

Salmonella

Annual Summary

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National *Salmonella* Surveillance System Annual Summary, 2002

This issue of the Annual Summary of the National *Salmonella* Surveillance System contains surveillance data on reported laboratory-confirmed *Salmonella* isolates in the United States for the year 2002. The National *Salmonella* Surveillance System collects reports of isolates of *Salmonella* from human sources from every state in the United States. This information is reported through the Public Health Laboratory Information System (PHLIS), an electronic reporting system, by the State Public Health Laboratory Directors and State and Territorial Epidemiologists to the Foodborne and Diarrheal Diseases Branch (FDDDB) and the Biostatistics and Information Management Branch (BIMB) of the Division of Bacterial and Mycotic Diseases in the National Center for Infectious Diseases.

The National *Salmonella* Surveillance System is based on data collected by state and territorial public health laboratories. *Salmonella* isolates are submitted to the state public health laboratory by clinical diagnostic laboratories. The state and territorial laboratories confirm the isolates as *Salmonella*, perform serotyping according to the Kauffmann-White scheme, and submit the data for reporting through PHLIS. Unusual or difficult isolates are forwarded to the National *Salmonella* Reference Laboratory at the Centers for Disease Control and Prevention for further characterization or confirmation. These results are reported back to the state laboratory, where they are reported through PHLIS.

The capture of isolates in the National *Salmonella* Surveillance System is considered to be fairly complete. However, some *Salmonella* isolates may not be forwarded to public health laboratories, and therefore are not reported. In addition, irrespective of the surveillance system, many cases of *Salmonella* illness are not reported because the ill person does not seek medical care, the health-care provider does not obtain a specimen for diagnosis, or the laboratory does not perform the necessary diagnostics tests. The results of surveillance reported herein should be considered underestimates.

The National *Salmonella* Surveillance System database is dynamic; the number of isolates reported for previous years may change according to the addition or correction of isolate reports. For example, the number of human *Salmonella* isolates published in the 2000 Annual Summary for 2000 was 32,022, whereas the number of isolates reported for 2000 in this Annual Summary is 33,310.

The number of isolates reported by geographical area (e.g. state) represents the area where laboratory confirmation and serotyping was performed. In some instances, the reporting area is not the same as the area of residence of the person from whom the isolate was obtained. For *Salmonella* serotype Typhi, only the first isolation in a year for each person is counted. For non-Typhi serotypes, only the first isolation in any two consecutive months for each person is counted, given that the serotype and clinical source (e.g. stool or blood) are the same.

The data presented for *Salmonella* isolates from animals and related sources (i.e. environment and feeds) are gathered from isolates submitted to the U.S. Department of Agriculture, Animal and Plant Health Inspection Services, National Veterinary Services Laboratories (USDA/APHIS/NVSL) for serotyping. These isolates are submitted by animal disease diagnostic laboratories and the USDA, Food Safety and Inspection Service (FSIS) laboratories throughout the United States. Data from other United States laboratories that serotype *Salmonella* from animals and related sources and submit isolates to the NVSL are also included in this report. *Salmonella* serotyping results from clinical cases of animal disease are designated as "clinical" and shown in Table 6. Serotyping results from herd and flock monitoring and surveillance, feed sample testing, environmental testing, research projects, and isolates from USDA, FSIS food testing programs are designated as "nonclinical" (Table 7). Samples from non-human sources are tested for *Salmonella* for a variety of purposes and are obtained in a variety of ways. The sampling is therefore neither complete nor random and undoubtedly has sampling biases. The interpretation of data should consider this limitation.

The Statistical Outbreak Detection Algorithm (SODA), developed by BIMB and FDDB, is a statistical algorithm based on the National *Salmonella* Surveillance System. It is designed to detect unusual clusters of isolates of *Salmonella* infection. SODA compares current *Salmonella* isolates reported through PHLIS by serotype to a 5-year historical baseline for that serotype and week to detect unusual increases from the baseline. Analyses can be conducted at state, regional, or national levels. Since 1996, SODA has been implemented at CDC and selected state health departments. If you would like more information on SODA, please call the PHLIS Helpdesk at telephone number (404) 639-3365.

Changes to the National *Salmonella* Surveillance System

Beginning with this report, the National *Salmonella* Surveillance System has implemented several changes in nomenclature and in surveillance practices. i) In order to improve the comparability of United States surveillance data with data from other countries, serotypes are now designated according to the Kauffmann-White Scheme (see below). Old serotype designations are included in parentheses for those serotypes that are designated differently from last year's report, and we will continue to include the old names in all reports until the transition to the new nomenclature has been made. ii) Reporting of *Salmonella* serotype I 4,[5],12:i:- (see discussion of this serotype below) was inconsistent in the past due to variability in the nomenclature used to report this serotype. This resulted in many of isolates of this serotype being reported as "Group B" or "Subspecies I". Beginning with the 2002 data, the submitted designation for this serotype was converted to the standard formula whenever possible. iii) Many non-subspecies I serotype formulas were not listed in the surveillance summaries in the past; instead, these isolates were reported by O group or subspecies only. Beginning with the 2002 surveillance data, all serotype formulas that were submitted to the national surveillance system, regardless of subspecies, were incorporated into the surveillance database. iv) Similarly, most "variants" of serotypes (monophasic, non-motile or rough isolates) were not listed by their variant formulas in the past; instead, these isolates were reported by O group or subspecies only. Beginning with the 2002 surveillance data, all serotype variants that were submitted to the national surveillance system were converted to standard serotype formulae whenever possible and incorporated into the surveillance database. We hope that the changes in our surveillance practices will improve the accuracy of the surveillance data and enhance the detection of newly emerging serotypes. These changes should be kept in mind when comparing 2002 data to previous years. The increased numbers of *Salmonella* serotype I 4,[5],12:i:-, of some non-subspecies I serotypes, and of serotype variants in 2002 may be due at least in part to improved surveillance.

In order to improve the utility of partial serotype data, we are changing the way that isolates that are not fully serotyped are designated and reported in PHLIS. In the past, these isolates were reported primarily by serogroup. While serogroups A through E are composed mainly of subspecies I serotypes, many of the other O serogroups are represented in several different subspecies. Most of the serogroups higher than E include serotypes from more than one subspecies, and nearly half (15 of 37) include serotypes from five different subspecies. Reporting isolates by serogroup alone combines unrelated isolates of different subspecies in the same serogroup category. Thus, we would like to move away from the "serogroup" categories. When full serotype information is not available, isolates are identified first by subspecies, then O serogroup and any additional serotype antigens. All available serotype information should be submitted to PHLIS (subspecies, O serogroup, O antigens, H antigens, whether one or two H antigens are detected, rough or mucoid status if appropriate). Partially serotyped isolates are listed in Table 3a.

Annual Summary Highlights for 2002

Human Sources

A total of 32,308 *Salmonella* isolates were reported from public health laboratories in 50 states in 2002. This represents a 7% decrease compared with 1992 and a slight increase over 2001 (2%). The national rate of reported *Salmonella* isolates in 2002 was 11.5 per 100,000 population based on 2000 census population figures for the United States.

Similar to other years, *Salmonella* was isolated most frequently from children under 5 years of age, accounting for 25% of isolates (Table 2). About 10% of isolates came from persons in each of the second through fifth decades of life, with declining numbers thereafter. The distribution of isolates between the sexes was similar.

The twenty most common serotypes of *Salmonella* in 2001 are listed in Table 1. These represent 80% of all *Salmonella* isolates. Of the top twenty serotypes, those with the largest percent decrease in numbers compared with 1992 were *S. Hadar* and *S. Agona* (Table 8). *S. Hadar* had consistent decreases in the time periods 1991-1996 and 1996-2001, whereas the decrease for *S. Agona* accumulated only in the years 1997-2002. A dramatic increase in *S. Newport* (184% from 1992 to 2002) has principally occurred since 1997. *S. Paratyphi B* var. L(+) tartrate + (formerly Java) and *S. Mississippi* had important increases in numbers from 1992 to 2002 (175% and 128% respectively). A relatively low number of *S. Berta* isolates were reported in 1997 compared to 1992 and 2002. The two most common serotypes, *S. Typhimurium* and *S. Enteritidis*, had substantial increases in numbers from 1991-1996, then decreased in number by 2002 (Table 8). In 2002, serotypes *S. Paratyphi B* L(+) tartrate + (formerly Java) and *S. Mississippi* increased in rank to be included in the top twenty serotypes, whereas *S. Reading*, *S. Brandenburg* and *S. Anatum* dropped from the top twenty serotypes compared with 1992.

Salmonella serotype I 4,[5],12:i:- has been introduced as the 18th most common serotype in 2002. The serotype has been identified since 1998, though many isolates were classified as only "Subspecies I" or "Group B" in the past. Recent efforts to correctly classify this serotype may be responsible for some of the increase in numbers identified in 2002. It is unknown how many of the 512 isolates reported as Subspecies I, Group B in 2002 could be this serotype (Table 3a). In 1998, this serotype was the fourth most common identified in Spain; Genetic analysis of the Spanish isolates revealed a close relationship to *S. Typhimurium* (1). Many U.S. isolates of this serotype were characterized by pulsed field gel electrophoresis (PFGE) and the patterns submitted to PulseNet, the National Molecular Subtyping Network for Foodborne Disease Surveillance. The PFGE patterns for most *S. I* 4,[5],12:i:- isolates were closely related to *S. Typhimurium* PFGE patterns, indicating that they are most likely variants of *S. Typhimurium*.

