolina		-			5(50)	3	D,V,C,F	DH	Ice company (B)

	5-29	South Carolina		-			2(4)	1	N,V,D	DH	Restaurant (D)
	7-2	Texas	corned beef				1(1)	1	N,D	DH	Home (D)
	7-3	Washington	"sloppy joes"	-			2(2)	7	N,V,C,D,F	DH	Home (C)
	7-4	Washington	macaroni salad?	-			10(12)	35	N,D,V,C	DH	Home (D)
	7-8	Washington	macaroni and cheese	-			2(6)	7	N,V,C	DH	Home (C)
	7-12	South Carolina		-			6(6)	1	N,V,C,D,F,C	DH	Restaurant (C)
	7-14	New Hampshire		-			33(111)	35	N,V,C,D,F	DH	Picnic (D)
	7-15	South Carolina		-			2(2)	7	N,V,D	DH	Restaurant (B)
	7-15	South Carolina	cheese				1(3)		N,V,D	DH	Home (C)
	7-17	California	chicken salad				1(15)		D,C	DH	Home (D)
	7-17	Wisconsin	chicken salad				3	3		DH	Restaurant (B)
	7-19	Wisconsin	chicken salad				2	5		DH	Restaurant (B)
	7-27	New Jersey	soft drink	-			18(37)	4	N,V	DH	Other (D)
	7-28	Washington	cream pie	-			3(3)	12	D,C,F	DH	Home (B)
	7-28	South Carolina		-			3(4)	3	N,V,C,D	DH	Restaurant (D)
	8-1	New York City	beef patty				3(4)	2	D,C,N,V,F	DH	Home (C)
	8-12	Washington	crab raviatle				2(5)	21	N,C,D	DH	Restaurant (B)
	8-14	Illinois	barbecue	-			4	3	V,D	DH	Restaurant (D)
	8-22	Florida	pork	-			14(40)	4	N,V,D,F	DH	Home (D)
	9-11	California		-			29(52)	49	N,V,C,D	DH	School (D)
	9-28	Georgia	chicken?	-			2	16	N,V,C,D	DH	Home (D)

STATE EPIDEMIOLOGISTS AND  
STATE LABORATORY DIRECTORS

The State Epidemiologists are the key to all disease surveillance activities. They are responsible for collecting, interpreting, and transmitting data and epidemiologic information from their individual States; their contributions to this report are gratefully acknowledged. In addition, valuable contributions are made by State Laboratory Directors; we are indebted to them for their valuable support.

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA			CLINICAL DATA			REPORTER	COMMENT
				P.	V.	H.	# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)		
	9-30	South Carolina?					3 (3)	N, V, C, D		DH	Home (D)
	9-30	South Carolina?					10 (200)	N, C, D	9	DH	School (D)
	10-6	Washington	tarter sauce?				4 (4)	N, C, V, D	1	DH	Restaurant (D)
	10-18	New Jersey	punch				60 (80)	D, N, V, C, F	33	DH	Church (B)
	10-23	Michigan?					29	C, V, F	72	DH	Ship (D)
	11-4	New York City	cheese?				10 (12)	D, V, C, F	13	DH	Home (D)
	11-11	Washington	Chinese food				2 (2)	N, V, C, D	7	DH	Restaurant (B)
	11-12	Washington	chocolate cake with custard filling				3 (4)	N, V, D, C	6	DH	Home (A)
	11-26	Utah					3 (3)		10	DH	(B)
	11-29	Utah					35 (45)		36	DH	(B)
	12-12	New York City?					2 (5)		5	DH	Home (D)
		New York	beef				19 (19)			DH	Restaurant (D)
		New York	candy				3 (3)			DH	Home (D)
		New York	french fries				3 (4)			DH	Restaurant (D)
		New York?					40 (284)			DH	Restaurant (D)
		Ohio	Mexican food				32 (37)		33	DH	Home (B)

## STATE

Alabama  
Alaska  
Arizona  
Arkansas  
California  
Colorado  
Connecticut  
Delaware  
District of Columbia  
Florida  
Georgia  
Hawaii  
Idaho  
Illinois  
Indiana  
Iowa  
Kansas  
Kentucky  
Louisiana  
Maine  
Maryland  
Massachusetts  
Michigan  
Minnesota  
Mississippi  
Missouri  
Montana  
Nebraska  
Nevada  
New Hampshire  
New Jersey  
New Mexico  
New York City  
New York State  
North Carolina  
North Dakota  
Ohio  
Oklahoma  
Oregon  
Pennsylvania  
Puerto Rico  
Rhode Island  
South Carolina  
South Dakota  
Tennessee  
Texas  
Utah  
Vermont  
Virginia  
Washington  
West Virginia  
Wisconsin  
Wyoming

