



Center for Disease Control

FOODBORNE OUTBREAKS

ANNUAL SUMMARY

1970

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

PUBLIC HEALTH SERVICE

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.

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Key to all disease surveillance activities are the physicians who serve as State epidemiologists. They are responsible for collecting, interpreting, and transmitting data and epidemiological 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.

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SECTION A. FOODBORNE OUTBREAKS

This is the fifth annual summary of foodborne disease outbreaks compiled by the Epidemiology Program. These reports 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 water or food and affecting two or more persons. There is one exception; a single case of botulism constitutes an outbreak. This 1970 Annual Summary compliments and summarizes data included in the previous report, "Foodborne Outbreaks Status Report, January-June 1970." In addition, tabular comparisons of the 1969 and 1970 data are presented.

Food poisoning in the United States is grossly under reported. In the State of Washington where foodborne disease surveillance has been developed to high degree, 68 outbreaks were reported to the CDC in 1970. Projecting from this figure, the estimated number of outbreaks for the entire United States was 3,600 in 1970; however, only 366 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 1970, for the first time in 5 years, the number of reported outbreaks (366) decreased when compared with the number received the previous year (371). This decline probably does not reflect a decrease in the amount of foodborne illness. Rather, it suggests that foodborne disease surveillance occupies 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 discovery 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. newbrunswick in dry milk products in 1968 (Collins, et al, 1968).
2. Knowledge of Disease Causation: The predominant role of C. perfringens in food poisoning was 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. 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: Rational planning, allocation of budgets, setting of priorities, and institution of training programs depend on accurate and comprehensive surveillance.

For the past 2 years a revised form has been available for summarizing foodborne outbreaks (See example in Section D). This form has aided in standardization of reported data for computer analysis. A second purpose of the form is to provide a check list of parameters which describe and define an outbreak. Thirdly, the form serves as a means by which precise data can be tersely recorded and forwarded to the CDC for inclusion in this report. It is hoped that this simplified procedure will further stimulate the reporting of foodborne outbreaks.

Even though reported outbreaks are generally well documented, it is readily apparent from the listing of outbreaks in this summary that there is considerable variation in the completeness and depth of investigations. In 1969, the etiology was not specified or was not confirmed by laboratory results in 46 percent of outbreaks; for 1970, this "unknown-unconfirmed" category accounted for 62 percent of all reported outbreaks. Thus, it is difficult to draw definite conclusions about patterns of foodborne illness from these data. At most, the predominance of certain etiologies and various trends within these etiologies are discernable.

In this report a distinction has been made between confirmed and unconfirmed outbreaks. Confirmation in almost all instances refers to laboratory support of epidemiologic evidence--a major exception being infectious hepatitis. Unconfirmed outbreaks refer to those outbreaks in which epidemiologic evidence is not supported by laboratory data.

For each outbreak in which more than one number was reported for the number ill or exposed, the lowest number was always used. The calculations based on these data thus represent minimal numbers.

The following map (Figure 1) shows the geographic distribution of outbreaks in the United States during 1970. Utilizing all sources of information, there were no reports of outbreaks in 5 states during this period. In 1969 during the comparable period, 12 states reported no outbreaks.

FIGURE 1 NUMBER OF OUTBREAKS OF FOODBORNE ILLNESS, BY STATE, 1970

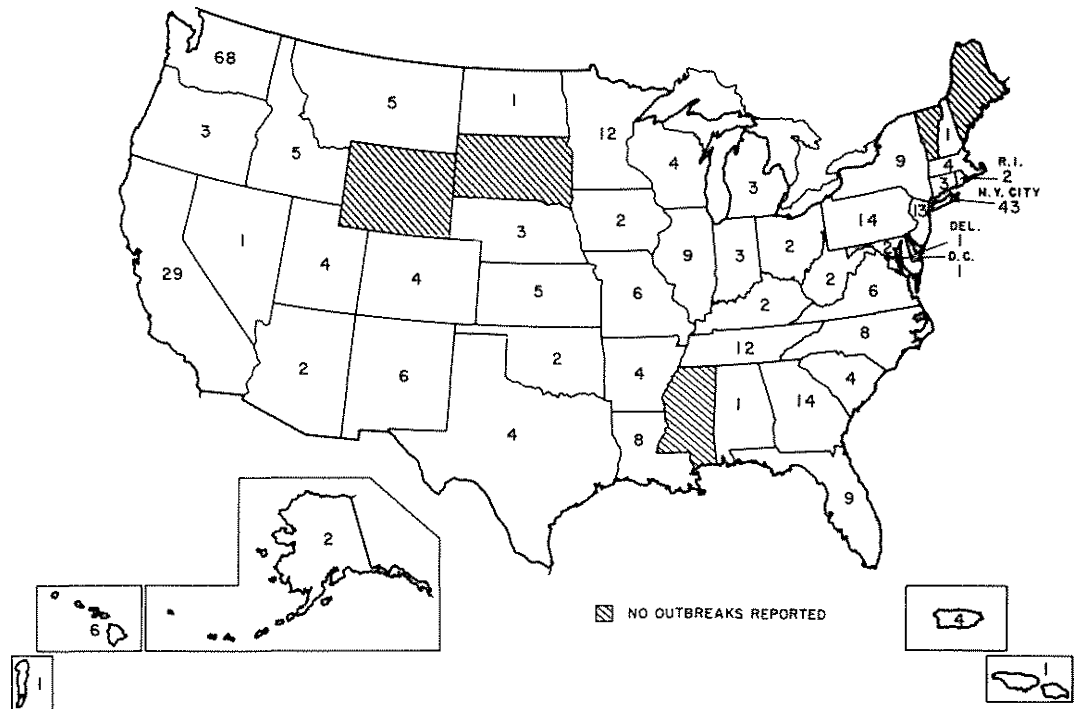


Figure 2 is a pie diagram depicting the major etiologic categories responsible for outbreaks of food poisoning and their relative percents reported to CDC from all sources during 1970. There were a total of 366 outbreaks in 1970 compared to 371 for 1969. Bacterial etiology predictably accounted for the majority of all foodborne outbreaks of known etiology followed by chemical food poisoning. Parasitic and viral agents were incriminated in less than 4 percent of the outbreaks of known etiology. In 27.2 percent of outbreaks, no etiology could be ascribed. The subcategory "Other" under the "Bacterial" heading includes outbreaks attributed to Bacillus cereus, enterococci, Escherichia coli, and Vibrio parahemolyticus.

FIGURE 2 **FOODBORNE DISEASE OUTBREAKS (CONFIRMED AND UNCONFIRMED), BY CAUSATIVE ORGANISM, UNITED STATES, ANNUAL SUMMARY, 1970**