The three most common serotypes of *Salmonella* in 2002 (*Typhimurium*, *Enteritidis*, and *Newport* respectively) accounted for 51% of isolates. Compared with 1992, the frequency rank of *S. Typhimurium* and *S. Enteritidis* in 2001 remained first and second respectively, though in 1994-1996 their rank was temporarily reversed (Figure 3). A large proportion of *S. Typhimurium* isolates were resistant to multiple antimicrobial drugs; in a 2001 national survey, 53% were resistant to one or more drugs and 30% had a five-drug resistance pattern characteristic of a single phage type, DT104 (2). Similarly, *S. Newport* has emerged as a major multidrug-resistant pathogen. In 2001, 33 (26%) of 128 *S. Newport* isolates submitted to the National Antimicrobial Resistance Monitoring System were resistant to at least nine of 17 antimicrobial agents tested, including extended-spectrum cephalosporins (3). Similar to other years, there were marked regional differences in the frequency of *Salmonella* isolates among serotypes. The rate of isolations by region has been followed closely for *S. Enteritidis* as a means of assessing the impact of egg safety regulations and industry improvements. As indicated in Figure 2, *S. Enteritidis* rates of isolation had been relatively high in New England, Mid Atlantic and Pacific regions, but have shown significant decreases since 1995. Though New England had an increase in *S. Enteritidis* in 2000 and 2001 compared to 1999, the isolation rate decreased in 2002.

Non-human Sources

Data on *Salmonella* isolates obtained from non-human sources can help identify possible sources of human illness. *S. Typhimurium*, the most common serotype in humans, is identified most commonly from clinical samples from bovine sources, and from non-clinical samples from chicken sources. *S. Enteritidis* and *S. Heidelberg*, the second and fourth most common serotype in humans, respectively, are identified most commonly from clinical and non-clinical chicken sources.

Adoption of the Kauffmann-White Scheme for designation of *Salmonella* serotypes

Salmonella serotyping has been the cornerstone for epidemiological surveillance and outbreak investigations for this important pathogen. The National *Salmonella* Surveillance system has tracked *Salmonella* isolates by serotype since 1968. New subtyping methods have come and gone, but serotyping continues to provide essential subtype information for *Salmonella*. For example, PulseNet, our state-of-the-art genotyping system for *Salmonella*, relies on accurate serotype information as the “first-tier” subtype information. Pulsenet pattern determination, by itself, does not replace serotyping, but rather subdivides within serotype.

The Kauffmann-White Scheme for designation of *Salmonella* serotypes is maintained by the WHO Collaborating Centre for Reference and Research on *Salmonella* at the Institut Pasteur and is used by most of the world. Up until 2002, the CDC used a slightly different version of the scheme, the “Modified Kauffmann-White Scheme”. A unified format for serotype designation is essential for accurate surveillance via PulseNet, Global SalmSurv, and other international networks. Therefore, to improve the accuracy of our surveillance data and to make us in-step with the rest of world with respect to *Salmonella* serotype designation, the CDC adopted the Kauffmann-White Scheme on January 1, 2003.

The adoption of the Kauffmann-White Scheme affected only a few of the more common serotypes. The primary differences between the two schemes are:

i) *Salmonella* are divided into six subspecies that can be differentiated by biochemical and genetic tests. Under the Kauffmann-White Scheme, subspecies I serotypes are named; subspecies II through VI serotypes are identified by formula. The CDC last used names for those subspecies II through VI serotypes that were designated before 1968 and formulas for those serotypes identified after 1968. With the adoption of the Kauffmann-White scheme, all named serotypes are subspecies I; serotypes from all other subspecies are designated by formula. In 2002, there were four named serotypes among the top 100 serotypes that did not belong to subspecies I and were effected by this change.

- *S. Marina* will be designated as *S. IV 48:g,z₅₁*:-
- *S. Flint* will be designated as *S. IV 50:z₄,z₂₃*:-
- *S. Kralendyk* will be designated as *S. IV 6,7:z₄,z₂₄*:-
- *S. Chameleon* will be designated as *S. IV 16:z₄,z₃₂*:-

ii) Under the Kauffmann-White Scheme, serogroups E2 and E3 were combined with serogroup E1. This reflects the fact that the antigenic changes in serogroups E2 and E3 are the result of lysogenic conversion by bacteriophages and thus represent minor variants of serogroup E1 serotypes. Until now, the CDC used separate serotype names for these variants. In the future, the variants will be named as their serogroup E1 counterpart. Three serotypes in the top 100 will be affected by the merging of serogroups E2 and E3 with serogroup E1.

- *S. Anatum* will now include isolates previously designated as *S. Newington*
- *S. Newington* will become *S. Anatum* variety (var.) 15+
- *S. Newbrunswick* will become *S. Give* var. 15+.

iii) Under the Kauffmann-White Scheme, what the CDC referred to as “*S. Java*” is “*S. Paratyphi B* var. L (+) tartrate +” or “*S. Paratyphi B* var. *Java*”. *S. Paratyphi B* and *S. Java* have been a source of confusion because they have the same antigenic formula (I 1,4,[5],12:b:1,2), and are differentiated only by biotype, primarily tartrate fermentation. The distinction between these two serotypes is important epidemiologically and clinically as *S. Paratyphi B* is associated with more severe, typhoid fever-like disease. With the conversion to the Kauffmann-White scheme, both biotypes are referred to as *S. Paratyphi B*, but “*S. Java*” is now known as *S. Paratyphi B* var. L (+) tartrate +. It is essential that the tartrate test be performed to accurately identify and report the two biotypes.

As a resource to assist in the transition to the Kauffmann-White scheme, below is a brief tutorial on *Salmonella* serotype designation.

Overview of *Salmonella* Serotype Designation

1) *Salmonella* Taxonomy¹

The **genus *Salmonella*** divided into two species, *Salmonella enterica* and *Salmonella bongori*.

Salmonella enterica is further subdivided into 6 subspecies that are designated by names or Roman numerals. The Roman numerals are simpler and more commonly used. Subspecies IIIa and IIIb were historically considered a separate genus, ***Arizonae***, and are still sometimes referred to by this name.

<i>Salmonella enterica</i> subspecies	
I	<i>enterica</i>
II	<i>salamae</i>
IIIa	<i>arizonae</i>
IIIb	<i>diarizonae</i>
IV	<i>houtenae</i>
VI	<i>indica</i>

Salmonella bongori was originally designated *S. enterica* **subspecies V**. It has since been determined to be a separate species of *Salmonella*. However, for simplicity and convenience, these strains are commonly referred to as "subspecies V" for the purpose of serotype designation.

2) *Salmonella* Serotype Antigens

Salmonella serotype is based on the immunoreactivity of two surface structures, **O antigen** and **H antigen**.

O antigen is a carbohydrate (also called a polysaccharide) that is the outermost component of LPS (lipopolysaccharide). It is a polymer of **O subunits**; each O subunit is typically composed of four to six sugars depending on the O antigen. Variation in O antigen results from variation in the sugar components of the O subunit, from variation in the nature of the covalent bond between the sugars of the subunit, and from variation in the nature of the linkage between the O subunits that form the O antigen polymer.

O antigens are designated by numbers and are divided into **O serogroups**, also called **O groups**. O groups are designated by the primary **O factor(s)** that are associated with the group. Many of the common O groups were originally designated by letter and are still commonly referred to by letter (e.g., *S. Typhimurium* belongs to Group O:4 or Group B, *S. Enteritidis* belongs to group O:9 or Group D1; *S. Paratyphi A* belongs to Group O:2 or Group A).

Additional O factors are associated with some O groups and are often variably present or variably expressed. The *Salmonella* O groups and the additional O antigens that may be present in serotypes of that group are listed below. When multiple O factors are present, they are listed sequentially and separated by commas.

H antigen is the filamentous portion of the bacterial flagella; H antigen is made up of protein subunits called flagellin. The ends of flagellin are conserved and give the filament its characteristic structure. The antigenically variable portion of flagellin is the middle region of the protein, which is surface-exposed. ***Salmonella*** is unique

among the enteric bacteria in that it can express two different H antigens, which are encoded by two different genes. Typically, expression of the two genes is coordinated so that only one flagellar antigen is expressed at a time in a single bacterial cell. The two distinct flagellar antigens are referred as Phase 1 and Phase 2. "**Monophasic**" isolates are those that express only a single flagellin type. These occur naturally in some serotypes (e.g., *S. Enteritidis*, *S. Typhi*, most subspecies IIIa and IV serotypes), or can occur through the inactivation of the gene encoding the Phase 1 or Phase 2 antigen.

The H antigens of *Salmonella* are listed below. Some antigens are composed of multiple **factors**, which are separated by commas; for example, the second phase antigen of *S. Typhimurium* is composed of factors 1 and 2, which is represented as 1,2 and is grouped into **complexes**.