## STATE EPIDEMIOLOGIST

Frederick S. Wolf, M.D.  
Donald K. Freedman, M.D.  
Philip M. Hotchkiss, D.V.M.  
G. Doty Murphy, III, M.D.  
James Chin, M.D.  
Thomas M. Vernon, Jr., M.D.  
James C. Hart, M.D.  
Floyd I. Hudson, M.D.  
William E. Long, M.D.  
Ralph B. Hogan, M.D.  
John E. McCroan, Ph.D.  
Ned Wiebenga, M.D.  
John A. Mather, M.D.  
Byron J. Francis, M.D.  
Charles L. Barrett, M.D.  
Arnold M. Reeve, M.D.  
Don E. Wilcox, M.D.  
Calixto Hernandez, M.D.  
Charles T. Caraway, D.V.M.  
Timothy R. Townsend, M.D. (Acting)  
John D. Stafford, M.D.  
Nicholas J. Fiumara, M.D.  
Norman S. Hayner, M.D.  
D. S. Fleming, M.D.  
Durward L. Blakey, M.D.  
H. Denny Donnell, Jr., M.D.  
John S. Anderson, M.D. (Acting)  
Russell W. Currier, D.V.M.  
William M. Edwards, M.D.  
Viadas Kaupas, M.D.  
Ronald Altman, M.D.  
Nancy C. McCaig, M.D.  
Pascal J. Imperato, M.D.  
Alan R. Hinman, M.D.  
Martin P. Hines, D.V.M.  
Kenneth Mosser  
John H. Ackerman, M.D.  
Stanley Ferguson, Ph.D.  
John H. Donnelly, M.D. (Acting)  
W. D. Schrack, Jr., M.D.  
Luis Mainardi, M.D.  
James R. Allen, M.D. (Acting)  
Donald H. Robinson, M.D.  
Robert H. Hayes, M.D.  
Robert H. Hutcheson, Jr., M.D.  
M. S. Dickerson, M.D.  
Taira Fukushima, M.D.  
Geoffrey Smith, M.D.  
Karl A. Western, M.D.  
John Beare, M.D. (Acting)  
N. H. Dyer, M.D.  
H. Grant Skinner, M.D.  
Herman S. Parish, M.D.

## STATE LABORATORY DIRECTOR

Thomas S. Hosty, Ph.D.  
Frank P. Pauls, Dr.P.H.  
H. Gilbert Crecelius, Ph.D.  
Robert T. Howell, Dr.P.H.  
Edwin H. Lannette, M.D.  
C. D. McGuire, Ph.D.  
William W. Ullmann, Ph.D.  
Irene V. Mazeika, M.D.  
Alton Shields, Dr.P.H.  
Nathan J. Schneider, Ph.D.  
Earl E. Long, M.S.  
Ralph H. Tanimoto, M.S.  
Darrell W. Brock, Dr.P.H.  
Richard Morrissey, M.P.H.  
Josephine Van Fleet, M.D.  
W. J. Hausler, Jr., Ph.D.  
Nicholas D. Duffett, Ph.D.  
B. F. Brown, M.D.  
George H. Hauser, M.D.  
Charles Okey, Ph.D.  
Robert L. Cavenaugh, M.D.  
Morton A. Madoff, M.D.  
Kenneth R. Wilcox, Jr., M.D.  
Henry Bauer, Ph.D.  
R. H. Andrews, M.S.  
Elmer Spurrier, Dr.P.H.  
David B. Lackman, Ph.D.  
Henry McConnell, Dr.P.H.  
Paul Fugazzotto, Ph.D.  
Robert A. Milner, Dr.P.H.  
Martin Goldfield, M.D.  
Daniel E. Johnson, Ph.D.  
Paul S. May, Ph.D.  
Donald J. Dean, D.V.M.  
Lynn G. Maddry, Ph.D.  
C. Patton Steele, B.S.  
Charles C. Croft, Sc.D.  
William R. Schmieding, M.D.  
Gatlin R. Brandon, M.P.H.  
James E. Prier, Ph.D.  
Eduardo Angel, M.D.  
Malcolm C. Hinchliffe, M.S.  
Arthur F. DiSalvo, M.D.  
B. E. Diamond, M.S.  
J. Howard Barrick, Dr.P.H.  
J. V. Irons, Sc.D.  
Russell S. Fraser, M.S.  
Dymitry Pomar, D.V.M.  
Frank W. Lambert, Ph.D.  
Jack Allard, Ph.D.  
J. Roy Monroe, Ph.D.  
S. L. Inhorn, M.D.  
Donald T. Lee, Dr.P.H.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE  
PUBLIC HEALTH SERVICE  
HEALTH SERVICES AND MENTAL HEALTH ADMINISTRATION  
CENTER FOR DISEASE CONTROL  
ATLANTA, GEORGIA 30333

OFFICIAL BUSINESS



POSTAGE AND FEES PAID  
U.S. DEPARTMENT OF HEW  
HEW 396

3-G-45  
Mr Stanley M Martin,  
Math Statistician  
Bacterial Diseases Branch  
Epidemiology Program