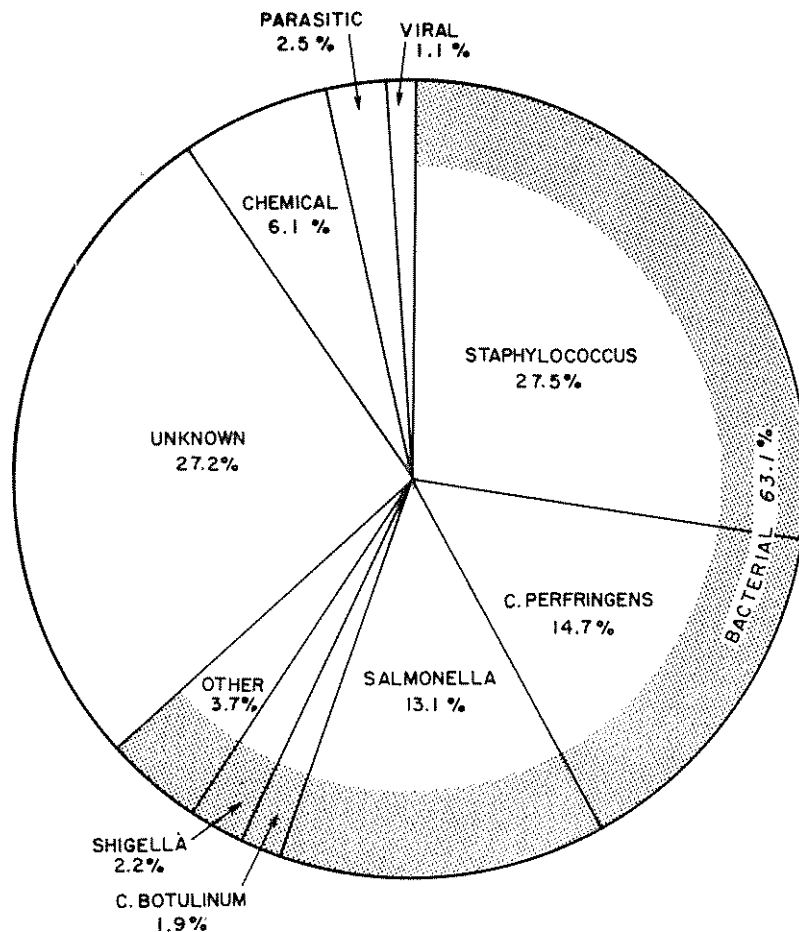
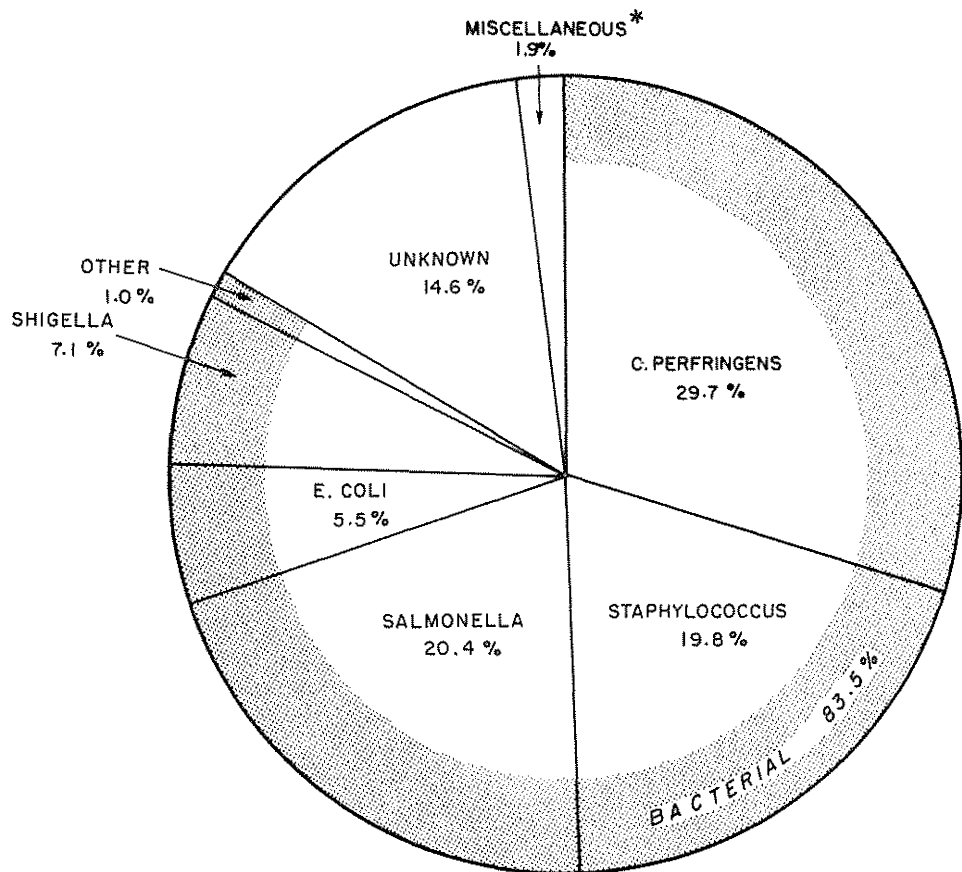


Figure 3 is a pie diagram illustrating the relative percents of individuals involved in the major etiologic categories of food poisoning for 1970. A total of 23,448 individuals developed food poisoning during 1970, compared to 28,563 during the previous year. Over 80 percent of individuals experienced food poisoning of bacterial etiology. Clostridium perfringens food poisoning affected nearly 30 percent of all patients, followed by salmonellosis (20.4%), staphylococcal gastroenteritis (11.8%), shigella (7.1%), and Escherichia coli (5.5%). The remaining bacterial etiologies (Bacillus cereus, Clostridium botulinum, enterococcus, and Vibrio parahemolyticus) affected less than 1 percent of all patients. Parasitic, chemical, and viral food poisoning involved only 1.9 percent of all patients. Food poisoning of unknown etiology caused 14.6 percent of cases.

FIGURE 3 INDIVIDUALS INVOLVED IN FOODBORNE DISEASE OUTBREAKS (CONFIRMED AND UNCONFIRMED), BY CAUSATIVE ORGANISM, UNITED STATES, 1970



* INCLUDES PARASITIC, VIRAL, AND CHEMICAL FOOD POISONINGS

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 366 outbreaks recorded for 1970, 305 (85%) emanated from state, local, or territorial health departments, 40 (11%) 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 first time since 1966, the number of reported outbreaks failed to increase over the number for the previous year. This decline is due to the decrease from 341 reports in 1969 to 305 reports in 1970 submitted by the "Departments of Health."

Table 2 indicates the number of outbreaks reported directly by state, local, and territorial health departments for 1969 and 1970. The three health departments contributing the most reports for 1970 were Washington State (22%), New York City (14%), and California (9%). In 1970, seven state health departments did not report, compared to 13 in 1969. These figures in no way indicate the prevalence of foodborne disease in the respective areas, but rather reflect the interest of the various health departments in national reporting.

Table 3 records the number of confirmed, unconfirmed, and total outbreaks and cases by etiology and the percentage of confirmed and unconfirmed outbreaks and cases. Table 4 compares the 1969 and 1970 data. In 1970, C. perfringens accounted for almost 30 percent of all patients and 15 percent of all outbreaks. In 1969, C. perfringens was implicated in 65 percent of food poisoning cases and was responsible for nearly 18 percent of all outbreaks. These 1969 data were biased by one large outbreak of C. perfringens involving over 13,000 school children. In 1970, salmonella caused 20 percent of all food poisoning cases and 13 percent of all outbreaks. This represents an increase in salmonellosis cases when compared to the 1969 data-- 7 percent of cases and 13 percent of outbreaks. The third most common type of food poisoning in 1970 was staphylococcal gastroenteritis which accounted for 19.8 percent of all patients and nearly 28 percent of all outbreaks. In 1969 staphylococci were implicated in 12 percent of cases and 25 percent of all outbreaks. For 1970 the above three etiologies were responsible for 70 percent of all ill individuals and 56 percent of all foodborne outbreaks; in 1969 the corresponding figures were 84 percent and 52 percent. Considering all etiologies, 23,448 persons suffered from food poisoning during 1970 compared to 28,563 during 1969.

Table 5 lists the median and range of the number of persons involved in all of the confirmed and unconfirmed outbreaks for 1969 and 1970. 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 coliform origin remained about the same over the past 2 years, while the size of C. perfringens and shigella outbreaks has decreased in 1970. Foodborne salmonellosis affected larger groups of persons in 1970 than it did in the previous year. Of interest, the median number of persons, 8, involved in foodborne outbreaks considering all etiologies has remained 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%) for C. botulinum, Trichinella spiralis, and chemical food poisoning; moderately high (>50%) for C. perfringens, E. coli, salmonella, staphylococcus, Vibrio parahemolyticus, and unknown etiology food poisoning; and low (<50%) for shigella and viral food poisoning. In some etiologic categories the number of outbreaks are too small to draw reliable conclusions.

Table 7 categorizes the total of confirmed and unconfirmed outbreaks by the number of cases reported and by etiology. It is apparent that C. perfringens, E. coli, salmonella, shigella, and staphylococcal food poisoning tended to involve larger groups of people than C. botulinum, parasitic, viral, and chemical food poisoning. Over 59 percent

of outbreaks of unknown etiology involved groups of 10 or less. In 1970, 70 percent of outbreaks affected less than 30 individuals as compared to 73 percent for 1969. There were two outbreaks involving more than 1,000 people in 1970.

Table 8 lists the vehicles of infection by specific etiology. The three most commonly incriminated vehicles in decreasing order of frequency were beef, fowl, and pork. Other vehicles of importance were vegetables and fruits, fish, and bakery products. Beef and turkey tended to be associated with C. perfringens food poisoning, fowl with salmonella, water with infectious hepatitis, shigella and coliform poisoning. Pork, fowl, and beef tended to be associated with staphylococcal food poisoning.