3) *Salmonella* Serotype Identification

Salmonella serotypes are typically identified in a cascade of tests. First, an isolate is identified and the subspecies is determined, typically by biochemical testing. O antigens and H antigens are detected in independent agglutination assays using antisera that react with groups of related antigens or a single antigen. Both H antigens can sometimes be detected in a single culture, particularly for older strains or for isolates that have been passed multiple times. When only one H antigen is detected, the isolate is inoculated onto the top of a tube of **phase reversal media**, a semisolid media containing antisera to the H antigen that has already been identified. Organisms expressing the previously detected H antigen are immobilized by the added antisera and grow only at the top of the tube. Organisms expressing the second H antigen are able to move away from the top of tube, evidenced by growth throughout the tube. The second H antigen is then determined using organisms recovered from the bottom of the phase reversal media.

4) *Salmonella* Serotype Designation

All *Salmonella* serotypes can be designated by a formula. Additionally, subspecies I serotypes are given a name (e.g., Typhimurium, Enteritidis, Typhi, etc).

The typical format for a serotype formula is:

Subspecies [space] O antigens [colon] Phase 1 H antigen [colon] Phase 2 H antigen

Examples:

I 4,5,12:i:1,2 (*S. Typhimurium*)

I 4,12:i:1,2 (*S. Typhimurium*)

I 9,12:g,m:- (*S. Enteritidis*)

II 47:b:1,5 (*S. II 47:b:1,5*)

IV 48:g,z₅₁:- (*S. IV 48:g,z₅₁:-*)

IIIb 65:(k):z (*S. IIIb 65:(k):z*)

Other conventions:

* Some O and H factors are variably present. This is indicated in the generic serotype formula by underline when the factor is encoded on a bacteriophage (e.g., 1) or by square brackets (e.g., [5]) when the antigen is variably present. For an individual isolate, if the variable factor is detected it is included in the formula without additional notation. If the variable factor is not detected, it is not listed in the formula. Weakly recognized antigens are indicated by parentheses (e.g., (k)).

* The absence of an H antigen is indicated by a minus sign ("-") for the particular phase. For example, the

"monophasic Group B" isolates that are becoming more common in the US are designated as "S. I 4,5,12:i:- " or "S. I 4,12:i:- ". Nonmotile isolates (express no H antigen) are indicated by minus signs in both phases, but can also be designated by "NM" or "nonmotile" in place of the H antigens.

* Isolates that do not express O antigen (rough isolates) or express a capsule that prevents immunologic detection of the O antigen (mucoid isolates) are indicated by "O-rough" or "Mucooid" in place of the O antigen.

* Rarely, isolates express a third H antigen that is noted by a colon followed by the antigen after the Phase 2 H antigen (e.g., S. II 13,23:b:[1,5]:z42, formerly S. Acres)

5) *Salmonella* Serotype Statistics

There were 2501 *Salmonella* serotypes as of 2001; approximately 60% belong to subspecies I. In the US, approximately 99% of reported human isolates belong to subspecies I. The "top 10" serotypes account for approximately 74% of all isolates reported in the US; the "top 100" serotypes account for about 98% of all isolates. Among the top 100 serotypes, only S. IV 48:g,z51:- (formerly S. Marina), S. IV 50:z4,z23:- (formerly S. Flint), S. IV 6,7:z4,z24:- (formerly S. Kralendyk), and S. IV 16:z4,z32:- (formerly S. Chameleon) are not subspecies I. Among the non-subspecies I isolates, subspecies IV isolates are the most common, followed by subspecies II, IIIa, and IIIb. Subspecies VI and *S. bongori* isolates are very rare.

¹ According to the Bacteriological Code, the legitimate species name for *S. enterica* is *S. choleraesuis*, and there are a few other differences from the nomenclature described. The official taxonomic designations are confusing and proposals to change them are currently under consideration. The taxonomy described here is used by most laboratories worldwide, including the CDC.

Salmonella O serogroups and associated O antigens

O Group (number designation)	O Group (letter designation)	Antigens present in all serotypes	Additional antigens that may be present in some serotypes
2	A	2,12	1
4	B	4,12	1; 5; 27
7	C1	6,7	14; (Vi)
8	C2	8	6; 20
9	D1	9,12	1; (Vi)
9,46	D2	9,46	none
9,46,27	D3	9,12,46,27	1
3,10	E1	3,10	15; 15,34
1,3,19	E4	1,3,19	10; 15
11	F	11	none
13	G	13	1; 22; 23
6,14	H	6,14	1; 24; 25
16	I	16	none
17	J	17	none
18	K	18	6; 14
21	L	21	none
28	M	28	none
30	N	30	none
35	O	35	none
38	P	38	none
39	Q	39	none
40	R	40	1
41	S	41	none
42	T	42	1
43	U	43	none
44	V	44	1
45	W	45	none
47	X	47	1
48	Y	48	none
50	Z	50	none
51		51	1
52		52	none
53		53	1
54 (provisional)		54	21; 3; 3,15; 4,12; 8,20; 6,7
55		55	none
56		56	none
57		57	none
58		58	none
59		59	1
60		60	none
61		61	none
62		62	none
63		63	none
65		65	none
66		66	none
67		67	none

H (flagellar) antigens of *Salmonella*

1 complex: 1,2 1,5 1,6 1,7 1,2,5 1,2,7 1,5,7 1,6,7	Other antigens (not part of a complex): a b c d e,h i k (k)
EN complex: e,n,x e,n,x,z15 e,n,z15	r r,i y
G complex: f,g f,g,m,t f,g,s f,g,t g,m g,m,p,s g,m,q g,m,s g,m,s,t g,m,t g,p g,p,s g,p,u g,q g,s,q g,s,t g,t g,z51 g,z62 g,z63 g,z85 m,p,t,u m,t	z z6 z10 z29 z35 z36 z36,z38 z38 z39 z41 z42 z44 z47 z50 z52 z53 z54 z55 z56 z57 z60 z61 z64
L complex: l,v l,w l,z13 l,z13,z28 l,z28	z65 z67 z68 z69 z71
Z4 complex: z4,z23 z4,z23,z32 z4,z24 z4,z32	z81 z83 z87 z88

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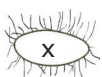


TABLE 1**The Top 20 most frequently reported Salmonella serotypes
from Human sources reported to CDC in 2002**

Human 2002			
Rank	Serotype	Reported	Percent
1	S. Typhimurium *	7062	21.9
2	S. Enteritidis	5116	15.8
3	S. Newport	4204	13.0
4	S. Heidelberg	1957	6.1
5	S. Javiana	1188	3.7
6	S. Montevideo	717	2.2
7	S. Muenchen	591	1.8
8	S. Oranienburg	585	1.8
9	S. Saintpaul	535	1.7
10	S. Infantis	463	1.4
11	S. Thompson	440	1.4
12	S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	429	1.3
13	S. Braenderup	384	1.2
14	S. Agona	337	1.0
15	S. Hadar	331	1.0
16	S. Mississippi	313	1.0
17	S. Berta	297	0.9
18	S. I 4,[5],12:i:-	291	0.9
19	S. Typhi	289	0.9
20	S. Poona	271	0.8
	Sub Total	25800	79.9
	All Other Serotyped	4879	15.1
	Unknown	449	1.4
	Partially serotyped isolates	1137	3.5
	Rough or nonmotile isolates	43	0.1
	Sub Total	6508	20.1
	Total	32308	100.0
NOTE: ----- * Typhimurium includes var. 5- (Formerly var. Copenhagen)			

TABLE 1a

**The Top 20 most frequently reported Salmonella serotypes from
Clinical and Non-Clinical Nonhuman sources reported to CDC and NVSL in 2002**

Clinical Nonhuman 2002			
Rank	Serotype	Reported	Percent
1	S. Typhimurium *	1453	21.6
2	S. Newport	1008	15.0
3	S. Agona	409	6.1
4	S. Heidelberg	327	4.9
5	S. Derby	261	3.9
6	S. Anatum	246	3.7
7	S. Choleraesuis **	204	3.0
8	S. Montevideo	195	2.9
9	S. Kentucky	157	2.3
10	S. Senftenberg	156	2.3
11	S. Dublin	137	2.0
12	S. Muenster	115	1.7
13	S. Uganda	115	1.7
14	S. Infantis	99	1.5
15	S. Oranienburg	87	1.3
16	S. I 4,[5],12:i:-	82	1.2
17	S. Mbandaka	79	1.2
18	S. Enteritidis	68	1.0
19	S. Bredeney	64	0.9
20	S. Hadar	64	0.9
	Sub Total	5326	79.1
	All Other Serotyped	1364	20.2
	Partially serotyped isolates	3	0.0
	Rough or nonmotile isolates	44	0.7
	Sub Total	1411	20.9
	Total	6737	100.0
NOTE: * Typhimurium includes var. 5- (Formerly var. Copenhagen) ** Choleraesuis includes var. Decatur and Kunzendorf			

Non-Clinical Nonhuman 2002			
Rank	Serotype	Reported	Percent
1	S. Heidelberg	2214	24.0
2	S. Typhimurium *	1134	12.3
3	S. Kentucky	799	8.7
4	S. Montevideo	583	6.3
5	S. Senftenberg	478	5.2
6	S. Derby	343	3.7
7	S. Mbandaka	246	2.7
8	S. Hadar	245	2.7
9	S. Muenster	232	2.5
10	S. Enteritidis	227	2.5
11	S. Agona	222	2.4
12	S. Anatum	216	2.3
13	S. Meleagridis	187	2.0
14	S. Newport	155	1.7
15	S. Cerro	131	1.4
16	S. Infantis	116	1.3
17	S. Saintpaul	105	1.1
18	S. Braenderup	100	1.1
19	S. Schwarzengrund	86	0.9
20	S. Reading	75	0.8
	Sub Total	7894	85.6
	All Other Serotyped	1291	14.0
	Partially serotyped isolates	1	0.0
	Rough or nonmotile isolates	33	0.4
	Sub Total	1325	14.4
	Total	9219	100.0
NOTE: * Typhimurium includes var. 5- (Formerly var. Copenhagen)			

TABLE 2

**Salmonella isolates from Human sources
by Age Group and Sex, 2002**

Age Group	Sex			Total
	Female	Male	Unknown	
< 1 Year	1371	1508	144	3023
1 to 4 Years	2357	2616	227	5200
5 to 9 Years	1150	1294	101	2545
10 to 19 Years	1360	1607	103	3070
20 to 29 Years	1614	1369	105	3088
30 to 39 Years	1592	1324	101	3017
40 to 49 Years	1540	1276	90	2906
50 to 59 Years	1235	814	68	2117
60 to 69 Years	924	617	45	1586
70 to 79 Years	805	463	40	1308
80+ Years	555	259	27	841
Unknown Age	1280	1169	1158	3607
	15783	14316	2209	32308

FIGURE 1

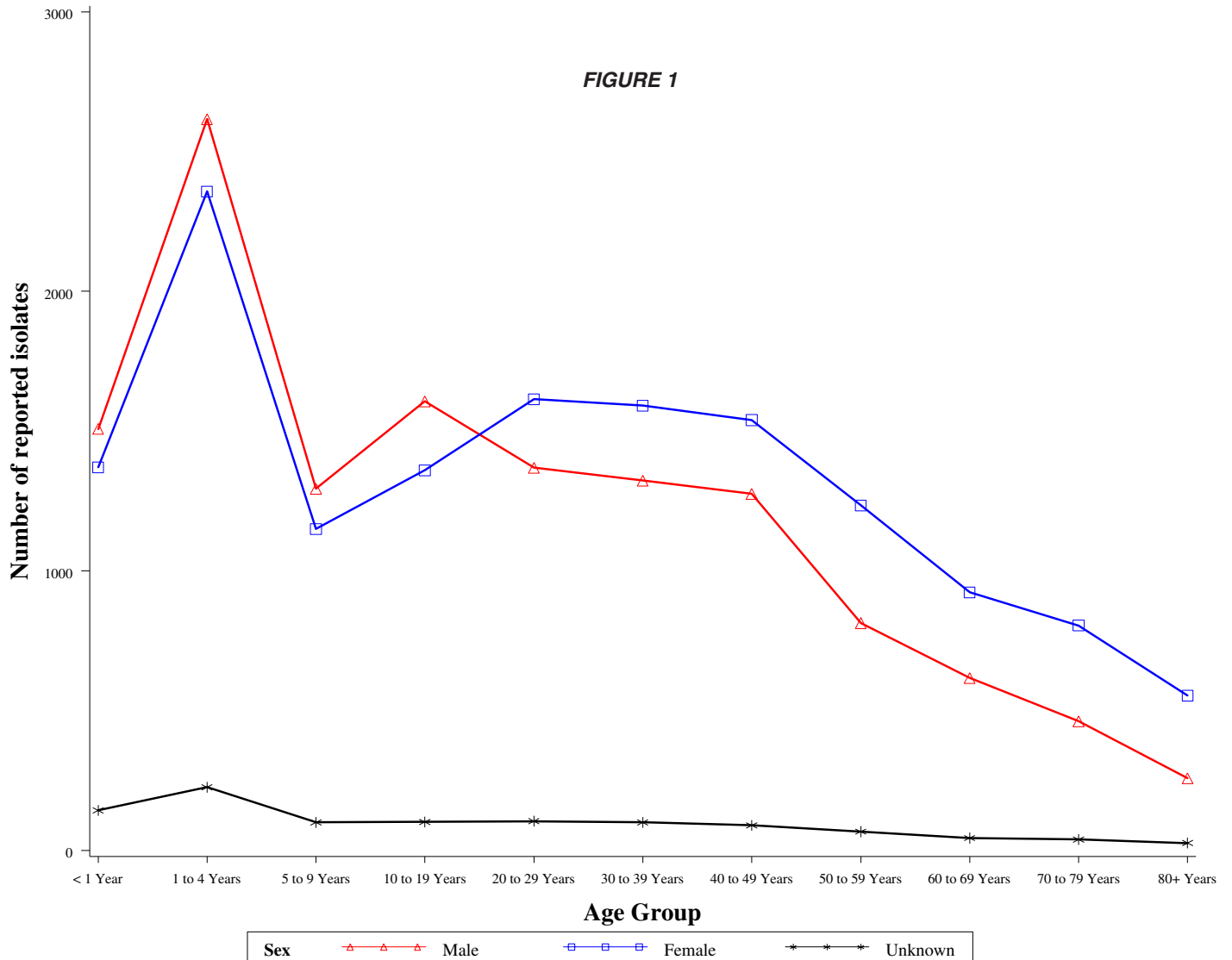


TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Aarhus	4	13	6		6	16	9	6	7	2	7	76
S. Aba									4			4
S. Abadina											2	2
S. Abaetetuba	1	2	10	10	17	8	7	7	5	4	3	74
S. Aberdeen	3	5	1	5	2	3	4	4	13	5	3	48
S. Abony	2	3	7	9	2	3	6	4	1	11	9	57
S. Abortusequi						1						1
S. Adelaide	96	74	110	98	88	70	72	95	41	80	65	889
S. Aequatoria						1		1				2
S. Aflao					1			1				2
S. Africana							2	6				8
S. Agama	1		4	3	2	2	2	2	1	1	5	23
S. Agbeni	3	1	3	5	1	3		1	13	5	4	39
S. Agege					1							1
S. Ago				1		1	1		1			4
S. Agodi											1	1
S. Agona	750	651	753	683	606	740	991	528	403	370	337	6812
S. Agoueve	1		2	2	4	3	6	2	2	3	6	31
S. Ahuza					1				2			3
S. Ajjobo		1				2	2		2		2	9
S. Alabama	3		1	1	2	2	2	4	1	1	3	20
S. Alachua	28	55	70	52	39	18	14	22	20	9	16	343
S. Alamo		2		1			1					4
S. Albany	24	30	29	49	26	21	23	17	18	17	14	268
S. Albert			2	1	1							4
S. Albuquerque		1									1	2
S. Allandale							1		1	1		3
S. Altona			1		1	1		1	4	3	3	14
S. Amager	3	2		6	1	8	3	4	7	1	2	37
S. Amersfoort	1											1
S. Amsterdam	3	3	4	11	2	9	5	6	2	5	7	57
S. Amsterdam var. 15+, 34+ (Formerly Drypool)		4	4	8	5	7	4	5	1	5	3	46
S. Anatum	158	194	146	174	271	208	138	157	177	187	213	2023
S. Anatum var. 15+ (Formerly Newington)	25	15	13	17	16	20	25	23	8	4	4	170
S. Anatum var. 15+, 34+ (Formerly Minneapolis)	4	1			1						1	7
S. Anecho	1	2		2	5	2	2	2	1		5	22
S. Ank			1		2							3
S. Annedal					1					1		2
S. Antsalova			1	2	1		2		3		1	10
S. Apapa						2		2	4	8	10	26
S. Apeyeme								1	1			2
S. Aqua	1	1		3	2	1			2	1		11
S. Aragua					1	1	1		1			4
S. Arapahoe											1	1
S. Arechavaleta	4	1	4	6	6	9	4	3	9	3	6	55

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Assen								1	1		1	3
S. Assinie		1										1
S. Athinai							1					1
S. Augustenborg		1				2				1		4
S. Austin										1		1
S. Australia										3		3
S. Avignon			1									1
S. Avonmouth											1	1
S. Azteca		1						1				2
S. Babelsberg									1			1
S. Baguida		1										1
S. Baguirmi										1		1
S. Bahati					1							1
S. Bahrenfeld		1				1						2
S. Baidon	1	1	1	14	5	5	73	77	4	2	14	197
S. Ball					2					1		3
S. Banalia										1		1
S. Banana	1	1			1	1	1		1	1		7
S. Banco							2					2
S. Bardo	4	8	8	1	28	10	9	13	18	16	49	164
S. Bareilly	94	105	83	109	115	112	153	171	182	205	178	1507
S. Barranquilla					1			1		3	1	6
S. Bassadji										1		1
S. Beaudesert									1			1
S. Belem	1							1				2
S. Benfica				2	1		1	1		1		6
S. Benin			1		1							2
S. Bere	1	1	2	1	1	8	1			1		16
S. Bergen								1	2			3
S. Berkeley							1					1
S. Berlin		1										1
S. Berta	333	401	399	367	118	87	123	143	309	330	297	2907
S. Birkenhead			2		2	7	4		2	2		19
S. Bispebjerg					1	1						2
S. Blegdam	2	6	6		2	4	3	1	2	2	3	31
S. Blijdorp					1							1
S. Blockley	86	89	76	55	51	62	61	54	28	33	38	633
S. Blukwa					1	1						2
S. Bochum							5	1		3		9
S. Bolton									1			1
S. Bonames									1			1
S. Bonariensis	4	6		5	3	3	6	4	3	5	6	45
S. Bonn			7	4	1		1		1	2		16
S. Borbeck				1					1			2
S. Bournemouth											1	1