Table 9 delineates the various places where improper food handling occurred which allowed the reported outbreaks to materialize. The heading, "Food Processing Establishments," refers to the place of 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 which precluded specific classification. In 1970, 32 percent of the vehicles were improperly handled during processing in a commercial eating place, while only 6 percent were improperly handled in preparation for marketing. The homemaker was culpable 12 percent of the time. Unfortunately, the site of improper food handling could not be determined 50 percent of the time in 1970. These figures are essentially unchanged from the 1969 data. It was hoped that the newly revised reporting form, which attempts to define more precisely breaches in proper food handling, would provide more specific information upon which to base control measures; this hope has not yet materialized.

Table 10 lists the place where the suspect food was ingested according to specific etiology. It is apparent that the majority of foodborne outbreaks, 67 percent, occurred in homes and restaurants; these two locations account for 43 percent of those who became ill with food poisoning in 1970. Illness due to C. botulinum and T. spiralis tended to be caused by foods eaten at home, those due to C. perfringens and E. coli in public facilities, and those due to staphylococcus and salmonella 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; 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 - 1970

<u>Number of reports</u>	<u>Reporters</u>
305	DH - Department of health, state or local; includes reports of EIS Officers located at state and local health departments
27	FDA - Food and Drug Administration
12	MMWR - Morbidity and Mortality Weekly Report, CDC
7	AF - Armed Forces installation and U.S Public Health Service, Bureau of Indian Affairs
5	USDA - United States Department of Agriculture
5	Other
2	Ind. - Direct report from individual
1	Salm. - Salmonellosis Unit, including Salmonella Surveillance Report, Epidemiology Program, CDC
<hr/>	
364	Total

TABLE 2

Outbreaks of foodborne illness reported by
state, local and territorial health departments
Annual Summaries 1969 and 1970

	<u>1969</u>	<u>1970</u>		<u>1969</u>	<u>1970</u>
Alabama	1	0	Missouri	2	3
Alaska	5	2	Montana	5	1
Arizona	0	2	Nebraska	0	2
Arkansas	1	2	Nevada	0	1
California	40	26	New Hampshire	0	1
Colorado	8	1	New Jersey	16	8
Connecticut	8	3	New Mexico	4	5
Delaware	0	1	New York City	22	43
District of Columbia	2	0	New York State	3	6
Florida	12	8	North Carolina	5	5
Georgia	5	12	North Dakota	0	1
Hawaii	10	3	Ohio	11	2
Idaho	4	4	Oklahoma	1	2
Illinois	11	7	Oregon	8	3
Indiana	11	3	Pennsylvania	5	13
Iowa	0	1	Puerto Rico	2	3
Kansas	1	2	Rhode Island	2	1
Kentucky	3	2	South Carolina	13	4
Louisiana	7	7	South Dakota	0	0
Maine	1	0	Tennessee	10	8
Maryland	6	4	Texas	4	1
Massachusetts	0	3	Utah	0	3
Michigan	11	3	Vermont	3	0
Minnesota	3	11	Virginia	7	6
Mississippi	0	0	Washington	62	68
<u>Other</u>			West Virginia	3	2
Virgin Islands	0	1	Wisconsin	0	4
Guam and Trust Territories	3	1	Wyoming	0	0

1969 Total 341

1970 Total 305

TABLE 3

Division by specific etiology of confirmed and unconfirmed outbreaks of foodborne illness
Annual Summary - 1970

	OUTBREAKS						PATIENTS*					
	Confirmed		Unconfirmed		Total		Confirmed		Unconfirmed		Total	
	#	%	#	%	#	%	#	%	#	%	#	%
<u>BACTERIAL</u>	120	86.3	112	49.4	232	63.1	12,121	98.5	7,496	67.5	19,617	83.5
<u>Bacillus cereus</u>	2	1.4	1	0.4	3	1.0	46	0.4	3	0.0	49	0.2
<u>C. botulinum</u>	6	4.3	1	0.4	7	1.9	13	0.1	1	0.0	14	0.0
<u>C. perfringens</u>	14	10.4	40	17.7	54	14.7	2,574	21.0	4,378	39.5	6,952	29.7
Enterococci			1	0.4	1	0.3			23	0.2	23	0.1
<u>E. coli (coliforms)**</u>	4	2.8	3	1.3	7	1.9	240	1.9	1,057	9.6	1,297	5.5
Salmonella	44	31.5	4	1.7	48	13.1	4,699	37.9	48	0.4	4,747	20.4
Shigella	8	5.7			8	2.2	1,668	13.6			1,668	7.1
Staphylococcus	42	30.2	60	26.6	102	27.5	2,881	23.4	1,818	16.3	4,699	19.8
<u>V. parahemolyticus</u>			2	0.9	2	0.5			168	1.5	168	0.7
<u>PARASITIC</u>												
<u>Trichinella spiralis</u>	9	6.5			9	2.5	41	0.3			41	0.2
<u>VIRAL</u>												
Hepatitis	4	2.8			4	1.1	107	0.9			107	0.5
<u>CHEMICAL</u>						6.1						
Monosodium glutamate	3	2.2	2	0.9	5	1.4	15	0.1	8	0.1	23	0.1
Metals	3	2.2			3	1.0	24	0.2			24	0.1
Other chemical			14	6.3	14	3.7			248	2.2	248	1.0
<u>UNKNOWN</u>			99	43.4	99	27.2			3,388	30.7	3,388	14.6
<u>TOTAL **</u>	139	100.0	227	100.0	366	100.0	12,308	100.0	11,140	100.0	23,448	100.0

* Values less than 0.05 have been omitted.

**Four outbreaks of E. coli had an unknown number of cases. In one of these outbreaks several thousand persons were ill. Because of uncertainty about the number of cases, this large outbreak was omitted from these calculations.

TABLE 4

Division by specific etiology of the total of confirmed and unconfirmed outbreaks of foodborne illness
Annual Summaries 1969 and 1970

	1969			1970		
	#	Total Outbreaks	%	#	Total Patients	%
<u>BACTERIAL</u>	243	65.5		232	63.1	
<u>Bacillus cereus</u>	3	0.8		3	1.0	
<u>C. botulinum</u>	10	2.7		7	1.9	
<u>C. perfringens</u>	65	17.5		54	14.7	
Enterococci	4	1.1		1	0.3	
<u>E. coli</u> (coliforms)**	5	1.3		7	1.9	
Salmonella	49	13.2		48	13.1	
Shigella	10	2.7		8	2.2	
Staphylococcus	94	25.3		102	27.5	
<u>V. parahemolyticus</u>	2	0.5		2	0.5	
Multiple etiologies	1	0.3				
<u>PARASITIC</u>						
Giardia lamblia	1	0.3				
<u>Trichinella spiralis</u>	11	3.0		9	2.5	
<u>VIRAL</u>						
Hepatitis	9	2.4		4	1.1	
<u>CHEMICAL</u>						
Monosodium glutamate ³	2	0.5		5	1.4	
Mushroom	4	1.1				
Metals				3	1.0	
Other chemical	21	5.7		14	3.7	
<u>UNKNOWN</u>	80	21.6		99	27.2	
<u>TOTAL</u> **	371	100.0		366	100.0	

*Values less than 0.05 have been omitted.

**Four outbreaks of E. coli had an unknown number of cases. In one of these outbreaks several thousand persons were ill. Because of uncertainty about the number of cases, this large outbreak was omitted from these calculations.