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Bovismorbificans	26	35	40	25	41	47	64	35	53	82	73	521
S. Bracknell											1	1
S. Bradford	54	44	35	12	1	3	1		2	1	1	154
S. Braenderup	477	381	426	588	531	559	497	529	529	388	384	5289
S. Brancaster							1					1
S. Brandenburg	188	257	259	284	181	167	132	117	84	106	139	1914
S. Brazil		2		1	1	1		2				7
S. Brazos						1		1				2
S. Breda		1										1
S. Bredeney	57	49	44	57	47	51	112	44	24	79	40	604
S. Brefet		1										1
S. Brezany			1							4	2	7
S. Brikama		1			1							2
S. Bristol						1						1
S. Bron			2	2	1					1		6
S. Bronx			1			2	2			1		6
S. Brooklyn							1					1
S. Broughton				2				1				3
S. Bsilla										1	1	2
S. Budapest		1		1								2
S. Bukavu						1			1			2
S. Burundi				1								1
S. Butantan								1			1	2
S. Butantan var. 15+ (Formerly Rosenthal)									1			1
S. Buzu			1	3		5	4	1				14
S. Calabar							1	1				2
S. California	2	4	2	1	1	9	3	1		1		24
S. Camberwell							1					1
S. Canada					1				1		1	3
S. Cannstatt						1	1		1	1	3	7
S. Caracas						3		1			1	5
S. Carmel				1	1			1	1	8	9	21
S. Carno								1				1
S. Carrau	5	9	9	12	30	6	3	12	5	5	3	99
S. Carswell	1											1
S. Cerro	99	57	62	74	55	60	52	56	52	31	39	637
S. Ceyco										1	1	2
S. Chailey		1		6	4	12	9	3	3		1	39
S. Champaign			1	1								2
S. Chandans			1								3	4
S. Charity		1							1			2
S. Charlottenburg					1							1
S. Chester	30	23	21	34	26	36	24	29	22	24	22	291
S. Chicago		1	1				1				1	4
S. Chichiri										1		1

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Chincol	1	2					1	2	2			8
S. Chingola						1				1		2
S. Choleraesuis	35	50	53	50	41	25	23	25	11	8	11	332
S. Choleraesuis var. Decatur		1	1				2			1	2	7
S. Choleraesuis var. Kunzendorf	56	36	18	25	26	24	13	9	9	5	8	229
S. Clackamas	1		1	1	1	3		3	1		6	17
S. Claibornei							1	1		1		3
S. Clerkenwell										1		1
S. Coeln	1	4	2	2	7	4	5	2	3	3	3	36
S. Coleypark	2											2
S. Colindale			5	2	7	1	4	2	3	2	5	31
S. Colorado	1	1	1	1	1	1	2	2				10
S. Concord			1	4	5	2	2	3		2	1	20
S. Corvallis	1	2		1	1	1	1	1	1		1	10
S. Cotham			1					2	1		3	7
S. Cremieu						1			2	1		4
S. Cubana	32	32	61	44	34	36	72	42	30	25	20	428
S. Cullingworth					1				1			2
S. Curacao		1	1					1	2	1		6
S. Dahra								2	1	1	1	5
S. Daytona	1	5	3	3	4	6	3	4	3	4	4	40
S. Denver	1	9	2	5	2	3	1	1	1	1	2	28
S. Derby	199	170	144	213	143	152	171	174	185	121	168	1840
S. Derkle									1			1
S. Dessau						1				1		2
S. Diguel					4	2	1				2	9
S. Diourbel									1			1
S. Djakarta		2										2
S. Djelfa								1				1
S. Djugu	2		4	1	2	2	1	1	1			14
S. Doba			1	1								2
S. Doel					2							2
S. Doulassame						1	1					2
S. Drogana	3		1	3								7
S. Dublin	100	90	65	81	85	61	78	66	94	76	83	879
S. Duesseldorf	6	19	12	13	6	6	15	5	1	2		85
S. Dugbe			1						1			2
S. Duisburg (Includes Salinatis)	3		1	5	3			1	1	2	2	18
S. Dunkwa										1		1
S. Durban	2	4	11	3	8	8	10	3	4	5	1	59
S. Durham	3	1	5	6	4	2		1	3	3	4	32
S. Duval	1	2		1		1	1				1	7
S. Ealing	2	2	8	24	26	8	6	6	9	16	10	117
S. Eastbourne	5	8	13	10	13	3	8	7	10	6	18	101
S. Ebrie								1	3	2	1	7

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Edinburg		1	3	4			1	6	2	1	5	23
S. Eko	2											2
S. Ekpoui		1							1		1	3
S. Elomrane								2	1	1	1	5
S. Emek	7	4	3	6	5	7	7	8	5	2	2	56
S. Enschede	1											1
S. Entebbe	1		2		8	4		1				16
S. Enteritidis	6578	8071	9866	10201	9570	7924	6029	5343	6445	5614	5116	80757
S. Enugu				1	1	1						3
S. Epicrates											1	1
S. Eppendorf		1	1					2	2			6
S. Escanaba						3					1	4
S. Essen	3		3		2	3	2	3	4	1		21
S. Etterbeek						1						1
S. Falkensee			1	2		1						4
S. Fallowfield						3						3
S. Fann											1	1
S. Farmsen	1		3	2	2	6	4	3		1	1	23
S. Farsta											4	4
S. Fayed				1				6	3	4		14
S. Finkenwerder								1				1
S. Fischerkietz							1	1				2
S. Fischerstrasse									1		1	2
S. Florida		5	3	2	7	11	8	1	2	4	2	45
S. Fluntern					1		3			2	2	8
S. Fortlamy				2								2
S. Freefalls				2								2
S. Freetown										1		1
S. Freiburg		1										1
S. Fresno			1	1						3	1	6
S. Friedenau						1					1	2
S. Frintrop					1							1
S. Fulica						1						1
S. Fyris					2		1					3
S. Gabon							1	1			1	3
S. Galil				1		1				2		4
S. Gallinarum (Includes Pullorum)					2	1	1	1		1	3	9
S. Gamaba							1					1
S. Gambia				1		2						3
S. Gaminara	38	37	38	45	44	47	61	52	51	58	43	514
S. Garba					1					1		2
S. Garoli		1										1
S. Gateshead		3										3
S. Gatow	2	1		1			2		1	1	1	9
S. Gatuni	2	6	3	1	2		1	1	1	3		20

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Georgia			1	2			2			4	3	12
S. Gera	1											1
S. Give	123	101	95	101	114	118	92	97	86	75	55	1057
S. Give var. 15+ (Formerly Newbrunswick)	8	5	3	20	22	26	36	23	9	9	5	166
S. Give var. 15+, 34+ (Formerly Menhaden)	5		2	5	14	1					1	28
S. Glasgow										1		1
S. Glidji					1							1
S. Glostrup	78	42	13	31	13	5	10	7	6	6	2	213
S. Gloucester		2	3	2	2	2						11
S. Godesberg		1		1	1							3
S. Goeteborg						1						1
S. Goettingen	2	1				1	1	1	3		2	11
S. Goldcoast				1		1	1	1				4
S. Groenekan										1		1
S. Grumpensis		3	1	3			1	2	1	1		12
S. Guildford								1				1
S. Guinea					1							1
S. Gustavia									1	1		2
S. Haardt	10	13	10	16	6	5	2	3	4	4	3	76
S. Hadar	1532	1298	1001	812	658	643	544	516	353	307	331	7995
S. Hadejia								1				1
S. Haelsingborg	1	1										2
S. Haifa	2	4	2	2	3	4	3	6	11	4	6	47
S. Halle								1				1
S. Handen					1							1
S. Harburg						1					1	2
S. Harleystreet							1					1
S. Hartford	71	100	90	164	89	110	175	140	149	157	197	1442
S. Hatfield						1		1				2
S. Hato			1	1				1	2	3	1	9
S. Havana	49	53	38	57	59	47	77	46	26	19	28	499
S. Hayindogo							1			1	1	3
S. Heerlen			1									1
S. Heidelberg	2528	2457	1825	2095	1998	2104	1900	1816	1759	1884	1957	22323
S. Heron						1						1
S. Herston	1	1								1	1	4
S. Hidalgo		1	1			1						3
S. Hiduddify			1				3	1	1		1	7
S. Hillegersberg											1	1
S. Hillingdon					1							1
S. Hindmarsh	1	1		2	1	1	3		3	4	2	18
S. Holcomb					1	2		1		3	4	11
S. Homosassa					1		2					3
S. Horsham	1				2			3				6
S. Hull		1	1	3						1	1	7

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Hvittingfoss	22	20	14	15	44	26	28	38	34	30	43	314
S. Ibadan	20	13	24	46	33	42	39	27	17	9	9	279
S. Idikan	6	6	2		11	4	1		2		1	33
S. Ilala						1						1
S. Ilugun					3							3
S. Imo					1							1
S. Inchpark			1					1				2
S. India	1				1							2
S. Indiana	24	18	25	24	28	11	7	14	9	13	24	197
S. Infantis	499	568	520	521	503	651	600	596	609	440	463	5970
S. Inganda	1								1	4		6
S. Inpraw	1											1
S. Inverness	32	20	21	37	20	26	32	24	22	23	30	287
S. Ipswich				1	1			1				3
S. Irchel				1								1
S. Irenea								1				1
S. Irumu	7	39	45	31	18	13	15	6	5	9	2	190
S. Isangi			1	3	1	1	5	2		3	1	17
S. Israel	1											1
S. Istanbul	13	12	7	10	9	8	7	25	13	26	33	163
S. Isuge											1	1
S. Itami			1		1	2	8	7	12	50	3	84
S. Ituri	1	5	2	4	2	1	5	3	2	7	1	33
S. Jaffna		1	2									3
S. Jamaica	2	1	2	6		2	1	2				16
S. Jangwani	2	6	3	10	7	4	5	6	7	2	3	55
S. Javiana	648	641	540	758	749	675	1167	1197	1203	1067	1188	9833
S. Jedburgh	1					1						2
S. Jerusalem	1									1	1	3
S. Joal					1						2	3
S. Jodhpur							1				1	2
S. Johannesburg	53	63	48	74	44	44	32	44	29	33	19	483
S. Jos								1				1
S. Jubilee						1						1
S. Jukestown	1											1
S. Kaapstad	3				1				1	1		6
S. Kaduna		1	1									2
S. Kalamu	1									1		2
S. Kalina										1		1
S. Kambole							1					1
S. Kande										1	3	4
S. Kandla											1	1
S. Kanifing		3				1						4
S. Kaolack					1							1
S. Kedougou				4			1	2	3	1	1	12

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Kentucky	31	46	42	80	78	60	58	71	48	64	67	645
S. Kiambu	4	7	6	14	17	14	13	40	24	27	40	206
S. Kibi		1										1
S. Kibusi					3							3
S. Kimuenza			2								1	3
S. Kingabwa	1	1	1	1		2		2		3	11	22
S. Kingston	1	1	1			3	1			2	1	10
S. Kinondoni	1				1	1	1	1			1	6
S. Kintambo	2	17	19	21	19	14	20	8	3	5	8	136
S. Kirkee						1		1				2
S. Kisangani	1			2								3
S. Kisarawe		1				2	2			1	2	8
S. Kitenge				1								1
S. Kivu								2				2
S. Kodjovi			1									1
S. Koessen					1							1
S. Koketime					1							1
S. Kokoli							1					1
S. Kokomlemle	1	2	2	2	2	3	1	1	2	4	2	22
S. Konstanz										2		2
S. Kottbus	42	27	22	49	9	11	2	5	14	72	10	263
S. Kpeme		1										1
S. Kralingen								1	1			2
S. Krefeld	1	9	3	3	2	1		1	1		2	23
S. Kristianstad									1	1		2
S. Kua	1	1	1	2	1	1	1	2	1	2		13
S. Kumasi			1									1
S. Kunduchi							1					1
S. Kuru			1									1
S. Labadi	1		1	2			1					5
S. Lagos	3	1	1	2	1	1				1	1	11
S. Lamberhurst							1		1			2
S. Lamin							1					1
S. Landau						1				1		2
S. Landwasser		1					1	2		1		5
S. Langensalza					1		1					2
S. Lansing		1						1				2
S. Larochelle	2	3	4	4	4	1	6	4	2		3	33
S. Lattenkamp										1		1
S. Lawndale		1			1							2
S. Lawra	1											1
S. Leeuwarden										2		2
S. Leoben	1											1
S. Leopoldville										1		1
S. Lexington	3	5	3	1	2	1			1	5	1	22

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Lexington var. 15+ (Formerly Manila)			1					1				2
S. Lexington var. 15+, 34+ (Formerly Illinois)					1							1
S. Lille	4	3	1			3		1	1		1	14
S. Lille var. 14+ (Formerly Bornum)	1								1			2
S. Limete	1				1	6	1			1		10
S. Lindenburg	8	11	6	9	5	3	10	5	7	3	2	69
S. Lindern											1	1
S. Lindi					1							1
S. Litchfield	92	116	93	115	158	105	119	135	118	140	125	1316
S. Liverpool	6	1		2	3	3		2	1			18
S. Livingstone	27	12	16	13	18	6	5	4	6	8	8	123
S. Livingstone var. 14+ (Formerly Eimsbuettel)								1				1
S. Loanda	3	3				1			1	1		9
S. Lockleaze	1		3	2			1	1			1	9
S. Lomalinda	10	14	15	15	24	12	16	8	9	5	25	153
S. Lome		1	2		2	2				2		9
S. Lomita	1	5	1	2	5	3	3		2	4	2	28
S. London	21	14	15	36	23	33	28	41	26	24	22	283
S. London var. 15+ (Formerly Portsmouth)	1	1	3	1	1	4	2	1				14
S. Losangeles					1							1
S. Loubomo										1		1
S. Lovelace			1				1					2
S. Luciana	1		4		1	3	3	6	8	2	6	34
S. Luke			2									2
S. Madelia	10	3	5	8	21	7	12	12	16	3	4	101
S. Magwa						1	1					2
S. Maiduguri						1						1
S. Malstatt					2				1	1		4
S. Mampeza					1							1
S. Manchester								1	1	1		3
S. Mango								1				1
S. Manhattan	49	130	92	72	101	99	73	78	72	49	89	904
S. Mapo	1	1		1								3
S. Maracaibo											2	2
S. Maricopa	1											1
S. Marshall										1		1
S. Maryland						1	1					2
S. Matadi		6	20	10	27	9	4	2	9	3	5	95
S. Matopeni							2			1		3
S. Mbandaka	130	167	118	154	223	189	147	231	154	161	167	1841
S. Meekatharra										1		1
S. Meleagridis	8	15	12	30	207	43	39	14	13	19	6	406
S. Meleagridis var. 15+ (Formerly Cambridge)				1				1				2
S. Memphis		2			1	1		1				5
S. Menden								1				1

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Mendoza	1		1			1	3	1		2		9
S. Menston	2					1				2		5
S. Mgulani					2			2				4
S. Miami	70	98	126	74	52	76	99	95	80	68	130	968
S. Michigan			3	8	1		2	2	1	1		18
S. Midway	1											1
S. Mikawasima	7	2	1	7		2		4	6	3	2	34
S. Milwaukee										4		4
S. Minnesota	19	28	13	36	28	26	17	23	21	18	35	264
S. Mississippi	137	156	152	199	180	205	314	248	286	336	313	2526
S. Moero				2								2
S. Molade	1	1	1			1	1		4			9
S. Mono			1	1			2			2	4	10
S. Mons					2						1	3
S. Monschau	9	8	9	9	11	10	3	5	5	7	5	81
S. Montevideo	559	789	631	685	1227	718	828	851	835	626	717	8466
S. Morehead	1	1	1	2								5
S. Moscow	15				1		4			1		21
S. Moulaine										1		1
S. Moundou								1				1
S. Mountpleasant				1		1	1			1		4
S. Mowanjum			1		2							3
S. Mpouto			1			1						2
S. Muenchen	449	657	559	754	595	543	639	1332	639	583	591	7341
S. Muenster	47	69	100	87	96	73	68	65	113	64	48	830
S. Muenster var. 15+ (Formerly Newhaw)				4	1	1	1			1	1	9
S. Muenster var. 15+, 34+ (Formerly Arkansas)	1					1	2	4	2		1	11
S. Mundonobo									1			1
S. Nagoya			1			1					1	3
S. Namibia					1							1
S. Napoli					1			2	2		1	6
S. Narashino		1		1	1	1						4
S. Nchanga							1		1			2
S. Ndolo		1								1		2
S. Nessziona						4			1	2		7
S. Neudorf		1										1
S. Newlands					1							1
S. Newmexico	1	3	2			1			4	2	2	15
S. Newport	1481	1487	1673	2566	1985	1584	2272	2618	3061	3157	4204	26088
S. Newrochelle				2	1	1	1	1				6
S. Newyork					3	4		1				8
S. Ngili			1								2	3
S. Ngor								2				2
S. Niakhar	1											1
S. Nigeria					1				1			2