TABLE 5

Size (number of people ill) of outbreaks of foodborne illness
of specific etiology (confirmed and unconfirmed)
Annual Summaries 1969 and 1970

	1969			1970		
	Median	Range	Number of outbreaks	Median	Range	Number of outbreaks*
<u>BACTERIAL</u>						
<u>Bacillus cereus</u>	5	4-5	3	6	3-40	3
<u>C. botulinum</u>	1	1-6	10	1	1-4	7
<u>C. perfringens</u>	23	2-13,500	65	35	2-689	53
Enterococci	3	2-29	4	23		1
<u>E. coli</u> (coliforms)	36	2-250	5	41	3-150	6
Salmonella	12.5	3-400	48	19	2-353	47
Shigella	45.5	10-900	10	28	3-334	7
Staphylococcus	7.5	2-500	94	6	2-318	100
<u>V. parahemolyticus</u>	35.5	23-48	2	84	4-164	2
Multiple etiologies	30		1			
<u>PARASITIC</u>						
<u>Giardia lamblia</u>	19		1			
<u>Trichinella spiralis</u>	2	2-7	11	2	2-15	9
<u>VIRAL</u>						
Hepatitis	6	4-59	9	11	9-77	4
<u>CHEMICAL</u>						
Monosodium glutamate	3	2-4	2	2	2-11	5
Mushroom	2	1-4	4			
Other chemical	3	1-43	21	2	2-131	16
<u>UNKNOWN</u>	7	2-325	80	6	2-425	99
<u>TOTAL</u>	8	1-13,500	370	8	1-689	359*

*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 of specific etiology (confirmed and unconfirmed)
 Annual Summary - 1970

	<u>Median attack rate</u>	<u>Range of attack rates</u>	<u>Number of outbreaks *</u>
<u>BACTERIAL</u>			
<u>Bacillus cereus</u>	28.1	9.1-47.1	2
<u>C. botulinum</u>	100.0	33.3-100.0	7
<u>C. perfringens</u>	71.0	5.6-100.0	44
Enterococci	41.8		1
<u>E. coli</u>	74.6	37.6-100.0	6
Salmonella	62.5	15.4-100.0	38
Shigella	44.5	25.0-100.0	7
Staphylococcus	58.2	4.7-100.0	78
<u>Vibrio parahaemolyticus</u>	55.2		1
<u>PARASITIC</u>			
<u>Trichinella spiralis</u>	83.3	33.3-100.0	8
<u>VIRAL</u>			
Hepatitis	22.5	10.5-34.6	2
<u>CHEMICAL</u>			
Monosodium glutamate	100.0	84.6-100.0	4
Other chemical	75.0	50.0-100.0	17
<u>UNKNOWN</u>	71.7	7.5-100.0	89

*Excludes those outbreaks with inadequate information for these calculations.

TABLE 7

Division of foodborne illness of specific etiology into
outbreaks of specific size (confirmed and unconfirmed)*
Annual Summary - 1970
Selective comparative data, Annual Summary - 1969

	Size of Outbreak							
	<u>1-3</u>	<u>4-10</u>	<u>11-30</u>	<u>31-100</u>	<u>101-300</u>	<u>301-997</u>	<u>998 +</u>	<u>Total</u>
<u>BACTERIAL</u>								
<u>Bacillus cereus</u>	1	1		1				3
<u>C. botulinum</u>	5	2						7
<u>C. perfringens</u>	7	11	6	13	10	6		53
Enterococci			1					1
<u>E. coli</u> (coliforms)	1		1	3	1		1	7
Salmonella	6	10	11	4	13	3		47
Shigella	1		3	1	1	1	1	8
Staphylococcus	38	23	19	13	6	1		100
<u>Vibrio parahaemolyticus</u>		1			1			2
<u>PARASITIC</u>								
<u>Trichinella spiralis</u>	6	2	1					9
<u>VIRAL</u>								
Hepatitis		2	1	1				4
<u>CHEMICAL</u>								
Monosodium glutamate	3	1	1					5
Metals	2		1					3
Other chemical	10	2		1	1			14
<u>UNKNOWN</u>	36	23	16	15	7	2		99
<u>TOTAL</u> 1970	116	78	61	52	40	13	2	362
<u>TOTAL</u> 1969	98	113	59	61	30	8	1	371**

*In four outbreaks the number of ill was not reported: one C. perfringens, one salmonella, and two staphylococcal outbreaks.

**Total for 1969 includes 1 unknown which is not shown in text of table.

TABLE 8

Vehicles associated with foodborne illness of specific etiology (confirmed and unconfirmed)¹
 Annual Summary - 1970
 Selective comparative data, Annual Summary - 1969

	Beef*	Veal	Pork	Chicken*	Turkey*	Shellfish	Other fish	Other meat	Eggs	Milk	Cheese	Other dairy products	Bakery products	Fruits & vegetables	Chinese food	Multiple vehicles	Water	Mushrooms	Other	Unknown	Total
<u>BACTERIAL</u>																					
<u>Bacillus cereus</u>					1														1	1	3
<u>C. botulinum</u>	2						1							2						2	7
<u>C. perfringens</u> ²	22	1	1	2	13			2				1	3	3					1	5	54
Enterococci										1											1
<u>E. coli</u> (coliforms)	1													1			4		1		7
Salmonella	6		5	5	8		1	3				3	2	1		1			4	9	48
Shigella	1													1			2		1	3	8
Staphylococcus	9		20	7	7	7	3	1	1			3	13	2	2	6			5	16	102
<u>Vibrio parahemolyticus</u>						1														1	2
<u>PARASITIC</u>																					
<u>Trichinella spiralis</u>			7					1												1	9
<u>VIRAL</u>																					
Hepatitis																	4				4
<u>CHEMICAL</u>																					
Monosodium glutamate													1		3				1		5
Metals														1					2		3
Other chemicals	4						1	1		1			1	3					3		14
<u>UNKNOWN</u>	16	1	4	3		5	4	3	1	2	2	2	7	6	1	1			8	33	99
<u>TOTAL 1970</u>	60	3	37	17	29	13	10	8	5	4	2	9	24	20	9	8	10		27	71	366
<u>TOTAL 1969</u>	72		63	23	47	18	7		6	2	6	2	21	41	6	15	5	11	53		398

1 - includes suspected as well as proven vehicles

2 - 1 outbreak with 3 vehicles

* - includes some outbreaks due to meat and/or gravy and/or dressing

TABLE 9

Place where food was mishandled in foodborne
outbreaks reported by specific etiology (confirmed and unconfirmed)
Annual Summary - 1970

Selective comparative data, Annual Summary - 1969

	<u>Food processing establishments</u>	<u>Food service establishments</u>	<u>Homes</u>	<u>Unknown- Unspecified</u>	<u>Total</u>
<u>BACTERIAL</u>					
<u>Bacillus cereus</u>			1	2	3
<u>C. botulinum</u>	1		5	1	7
<u>C. perfringens</u>	1	33	3	16	53
Enterococci		1			1
<u>E. coli</u> (coliforms)		5		2	7
Salmonella	2	14	9	22	47
Shigella	1	1		6	8
Staphylococcus	5	45	13	39	102
<u>Vibrio parahaemolyticus</u>				2	2
<u>PARASITIC</u>					
<u>Trichinella spiralis</u>	6			3	9
<u>VIRAL</u>					
Hepatitis				4	4
<u>CHEMICAL</u>					
Monosodium glutamate		5			5
Metals	2			1	3
Other chemicals	2	2		10	14
<u>UNKNOWN</u>	1	9	11	77	98
<u>TOTAL</u> 1970	21	115	42	185	363
<u>TOTAL</u> 1969	31	114	48	178	371

TABLE 10

Place of acquisition of foodborne illness by
specific etiology (confirmed and unconfirmed)
Annual Summary - 1970
Selective comparative data, Annual Summary - 1969

	<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>Bacillus cereus</u>	1						1	1		3
<u>C. botulinum</u>				7						7
<u>C. perfringens</u>	23		4	11	2	8		1	5	54
Enterococci									1	1
<u>E. coli</u> (coliforms)	2		1		1				3	7
Salmonella	17	1	1	14	1	3		1	10	48
Shigella	1		1	2		2		1	1	8
Staphylococcus	31	2	2	38	1	7			21	102
<u>Vibrio parahaemolyticus</u>	2									2
<u>PARASITIC</u>										
<u>Trichinella spiralis</u>				5					4	9
<u>VIRAL</u>										
Hepatitis	1			1			1		1	4
<u>CHEMICAL</u>										
Monosodium glutamate	4			1						5
Metals				1			1		1	3
Other chemicals	3		2	8					1	14
<u>UNKNOWN</u>	29		4	44	2	6		2	12	99
<u>TOTAL 1970</u>	114	3	15	132	7	26	3	6	60	366
<u>TOTAL 1969</u>	104	1	6	157	3	38	8	11	43	371
Number of persons ill 1970	8,101	1,006	1,479	1,948	1,174	4,913	32	520	4,275	23,448
Number of persons ill 1969	2,922	6	982	1,373	681	19,842	527	416	1,814	28,563

TABLE 11

Monthly occurrence of outbreaks of foodborne illness of specific etiology
 Annual Summary - 1970
 Selective comparative data, Annual Summary - 1969