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Nikolaiifleet										1		1
S. Nima			1	1	4	1	5	1	4	6	13	36
S. Nitra					3			1		1		5
S. Nola					1	1				1		3
S. Norwich	41	59	98	51	52	56	67	74	68	96	106	768
S. Nottingham	1	1	3	3	3	5	2		4	2	1	25
S. Nyanza											1	1
S. Nyborg var. 15+ (Formerly Selandia)	1											1
S. Oakland	2	3	4	1	4			1	1	1	1	18
S. Ochiogu		1										1
S. Oerlikon			1									1
S. Offa	2	1										3
S. Ohio	161	132	101	105	67	100	79	77	85	63	57	1027
S. Ohio var. 14+ (Formerly Nienstedten)		1	2							1		4
S. Okatie		1		1	1							3
S. Oldenburg		1					1	1			1	4
S. Onderstepoort				1	2			1	2	1	2	9
S. Onireke			1	1								2
S. Ontario		2						1				3
S. Oranienburg	597	522	602	595	690	623	693	616	560	595	585	6678
S. Oranienburg var. 14+ (Formerly Thielallee)											2	2
S. Orientalis				2	6		1	2	5		1	17
S. Orion	4	3	1	1	6	3	1		3	3		25
S. Orion var. 15+ (Formerly Binza)	1	1	2	1			1	1		2	1	10
S. Orion var. 15+, 34+ (Formerly Thomasville)	4	1	2	1	1	2	2	4	2	1		20
S. Oritamerin	1								1	3	1	6
S. Oslo	14	19	14	13	31	25	31	28	20	23	19	237
S. Othmarschen			4	2	6	6	7	20	27	14	17	103
S. Ouakam	2	7	2	4						1		16
S. Oudwijk							1			1		2
S. Overschie		1		3	4	3	3	2	1	1	1	19
S. Oyonnax									1			1
S. Pakistan		1			2	4		6	3	5	5	26
S. Panama	185	173	163	173	148	144	119	132	156	160	150	1703
S. Papuana	1			1		1				1		4
S. Paratyphi A	80	53	79	86	86	72	85	77	93	85	106	902
S. Paratyphi B	110	208	228	241	298	159	189	172	120	178	134	2037
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	156	176	172	268	289	184	248	314	458	466	429	3160
S. Paratyphi C	2	1	2	2	1	1		1		1		11
S. Patience					1						1	2
S. Penarth									1	1		2
S. Pensacola		8	3	11	4	7	5	8	10	8	8	72
S. Pharr								1				1
S. Planckendael						1						1
S. Plymouth	1			1	1							3

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Poano	1	2	6	2	5				1		8	25
S. Pomona	9	7	6	23	29	43	19	28	26	38	61	289
S. Poona	218	295	376	531	415	293	346	249	334	330	271	3658
S. Portland		2										2
S. Potsdam	8	8	6	5	3	10	6	9	2	6	4	67
S. Praha	2	1	3	1				1	1			9
S. Preston		1										1
S. Putten	1	1	1	8	6	5	9	3	2	9	4	49
S. Quebec							1					1
S. Quiniela	1		2			1	1					5
S. Ramatgan			1					1				2
S. Raus	2		1	2	3		3	3				14
S. Reading	430	363	257	197	131	167	81	97	94	53	80	1950
S. Rechoivot										1		1
S. Redlands	1				1	1						3
S. Regent				2								2
S. Remo		2		1	2		1	2		3		11
S. Richmond	4	4	3	7	6	7	4	2	7	6	10	60
S. Ridge								1		3	1	5
S. Riggil										1		1
S. Riogrande	1			1				1				3
S. Rissen	4	6	10	4	5	9	6	6	10	3	7	70
S. Rittersbach											1	1
S. Romanby		1		5	5	4	1	6	5	1	1	29
S. Roodepoort						1	2	2	1	1	2	9
S. Rostock					1					2		3
S. Rottneest								1				1
S. Rubislaw	67	58	77	83	71	81	88	97	76	66	79	843
S. Ruiru	1							1		1		3
S. Ruzizi								1			1	2
S. Saarbuecken							1				1	2
S. Saboya							1					1
S. Saintpaul	529	380	479	467	562	436	479	472	545	469	535	5353
S. Salford									1			1
S. Sandiego	100	92	82	117	56	59	55	104	142	114	144	1065
S. Sandow	3	1	2									6
S. Sangera			2	1							1	4
S. Sanjuan								2	3			5
S. Sanktgeorg										1		1
S. Santiago	2			1	1			1				5
S. Sao					1							1
S. Sapele											1	1
S. Saphra	7	1	6	11	11	41	16	13	14	11	3	134
S. Sarajane							1					1
S. Schleissheim	3		1	5	9	6	8	6	7	4	7	56

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Schoeneberg						1				1		2
S. Schwarzengrund	145	169	167	162	157	144	123	155	112	104	99	1537
S. Schwerin					1							1
S. Sculcoates							1					1
S. Seegefeld									1			1
S. Sendai		3		1			2	1	1		1	9
S. Senegal									1	2	1	4
S. Senftenberg	151	126	130	91	167	180	142	120	147	143	123	1520
S. Seremban		2			1	1			1	1	1	7
S. Serrekunda							1					1
S. Shamba						1						1
S. Shangani					1							1
S. Sharon				1								1
S. Sherbrooke									1			1
S. Shubra	2	3	3	9	2	3	4	7	5	3	7	48
S. Simi				2							1	3
S. Singapore	6	4	4	4	12	3	12	4	5	1	2	57
S. Sinstorf	1	2	1	9	4	8	1	3	3	7		39
S. Skansen				1			1					2
S. Soahanina	1	1	1	1		1			1			6
S. Soerenga		2	1		6	1		2	2	3	1	18
S. Somone		1	1		5	3	1	1		1	3	16
S. Soumbédioune			4									4
S. Southampton	1							1	1			3
S. Southbank					1							1
S. Stachus					1	3		2	1			7
S. Stanley	136	143	217	481	200	164	193	172	237	170	174	2287
S. Stanleyville	13	5	5	51	26	24	16	11	33	18	18	220
S. Stellingen			1	2		3	1					7
S. Stendal				1								1
S. Sterrenbos			1	1								2
S. Stockholm								4	2			6
S. Strasbourg					1					1		2
S. Suberu						1	1					2
S. Suelldorf								1				1
S. Sundsvall	3	3	5	17	25	47	7	4	4	4	7	126
S. Sunnycove	1											1
S. Sya	3								1			4
S. Szentes											1	1
S. Tafo								1				1
S. Takoradi	2	2		1	4	5	4	4			1	23
S. Taksony		2			5	1						8
S. Tallahassee	3	8	2	6	5	18	8	5	3	2	4	64
S. Tamale			1		2							3
S. Tambacounda		2		3		1	1	1	1			9

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Tamberma		1										1
S. Tampico								2			1	3
S. Tananarive				1								1
S. Tangerang				1						1		2
S. Teddington											1	1
S. Teko							1					1
S. Telaviv				1			1		1			3
S. Teitelkebir	5	5	8	4	13	12	26	15	14	10	11	123
S. Tennessee	98	133	156	112	96	31	63	29	24	32	36	810
S. Texas					1							1
S. Thies								1				1
S. Thompson	690	576	549	625	586	695	571	602	606	514	440	6454
S. Tienba							1					1
S. Tilene			1	4	7	2		1	2		2	19
S. Tokoin	1			3					3			7
S. Toowong						1						1
S. Tornow										2		2
S. Toucra			2	3	3				1		2	11
S. Trachau	1					1						2
S. Travis						1		1		1		3
S. Treforest										2		2
S. Tsevie			1	1	1					2		5
S. Tshiongwe	2	2	3	2	4				2		2	17
S. Tucson	1	1	2	2	1	3		1			1	12
S. Typhi	449	472	507	442	440	349	382	352	397	343	289	4422
S. Typhimurium	7720	8436	7972	9147	9002	8289	8100	7125	6469	6047	6260	84567
S. Typhimurium var. 5- (Formerly var. Copenhagen)	230	307	393	555	499	827	718	926	899	951	802	7107
S. Typhisuis						3				1		4
S. Tyresoe					1							1
S. Uccle					1	4	4	1	2			12
S. Uganda	23	29	19	28	63	51	44	58	55	96	59	525
S. Uganda var. 15+ (Formerly Kinshasa)			2	4	7	6	1	3	4	1	3	31
S. Ughelli									1			1
S. Ullevi						1						1
S. Umhlali									1			1
S. Uppsala				1	1		1		1			4
S. Urbana	26	52	63	72	60	57	46	56	38	53	41	564
S. Uzaramo	3	1	1	5			3	1	2	1		17
S. Vancouver		1	3	1								5
S. Vejle				2		2	1	1		1	1	8
S. Veneziana										1		1
S. Victoria	1		3	1	3	2	1			1	1	13
S. Vietnam				1								1
S. Vilvoorde				1	2	1						4
S. Virchow	72	57	54	60	67	71	64	70	103	80	60	758

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Virginia		2		7	7	2		10	1	5	4	38
S. Vitkin										1		1
S. Vridi				1								1
S. Wa					1			1				2
S. Wagenia									1			1
S. Wandsworth	4	1	5	14	6	5		9	12	3	5	64
S. Wangata	2	1	1	1		1	1		2		1	10
S. Waral			1	1		1					1	4
S. Warnow											2	2
S. Washington			1	2	1	3		1				8
S. Waycross	4	3	2		4	4	2	2	4	4	1	30
S. Wayne				2	1	1						4
S. Welikade			1			1	1	1		3	1	8
S. Weltevreden	68	98	86	89	86	106	67	54	58	89	65	866
S. Weltevreden var. 15+ (Formerly Lanka)	1	1	3				1	1	1	3		11
S. Wentworth		1										1
S. Wernigerode							3			1		4
S. Weslaco			1	1			2	1				5
S. Westerstede								1				1
S. Westhampton		1	2	3	6	5	3	2		3	5	30
S. Westhampton var. 15+ (Formerly Halmstad)	1		3		1			2				7
S. Westhampton var. 15+, 34+ (Formerly Canoga)	28	1										29
S. Westphalia			1									1
S. Wichita			1									1
S. Widemarsh					3	2		1			2	8
S. Wien	3	4	3	1				1	1	3		16
S. Wil					1			1				2
S. Willemstad		1		1		1						3
S. Winneba								1			1	2
S. Wippra			2									2
S. Wisbech					2							2
S. Worthington	56	41	44	50	58	48	38	28	28	29	27	447
S. Yarrabah					1							1
S. Yeerongpilly					1							1
S. Yoruba							1				1	2
S. Yovokome								1				1
S. Yundum											1	1
S. Zaiman				1					1			2
S. Zanzibar		1	3	2	2	2	1	1				12
S. I 3,10:e,h:-											2	2
S. I 3,10:l,v:-											1	1
S. I 3,15,34:l,v:-											1	1
S. I 4,12:-:1,7											1	1
S. I 4,5,12:-:1,2											3	3
S. I 4,[5],12:b:-											10	10