	<u>Jan.</u>	<u>Feb.</u>	<u>Mar.</u>	<u>Apr.</u>	<u>May</u>	<u>Jun.</u>	<u>Jul.</u>	<u>Aug.</u>	<u>Sep.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Unk.</u>	<u>Total</u>
<u>BACTERIAL</u>														
<u>Bacillus cereus</u>							2				1			3
<u>C. botulinum</u>		1				3		1	1	1				7
<u>C. perfringens</u>	2	6	6	4	9	4	2	4	5	3	8	1		54
Enterococci										1				1
<u>E. coli</u> (coliforms)	1	3	1	1		1								7
Salmonella	3	2	4	2	5	5	6	9	4	2	1	4	1	48
Shigella	1					2		2		1		1	1	8
17 Staphylococcus	7	4	6	13	12	7	6	12	9	12	11	3		102
<u>Vibrio parahaemolyticus</u>				1	1									2
<u>PARASITIC</u>														
<u>Trichinella spiralis</u>		2	2	1		1	1		1	1				9
<u>VIRAL</u>														
Hepatitis					1		2			1				4
<u>CHEMICAL</u>														
Monosodium glutamate		2								1	2			5
Metals		1					1	1						3
Other chemicals	1	2		2				1	2	3		3		14
<u>UNKNOWN</u>	7	4	8	4	11	10	9	10	6	11	9	10		99
<u>TOTAL 1970</u>	22	27	27	28	39	33	29	40	28	37	32	22	2	366
<u>TOTAL 1969</u>	22	26	31	26	37	39	27	28	27	39	29	14		345

SECTION D

REVISED FOODBORNE OUTBREAKS SURVEILLANCE REPORTING FORM

[illegible]

Section E - Explanation of Line Listing

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	LFT - liver
V - vomiting	A - anorexia	function
C - cramps, abdominal pain	O - other	tests
D - diarrhea	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 - LINE LISTING

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>BACTERIAL</u>												
<u>BACILLUS CEREUS</u>												
prob. <u>B. cereus</u>	7-10	Spokane, Wash.	?gravy		+		40(85)			N,V,D	DH	Camp (D)
prob. <u>B. cereus</u>	7-11	Wenatchee, Wash.	?gravy	+			6	11	12	C,D,N,F	DH	Restaurant (D)
prob. <u>B. cereus</u>	11-26	Pasco, Wash.	?dressing	+	+		3(33)	3	12	N,V	DH	Church (C)
<u>CLOSTRIDIUM BOTULINUM</u>												
<u>C. botulinum</u> type A	8-4	Gurnee, Ill. (Libertyville)	meatballs	+	+		4(4)	24	4-16 wks.	Diplopia, dysphagia, weakness, dysphonia	DH	Home (A)
<u>C. botulinum</u> type A	9-13	Liberal, Kan.	green beans	+	+		1(1)		3 dys.	Weakness, diplopia dyspnea, dysphonia	DH	Home (C)
prob. <u>C. botulinum</u>	10-15	Cambridge, Mass					1(1)		3 wks.	Diplopia, dysphagia, dysphonia, dyspnea		Home (D)
<u>CLOSTRIDIUM PERFRINGENS</u>												
<u>C. perfringens</u>	7-6	Kenosha, Wisc.	beef sandwich		+		7		48	N,V,C,D	DH	Restaurant (B)
<u>C. perfringens</u>	8-22	Atlanta, Ga	barbeque		+		600 (~2000)	16	24	D,C,N,V,	DH	Picnic (B)
<u>C. perfringens</u>	9-27	Puget Sound, Wash.	beef roast	+			375(1155)	17	23	D,C,N	DH	Restaurant on ship (D)
<u>C. perfringens</u>	10-20	New York City, N.Y.	hamburger		+		350(510)	20	2	D,C,N	DH	School (B)
<u>C. perfringens</u>	11-11	Rumson, N.J.	turkey				254(1220)	12	14	D,C,N	DH	Cafeteria (B)
prob. <u>C. perfringens</u>	2-17	New York City, N.Y.	beef roast				25(450)	15	12	D,C,N	DH	Cafeteria (B)
prob. <u>C. perfringens</u>	2-28	New York City, N.Y.	turkey		+		5(5)	9	13	D,C,N	DH	Restaurant (B)

prob. <u>C. perfringens</u>	4-20	New York City, N.Y.	
prob. <u>C. perfringens</u>	5-16	Savannah, Ga.	+
prob. <u>C. perfringens</u>	6-19	Santa Maria, Calif.	?beans
prob. <u>C. perfringens</u>	6-21	New York City, N.Y.	potato salad
prob. <u>C. perfringens</u>	7-17	Spokane, Wash.	chicken
prob. <u>C. perfringens</u>	8-1	Seattle, Wash.	duck +
prob. <u>C. perfringens</u>	8-10	Elma, Wash.	chiliburgers
prob. <u>C. perfringens</u>	8-20	Knoxville, Tenn.	beef roast
prob. <u>C. perfringens</u>	9-13	Bethlehem, Pa.	beef roast +
prob. <u>C. perfringens</u>	9-14	Arlington, Wash.	turkey
prob. <u>C. perfringens</u>	9-26	New Orleans, La.	beef roast
prob. <u>C. perfringens</u>	9-28	Seattle, Wash.	turkey
prob. <u>C. perfringens</u>	10-22	Jal, N.M.	enchiladas
prob. <u>C. perfringens</u>	10-31	St. Paul, Minn.	chop suey
prob. <u>C. perfringens</u>	11-1	New York City, N.Y.	beef roast
prob. <u>C. perfringens</u>	11-12	Decatur, Ga.	turkey
prob. <u>C. perfringens</u>	11-16	Stone Mountain, Ga.	beef roast
prob. <u>C. perfringens</u>	11-19	Seattle, Wash.	Chinese food
prob. <u>C. perfringens</u>	11-24	Scottdale, Ga.	turkey

12(17)	20	18	D,C	DH	Home (B)
40(170)				DH	Other (D)
80(120)	12	6		DH	Restaurant (B)
4(6)	12	6	D,C,V	DH	Home (B)
2(2)	5	9	D,C	DH	Home (D)
3(3)	10	36	D,C,N	DH	Restaurant (D)
2(2)	8	60	D,C,N	DH	Home (C)
2(2)	24		D,C	FDA	Restaurant (B)
74(160)	12	60		DH	Nursing home (B)
6(1545)	12	35	D,C	DH	Restaurant (B)
175(1500)	12	18	D,C,N	DH	Picnic (D)
6(6)	12	48	D,C	DH	Restaurant (D)
59(218)	10		N,C,D	DH	School (B)
91(325)	11	12	D,N,V	DH	School (B)
9(9)	12	12	D,C	DH	Home (B)
348(580)	13	12	D,C,N,F,V	DH	School (B)
170(750)	13		D,C,N	DH	Restaurant (D)
4(4)	8	2	D,C,N	DH	Restaurant (D)
48(59)	12	12	C,D,N	DH	School (B)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA		
				P.	V.	H.
prob. <u>C. perfringens</u>	11-24	Chesapeake, Va.	turkey			
prob. <u>C. perfringens</u>	11-26	Atlanta, Ga.	turkey			
prob. <u>C. perfringens</u>	12-10	New York City, N.Y.	Chinese food			
prob. enterococci (Strep. fecalis)	10-5	Locust Hill, Va.	?milk		+	
<u>SALMONELLA</u>						
<u>S. blockley</u>	4-6	Lodi, Calif	turkey with dressing	+		
<u>S. thompson</u>	5-16	Neenah, Wisc.	chicken	+		
<u>S. enteritidis</u>	5-25	New York City, N.Y.	egg nog	+	+	
salmonella	5-27	Greenwood, Fla.	ham	+	+	
<u>S. st. paul</u>	6-14	Wauwatosa, Wisc.	turkey	+		+
<u>S. thompson</u>	7-6	Clarksville, Tenn.	pork	+	+	
<u>S. enteritidis</u>	7-12	Pensacola, Fla.		+		+
<u>S. typhi-murium</u>	7-19	Johnson City, Tenn.	raw milk & ice cream	+	+	+
<u>S. enteritidis</u>	7-26	Library, Pa.	salad, ham	+	+	+
<u>S. enteritidis</u>	7-27	Baltimore, Md.		+		
<u>S. typhi-murium</u>	7-29	Statesville, N.C.	ham, barbecue	+	+	

# ill (at risk)	CLINICAL DATA			REPORTER	COMMENT
	incub. period (hrs.)	Duration of dis. (hrs.)	Symptoms		
210(400)	8	8	D,C,N	DH	Cafeteria (B)
104(380)	11	11	D,N,C,V	MMWR	Airline (B)
4(4)	12	24	N,D,C	DH	Restaurant (B)
23(55)	8	12	D,N,C	DH	Nursing home (B)
19	24	72		DH	Restaurant (B)
12	14	96	V,D,F	DH	Restaurant (B)
3(4)	6	168	N,V,C,D,F	DH	Home (C)
123(215)			N,C,D	DH	School (D)
81(300)	21	5		DH	Restaurant (D)
303(400)	40	72	D,C,F,N	MMWR	Restaurant (B)
139(900)	12			AF	Navy Base (B)
7(9)	16	48	N,V,C,D,F	DH	Home (C)
250(6000)	18	288	N,V,C,D,F	DH	Restaurant (D)
107(145)	12	96	D,F,N,C,V	DH	Nursing home (D)
56(75)	6	72		DH	Restaurant (B)

<u>S. enteritidis</u>	8-2	Pittsburgh, Pa.		+		
<u>S. enteritidis</u>	8-8	Elmsford, N.Y. (Terrytown)	hen	+		
<u>S. thompson</u>	8-9	Mendham, N.J.	turkey	+		
<u>S. poona</u>	8-12	Anchorage, Alaska	tacos	+		
<u>S. enteritidis</u>	8-16	Glennville, Ga.	eggs in ice cream	+	+	
<u>S. enteritidis</u>	8-21	Seattle, Wash.	spaghetti with sauce	+		+
<u>S. blockley</u>	8-25	Pittsburgh, Pa.	hamburger	+		
<u>S. thompson</u>	8-31	Grafton, N.D.	ice cream	+		
<u>S. typhi-murium</u>	9-3	New York City, N.Y.		+		
<u>S. enteritidis</u>	9-6	Sioux City, Neb.	roast beef	+		+
<u>S. typhi-murium</u>	9-14	Frohna, Mo.	eggs in ice cream	+	+	
<u>S. enteritidis</u>	9-23	Carlisle, Pa.	chicken	+	+	+
<u>S. enteritidis</u>	10-13	Jackson, Mich.	raw beef	+		+
<u>S. uganda</u>	10-25	Atlanta, Ga.	ham	+	+	
<u>S. panama</u>	11-27	Springfield, Ky.	turkey or ham	+		
<u>S. enteritidis</u>	12-21	Waynesboro, Pa.	eggs	+		
<u>S. typhi-murium</u>	12-22	Jackson, Tenn.	pork	+	+	+
<u>S. typhi-murium</u>	12-24	Middleton, Tenn.	turkey	+		

130(207)	18	158	D,F,N,C,V	DH	Restaurant (B)
240(406)	24		D,F,C	MMWR	Caterer (A)
112(221)	36	84	D,F,C,N,V	DH	Camp (B)
13(40)		12	D,C	DH	Restaurant (B)
12(13)	8	240	N,V,C,D,F	DH	Home (C)
5(8)	24	72	N,D,C,F,V	DH	Restaurant (B)
2(5)	30	60	N,C,V,D,F	DH	Restaurant (D)
198(1168)	24	168	D,F,N,V,C	DH	School(D)
6(9)	20	84	N,V,C,D,F	DH	Home (D)
252	32	100	D,C,F,N,V	DH	Restuarant (D)
11(11)	24			DH	Home (C)
54(150)	26	240	N,V,C,D,F	DH	Nursing_ home (B)
353(876)	18	72	D,C,F,V,	DH	Cafeteria (B)
4(7)	30		D,F,C,N,V	DH	Home (C)
12(14)	21	24	D,F,N,V	DH	Home (C)
10(20)	58	96	D,C,F,N,V	DH	Home (C)
300(2000)	24	96		DH	Restuarant
144(165)	20	96	D,F,C,N,V	DH	Caterer (B)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA		
				P.	V.	H.
<u>S. typhi-murium</u>	12-27	Mexico, Mo.	turkey		+	
prob. salmonella	8-8	Florence, Ky.				
<u>SHIGELLA</u>						
<u>S. flexneri</u>	6-19	Roxboro, N.C.	?water	+		
<u>S. sonnei</u>	8-9	St. Louis, Mo.		+		
<u>S. sonnei</u>	8-16	Maui, Hawaii	poi	+	+	+
<u>S. sonnei</u>	10-14	Le Center, Minn.	?pudding	+		+
<u>S. sonnei</u>	12-18	Albuquerque, N.M.		+		+
<u>STAPHYLOCOCCUS</u>						
<u>S. aureus</u>	1-16	Memphis, Tenn.	corn		+	
<u>S. aureus</u>	2-25	New York City, N.Y.	cole slaw		+	
<u>S. aureus</u>	4-4	New York City, N.Y.	ham		+	
<u>S. aureus</u>	5-20	Long Beach, Calif.	ham		+	
<u>S. aureus</u>	7-3	Kannapolis, N.C.	bakery		+	+
<u>S. aureus</u>	7-11	Sheboygan, Wisc.	coffee cake	+	+	+
<u>S. aureus</u>	8-5	Chicago, Ill.	shrimp salad		+	
<u>S. aureus</u>	8-23	Anderson, Ind.	ham		+	
<u>S. aureus</u>	8-24	San Diego, Calif.	coconut pie		+	
<u>S. aureus</u>	8-29	Post Falls, Idaho	chicken and potato salad		+	

CLINICAL DATA				REPORTER	COMMENT
# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)	Symptoms		
6(6)				FDA	Home (D)
19(38)	35	30	N, V, D, F	DH	(D)
27(47)	36	96	V, D, F	MMWR	Home (D)
28(69)	24	24	F, D, C, N, V	DH	(D)
~1000 (~3000)	30	72	D, F, N, V	MMWR	Home (A)
334(750)	48	96		DH	School (D)
200(800)				DH	School (D)
51	10		D, C	AF	Navy Base (D)
3(3)	4	24	D	DH	Restaurant (B)
3(3)	2	36	N, V, C, D	DH	Restaurant (B)
28(60)	4	5	N, D, C, V	DH	Home (B)
3(3)	3		N, V, C, D	DH	Home (B)
63	4	6	N, V, C, D	DH	Home (B)
22(83)	2	8	D, V, N, C		Airplane (A)
17(19)	3	7	N, V, C, D, F	DH	Home (C)
3(5)		24		DH	(D)
12(30)			N, V, C, D	DH	Picnic (C)

<u>S. aureus</u>	9-3	Forrest City, Ark.	ham	+		
<u>S. aureus</u>	9-15	Dyersburg, Tenn.	ham	+		
<u>S. aureus</u>	9-17	Cherry Hill, N.J.	chicken salad	+	+	
<u>S. aureus</u>	9-21	Kannapolis, N.C.	bakery	+	+	
<u>S. aureus</u>	9-24	Wake County, N.C.	turkey	+		
<u>S. aureus</u>	9-27	Hapeville, Ga.	cake icing	+		
<u>S. aureus</u>	10-2	Scottsdale, Ariz.	tacos	+		
<u>S. aureus</u>	10-3	Marrero, La.	chicken	+		
<u>S. aureus</u>	10-17	Stockton, Calif.	chicken	+		
<u>S. aureus</u>	10-22	Cleveland, Ohio	potato salad	+	+	
<u>S. aureus</u>	10-25	Cresapton, Md.	ham	+	+	+
<u>S. aureus</u>	11-1	New Orleans, La.	sardines	+		
<u>S. aureus</u>	11-6	Salisbury, Md.	chicken salad	+		
<u>S. aureus</u>	11-10	Uniontown, Pa.	turkey and potatoes	+	+	
<u>S. aureus</u>	11-12	Warwick, R.I.	ham	+		
<u>S. aureus</u>	11-19	Wilmington, Del.	turkey	+		
<u>S. aureus</u>	11-25	Crimora, Va.	turkey	+	+	
prob. staph.	1-1	New York City, N.Y.	Chinese food			
prob. staph.	3-1	New York City, N.Y.	cake			
prob. staph.	4-8	New York City, N.Y.	egg salad			
prob. staph.	4-11	New York City, N.Y.	clams			

200 (1300)				DH	Restaurant (B)
2				Other	Restaurant (D)
75 (388)	31	3	N, V, C, D, F	DH	School (B)
3 (3)	5		N, V, C, D	DH	Home (B)
29 (623)	4		N, V, C, D	DH	Cafeteria (B)
3 (3)	6	48	C, D, V	DH	Home (C)
2 (2)	4	7	N, V, C, D	DH	Home (B)
30	6		N, V, C, D	DH	Wedding (D)
2 (2)	1	36	N, V, C, D	DH	Home (B)
31	3		N, V, D, C, F	DH	(B)
49 (150)	4	4	N, V, D, C, F	DH	Club (B)
2 (2)	4	5	N, V, C, D	DH	Home (A)
25 (300)	4	10	N, V, D	DH	Home (B)
58 (175)	4	96	N, V, C, D	DH	Restaurant (B)
4 (5)	3	2	N, V	DH	Home (B)
105 (400)	4	24	N, V, D	DH	School (B)
236 (44))	4	6	V, N, C, D, F	DH	School (B)
6 (6)	2	2	N	DH	Restaurant (D)
10 (75)	4	24	N, V, D	DH	Caterer (B)
3 (3)	2	24	N, V, C, D	DH	Home (D)
3 (6)	3	4	N, V, C, D	DH	Restaurant (B)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA		
				P.	V.	H.
prob. staph.	4-12	Pine Mountain, Ga.	butter			
prob. staph.	4-18	New York City, N.Y.				
prob. staph.	4-20	New York City, N.Y.				
prob. staph.	5-4	Penueles, Puerto Rico	ham			
prob. staph.	5-18	New York City, N.Y.				
prob. staph.	5-21	New York City, N.Y.				
prob. staph.	6-28	New York City, N.Y.				
prob. staph.	7-1	San Francisco, Calif.	fried rice			
prob. staph.	7-9	Woodland, Wash.	ice cream			
prob. staph.	7-17	Vallejo, Calif.	?turkey			
prob. staph.	7-26	Mesilla, N.M.	chicken			
prob. staph.	8-11	East Palo Alto, Calif.	ham			+
prob. staph.	8-12	Maplewood Village, Minn.	ham salad			
prob. staph.	8-19	Seattle, Wash.	shellfish			+
prob. staph.	8-20	Sacramento, Calif.	?TV dinner			
prob. staph.	8-25	New York City, N.Y.	clams			

CLINICAL DATA				REPORTER	COMMENT
# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)	Symptoms		
14	3			DH	Restaurant (A)
5(5)	2	4	V	DH	Delicatessen (B)
15(32)	5	40	N,C,D,V	DH	Home (B)
32	2	36	D,V,C,F,N	DH	Cafeteria (C)
5(5)	4	18	D,C,N	DH	Restaurant (B)
3(3)	4	10	D	DH	Restaurant (D)
6(7)	4	7	N,V,C,D	DH	Home (C)
8	2			DH	Restaurant (B)
2(2)	3	25	N,V,D	DH	Home (D)
4(4)	2	8		DH	Restaurant (D)
42(100)	7	24	N,V,C,D	DH	Home (B)
6(7)	3			DH	Home (D)
5(20)				DH	Home (C)
14(15)	24	24		DH	Restaurant (B)
3(5)				DH	Home (D)
2(4)	5	2	N,V	DH	Restaurant (D)

prob. staph.	8-27	New York City, N.Y.	
prob. staph.	8-28	Visalia, Calif.	coconut pie
prob. staph.	8-30	Jamaica, N.Y.	
prob. staph.	9-17	New York City, N.Y.	
prob. staph.	9-19	Tacoma, Wash.	macaroni salad
prob. staph.	9-23	Olympia, Wash.	pizza
prob. staph.	10-3	New York City, N.Y.	
prob. staph.	10-5	Kingsville, Tex.	
prob. staph.	10-6	Chattanooga, Tenn.	?chili
prob. staph.	10-8	Spokane, Wash.	liver sausage
prob. staph.	10-11	New York City, N.Y.	
prob. staph.	10-16	New York City, N.Y.	fish cakes
prob. staph.	10-27	McAlester, Okla.	+
prob. staph.	11-2	Camden, N.J.	pumpkin pie
prob. staph.	11-6	Pasco, Wash.	pizza
prob. staph.	11-15	Overland, Kan.	cheeseburgers
prob. staph.	11-19	Seattle, Wash.	crab +
prob. staph.	11-26	Boise, Idaho	oyster dressing
prob. staph.	12-10	Durham, N.C.	pigs feet

12 (40)	4	8	C, V, D, N	DH	Restaurant (B)
2 (2)	5	40	D, V	DH	Home (C)
20 (139)	2	12	N, V, C, D		Airplane (D)
4	2	18	N, C, D	DH	Restaurant (B)
35 (51)	4	40	V, D, N	DH	Nursing home (B)
5 (5)	5	48	N, D, C, V	DH	Restaurant (D)
6 (12)	4	3	N, V, C, D	DH	Home (C)
18				AF	Navy Base (D)
151 (380)	6	12	C, V, D	DH	School (D)
2 (2)	3		N, V	DH	Home (D)
9 (14)	2	24	D, C, N	DH	Home (C)
4	2	14	N, V, C	DH	Restaurant (D)
5				DH	Restaurant (D)
2 (2)	5	24	N, V, D	FDA	Home (D)
2	6		V, C, D	DH	(D)
3	8	48	N, V, C, D	DH	Restaurant (D)
2 (2)	2	60	N, V, C, D	DH	Restaurant (D)
36 (91)	4	6	V, D, N	DH	Home (D)
2 (2)	8	5	N, V, C	FDA	Home (D)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA		
				P.	V.	H.
prob. staph.	12-10	Nashville, Tenn.				
prob. staph.	12-23	Greenville, S.C.	turkey			
<u>PARASITIC</u>						
<u>Trichinella spiralis</u>	2-17	Cherington, Ohio	bacon	+		
<u>Trichinella spiralis</u>	7-20	Norwood, Mass.		+		
<u>Trichinella spiralis</u>	9-18	Glasford, Ill.	pork sausage	+		
<u>Trichinella spiralis</u>	10-1	Shoshone, Idaho	bear meat	+		+
<u>VIRAL</u>						
infectious hepatitis	7-6	Riley, Kan.	water	+		
infectious hepatitis	7-16	Bigelow, Mo.	?water	+		
infectious hepatitis	10-24	Washington	punch	+		
<u>CHEMICAL</u>						
monosodium glutamate	10-2	Orange, Calif.	Chinese food			+
monosodium glutamate	11-5	Pompano Beach, Fla.	Chinese food			
monosodium glutamate	11-9	Washington	soup			
scombroid poisoning	9-20	San Pedro, Calif.	bonito fish			
zinc	7-14	Bellevue, Wash.	punch in galvanized cooler			+

CLINICAL DATA				REPORTER	COMMENT
# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)	Symptoms		
7(19)	3	24	N,V,C,D	DH	Restaurant (D)
194(1214)	3		V,C,D	DH	Caterer (D)
2(2)			myalgias, periorbital edema	DH	(D)
2(2)	360	720	myalgias, urticaria, periorbital edema	DH	(D)
3(3)			myalgia	DH	(D)
15(23)			myalgia, rash, facial edema	MMWR	(A)
12			jaundice, N,V		Gas station (D)
9(86)	45 dys.		jaundice, N,V	DH	Home (D)
9(26)	21 dys.		jaundice	DH	Church (D)
11(13)	15 min.	2	paresthesias, flushing, headache	DH	Restaurant (B)
6(6)	30 min.	2	N,V,paresthesias, dizziness	DH	Restaurant (B)
2	2		headache,V,C	DH	Restaurant (B)
2(2)	1	12	flushing, headache, itching, N,D	DH	Automobile (B)
2(5)	45 min.	24	V,C,D,N	DH	Construction site (A)

zinc	8-19	Fairmont, Utah	lemonade in galvanized cooler	+
prob. chemical toxin	2-4	New York City, N.Y.	wax beans	
niacin	4-16	New York City, N.Y.	hamburger	+
prob. chemical toxin	8-14	Olympia, Wash.	hamburger	
prob. chemical toxin	9-21	Powhatan, Va.	orange juice	
prob. chemical toxin	10-5	Helena, Mont.	cheese puffs	
prob. chemical toxin	10-16	Bozeman, Mont.	margarine	
prob. chemical toxin	10-23	Laredo, Tex.	carbonated beverage	
prob. chemical toxin	12-9	Olympia, Wash.	hamburger	
prob. chemical toxin	12-10	Olympia, Wash.	hamburger	
prob. chemical toxin	12-12	Vancouver, Wash.	pepperoni	

UNKNOWN

1-18	New York City, N.Y.	hamburger
1-24	New York City, N.Y.	chicken
1-26	Kingsville, Tex.	
3-13	New York City, N.Y.	ham
3-17	New York City, N.Y.	

20(50)	1	4	N,C,V, bitter taste	DH	Church (A)
4(4)	1	2	N,V,C	DH	Home (D)
3(3)	15 min.	30 min.	flushing, itching	DH	Home (D)
2(4)	15 min.		N,C	DH	Restaurant (D)
131(214)	1	3	V,D,F,N,fainting	DH	Cafeteria(B)
3(4)	15 min.	12	N,V,C	FDA	Home (A)
3(5)	1	24	N,V	DH	Home (D)
84(140)	1	24	N,V,C,F,headache	DH	Cafeteria (D)
2(4)	30 min.		N,C,D,headache	DH	Restaurant (D)
2(2)	2		N,C,F,D	DH	Restaurant (D)
5(5)	30 min.		N,V,D,C	DH	Home (D)
3(4)	11	12	D,C,N,V	DH	Home (C)
3(4)	16		D,N,C	DH	Home (D)
23				AF	Navy Base (D)
6(10)	4	24	N,C,D,V	DH	Home (C)
20(48)	48	48	C,D,N,V	DH	Home (B)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE	LAB DATA		
				P.	V.	H.
	4-2	Memphis, Tenn.				
	5-13	New York City, N.Y.				
	5-16	New York City, N.Y.	custard bakery			
	5-24	New York City, N.Y.				
	5-30	Everett, Wash.				
	6-8	Everett, Wash.				
	6-16	Seffner, Fla.				
	6-26	Santa Clara, Calif.				
	7-2	Winslow, Ark.				
	7-4	Wenatchee, Wash.	macaroni salad			
	7-5	Bellingham, Wash.	oysters			
	7-9	San Rafael, Calif.	?hamburger			
	7-12	Los Angeles, Calif.	salad			
	7-15	Norwood, N.J.	beefsteak			
	7-17	Metairie, La.				
	7-19	New York City, N.Y.	chicken salad			
	7-26	New York City, N.Y.				



CLINICAL DATA				REPORTER	COMMENT
# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.)	Symptoms		
94	4			AF	Navy Base (D)
3(5)	12	12	N,V,D,C,F	DH	Home (D)
3(3)	15	12	D,C	DH	Restaurant (B)
15(75)	18	24	D,C,N	DH	Home (C)
15(20)	31	25	D,N,V,C	DH	Restaurant (D)
3(3)	10	12	D	DH	Restaurant (D)
38(53)	5	14	D,C	DH	School (D)
15(138)	2	4	C,D,N	DH	School (B)
4(5)	14	24	D,V,C	FDA	Restaurant (D)
3(3)	9	5	N,V,C,D,F	DH	Home (C)
3(5)		24	D	DH	Picnic (D)
2(2)	2	24	V	DH	Home (D)
85(192)	29	36	N,C,D,V,F	DH	Restaurant (D)
7	2		D,V	FDA	Restaurant (D)
50(150)		12	N,V,C,D	FDA	Restaurant (D)
3(5)			N,C,D	DH	Restaurant (B)
5(6)	7	24	N,V,C,D,F	DH	Home (D)

8-2	Addison, Ill.	
8-2	Athens, Ohio	?lemon pie
8-3	Everett, Wash.	peanuts
8-4	New York City, N.Y.	hamburger
8-13	Everett, Wash.	whipped topping
8-16	New York City, N.Y.	
8-18	Everett, Wash.	oysters
8-24	Sayreville, N.J.	?hamburgers
8-27	Ft. Benning, Ga.	
8-29	Moses Lake, Wash.	steak
9-8	Hays, Kan.	cucumbers
9-8	South Bend, Wash.	sausage
9-12	Edina Village, Minn.	
9-20	Normal, Ill.	potato salad
9-26	Baltimore, Md.	potato salad
9-30	Missoula, Mont.	tamales
10-3	Denver, Colo.	clams
10-6	Decatur, Ga.	omelet
10-7	Spartanburg, S.C.	
10-9	Leesburg, Fla.	cheese and macaroni

50(70)	11	24	N, V, C, D	DH	Home (D)
100 (~1500)	9	36	D, C	Salm.	School (D)
3(4)	30	12	N, V, C, D	DH	Home (A)
3(3)	5		C, D	DH	Cafeteria (D)
3(5)	12	60	D, C, N	DH	Restaurant (D)
100(208)	12	18	C, D, N, V	DH	Caterer (B)
4(5)	4	12	N, D, V	DH	Home (D)
3(3)	10	24	D, C	FDA	Restaurant (D)
125				AF	Army Base (D)
2(2)	9	25	N, V, C, D	DH	Restaurant (D)
7(9)	18	24	N, V, C, D, F	DH	Home (C)
3(4)	3		N, V, D	DH	Home (D)
20(60)	4		N, V, C	DH	Home (D)
10(40)	4		N, V, C, D	DH	Picnic (C)
140(162)	14	72	N, V, C, D, F	DH	Factory (D)
3(3)	3		N, V	FDA	Home (D)
4(4)	4	4	N, V, C, D	FDA	Home (D)
3(4)	30	3	N, C, V, D	DH	Restaurant (D)
425(850)	16	10		DH	Club (D)
10(30)			N, V, D	DH	Cafeteria (D)

ETIOLOGY	ONSET	REPORTED FROM	VEHICLE
	10-13	Underwood, Wash.	hotdog
	10-19	Apache Junction, Ariz.	
	10-20	Corvallis, Ore.	
	10-23	New York City, N.Y.	
	10-27	Lincoln, Neb.	
	10-28	Spokane, Wash.	ham
	10-31	Norristown, Pa.	pizza
	11-3	Richfield, Minn.	ham
	11-4	Park City, Utah	?beef
	11-4	Salt Lake City, Utah	
	11-5	Palos Verdes, Calif.	
	11-7	Sunnyvale, Calif.	hamburgers
	11-13	Golden, Colo.	?bean dip
	11-13	Oklahoma City, Okla.	
	11-16	Pacific Beach, Wash.	soup
	11-19	Orangeburg, S.C.	
	12-1	San Jose, Calif.	potatoes
	12-6	Minneapolis, Minn.	

SECTION F

LAB DATA			CLINICAL DATA			REPORTER	COMMENT
P.	V.	H.	# ill (at risk)	incub. period (hrs.)	Duration of dis. (hrs.) Symptoms		
			6(6)		V,C	DH	Home (D)
			66(115)	30	24 N,V,D,F,C	DH	Restaurant (D)
			10(30)	36	72 N,C,D,F	DH	(D)
			3(3)	9	4	DH	Restaurant (B)
			250(1000)	12	24 N,V,C,D,F	DH	Cafeteria (D)
			3(3)		36 N	DH	Home (D)
			2(2)	4	96 N,V,C,D,F	DH	Restaurant (D)
			15(15)	18	24 N,V,C,D,F	USDA	Home (D)
			31(60)	30	N,D,V,C,F	DH	Restaurant (D)
			29(165)	20	48 N,V,D,F	DH	Nursing home (D)
			47(237)	4	13 N,V,D	DH	Restaurant (D)
			10(15)	6	12	DH	Home (D)
			2(2)	3	4 V,C	FDA	Home (D)
			18(150)	28	12 N,V,C,D	DH	Restaurant (D)
			2(2)	4	3 N,D,V,C	DH	Restaurant (D)
			129(350)	8	12 N,D	DH	School (B)
			3(4)	14	12	DH	Home (C)
			100(140)	36	24 N,V,D	DH	Restaurant (D)

12-8	Longview, Wash.	beef
12-10	Durham, N.C.	pig's feet
12-13	Sedalalia, Mo.	tuna salad
12-14	New York City, N.Y.	ravioli
12-14	Longview, Wash.	cake
12-20	Decatur, Ga.	
12-25	Kelso, Wash.	cake icing
12-26	Minneapolis, Minn.	?beef

4(6)	20	24	N,V,C	DH	Home (D)
3(40)	12	6	N,V,C	FDA	Home (D)
13(17)	25		N,D,C,F	FDA	Home (D)
4(4)	4	24	C,D	DH	Home (C)
7(7)	7	12	N,C	DH	Home (D)
7(7)			N,V,C,D,F	DH	Gas station
2(9)	995		N,V	DH	Home (D)
21(42)	36	24	N,V	DH	Restaurant (B)

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