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. I 4,[5],12:d:-											5	5
S. I 4,[5],12:e,h:-											1	1
S. I 4,[5],12:i:-							34	44	119	149	291	637
S. I 4,[5],12:r:-											1	1
S. I 6,7:-:1,5											9	9
S. I 6,7:e,h:-											2	2
S. I 6,7:k:-											2	2
S. I 6,7:l,w:-											1	1
S. I 6,7:z4,z23:-											1	1
S. I 6,8:-:1,5											1	1
S. I 6,8:d:-											3	3
S. I 6,8:z10:-											1	1
S. I 9,12:-:1,5											4	4
S. I 9,12:a:-											1	1
S. I 9,12:l,v:-											3	3
S. I 9,12:l,z28:-											11	11
S. I 13,22:b:-											2	2
S. I 13,23:i:-											1	1
S. II 3,10:g,t:- (Formerly Islington)			1									1
S. II 3,10:m,t,e,n,x (Formerly Stikland)			1									1
S. II 4,12,[27]:b:[e,n,x] (Formerly Sofia)							1					1
S. II 4,12,[27]:e,n,x:1,[5],7 (Formerly Makumira)			1									1
S. II 4,12,[27]:z:e,n,x (Formerly Nordenham)								1				1
S. II 4,12:l,w,e,n,x (Formerly Kilwa)			11	4	2		1	3	4			25
S. II 6,7:l,z28:1,5:[z42] (Formerly Heilbron)	3	1					1					5
S. II 9,12:g,m,[s],t:[1,5,7]:[z42] (Includes Hamburg)				4		1		1		5	1	12
S. II 9,12:g,s,t,e,n,x											1	1
S. II 9,12:z39:1,7 (Formerly Wynberg)									2			2
S. II 9,46:g,[m],[s],t:[e,n,x] (Formerly Duivenhoks)									1			1
S. II 9,46:z4,z24:z39:z42 (Formerly Maarssen)		1										1
S. II 11:g,[m],s,t:z39											1	1
S. II 11:m,t,e,n,x (Formerly Lincoln)									1			1
S. II 13,22:g,m,t:[1,5] (Formerly Limbe)		1		1		1						3
S. II 13,22:z29:1,5 (Formerly Clifton)											1	1
S. II 13,23:a:z42 (Formerly Tygerberg)		1		2	1							4
S. II 13,23:b:[1,5]:z42 (Formerly Acres)					1							1
S. II 13,23:g,m,[s],t:[e,n,x] (Formerly Luanshya)								1			1	2
S. II 13,23:z:1,5 (Formerly Nachshonim)					1				1			2
S. II 16:l,w:z6 (Formerly Noordhoek)				1								1
S. II 16:z4,z23:- (Formerly Haddon)				1								1
S. II 17:g,t:- (Formerly Bleadon)											1	1
S. II 17:g,t:[e,n,x,z15] (Formerly Bleadon)									1			1
S. II 21:z10:[z6] (Formerly Wandsbek)									1	2		3
S. II 35:g,m,s,t:-											1	1
S. II 40:c:e,n,x,z15 (Formerly Suarez)									1			1

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. II 40:z4,z24:z39 (Formerly Degania)				1				1				2
S. II 41:z10:1,2 (Formerly Negev)			1	1								2
S. II 41:z10:z6 (Formerly Lichtenberg)	1							1			1	3
S. II 42:b:e,n,x,z15 (Formerly Uphill)					1						1	2
S. II 42:g,t:- (Formerly Fremantle)				1								1
S. II 47:b:1,5 (Formerly Phoenix)		8	3	9	9	5	4	6	6	2		52
S. II 47:d:z39 (Formerly Quimbamba)				3					2		4	9
S. II 48:a:z6											2	2
S. II 48:d:z6 (Formerly Hagenbeck)	2			1	1	1		1	3		3	12
S. II 48:g,m,t:- (Formerly Erlangen)								1				1
S. II 48:k:z39 (Formerly Sakaraha)							1				1	2
S. II 50:b:z6							3			1	4	8
S. II 60:g,m,t:z6 (Formerly Setubal)					1							1
S. IIIa 17:z4,z23:-											1	1
S. IIIa 18:z4,z23:-											1	1
S. IIIa 18:z4,z32:-					1							1
S. IIIa 21:g,z51:-											1	1
S. IIIa 41:z4,z23:-											4	4
S. IIIa 45:z4,z24:-											1	1
S. IIIa 48:g,z51:-								3	3	2	7	15
S. IIIa 48:z4,z23:-											1	1
S. IIIa 51:z4,z23:-											1	1
S. IIIa 53:z4,z23,z32:-								4	2			6
S. IIIa 62:z4,z23:-											1	1
S. IIIb 16:z10:e,n,x,z15											2	2
S. IIIb 17:z10:e,n,x,z15											1	1
S. IIIb 38:(k):z35									1		1	2
S. IIIb 38:l,v:z53									1	1		2
S. IIIb 47:k:z35											2	2
S. IIIb 48:i:z				1	4	1		1	3	1	1	12
S. IIIb 50:k:z											3	3
S. IIIb 50:k:z53											1	1
S. IIIb 50:r:z											2	2
S. IIIb 50:z:z52											1	1
S. IIIb 60:r:e,n,x,z15											1	1
S. IIIb 60:r:z											1	1
S. IIIb 61:c:z35											1	1
S. IIIb 61:i:z				1								1
S. IIIb 61:k:1,5,(7)								3		1		4
S. IIIb 61:l,[v],[z13]:-											1	1
S. IIIb 61:l,[v],[z13]:1,5,[7]							1	2			16	19
S. IIIb 61:r:z53											1	1
S. IIIb 65:(k):z								1				1
S. IV 6,7:z36:- (Formerly Argentina)	1											1
S. IV 6,7:z4,z23:- (Formerly Roterberg)		1	1	1	2		1		2			8

TABLE 3

**Salmonella isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. IV 6,7:z4,z24:- (Formerly Kralendyk)	5	5	3	10	15	4	14	3	14	6	8	87
S. IV 11:z4,z23:- (Formerly Parera)	2	2	4	7	7	2	4	2		2	1	33
S. IV 16:z4,z23:- (Formerly Ochsenzoll)			1			2						3
S. IV 16:z4,z32:- (Formerly Chameleon)	3	9	9	12	11	7	8	5	12	19	11	106
S. IV 21:g,z51:-											1	1
S. IV 21:z4,z23:- (Formerly Soesterberg)		1							1			2
S. IV 40:g,z51:- (Formerly Seminole)				1								1
S. IV 40:z4,z32:- (Formerly Bern)								2	2			4
S. IV 43:z36,z38:- (Formerly Volksdorf)		1	1		2				1			5
S. IV 43:z4,z23:- (Formerly Houten)	5	3	7	3	21	1	6	10	2	5		63
S. IV 43:z4,z32:- (Formerly Tuindorp)		2		1	1	2	1				2	9
S. IV 44:z36:-											4	4
S. IV 44:z4,z23:-						4	6	14	3	3	12	42
S. IV 44:z4,z32:- (Formerly Lohbruegge)				2	4			2	1		2	11
S. IV 45:g,z51:-							2	1	2	2	1	8
S. IV 48:g,z51:- (Formerly Marina)	17	30	53	75	81	36	47	44	46	45	38	512
S. IV 50:g,z51:- (Formerly Wassenaar)	11	16	19	28	18	14	6	11	6	14	21	164
S. IV 50:z4,z23:- (Formerly Flint)	20	30	32	39	34	43	55	64	57	13	6	393
S. IV 50:z4,z32:- (Formerly Bonaire)	1	1		1	1			1				5
S. bongori ser. 48:z35:- (Formerly Bongor)				1	1				1			3
Partially serotyped isolates	1061	1286	1483	1375	1367	1036	1051	1015	1164	1437	1137	13412
Rough or nonmotile isolates											43	43
Unknown	2136	1649	1468	952	673	382	515	399	663	588	449	9874
Total	34688	36917	37501	41222	39035	34608	33971	32782	33310	31673	32308	388015

TABLE 3a

***Salmonella* partially serotyped isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
Group 51	1				1	1	2	1		2		8
Group 52					2							2
Group 53			2	1	5	3	2	2	2	2	1	20
Group 54				1								1
Group 56					3	1			1	1		6
Group 57							1					1
Group 58		3		3		3	2	1	2	2		16
Group 59		1	2			1						4
Group 60			3	2	6	3	2	2	2	4		24
Group 62								1				1
Group 63								1				1
Group 64		1										1
Group 65			1	2	2	6			1	1	1	14
Group D3							2		3			5
Group F	7	2	6	3	5	2	6		2	47	6	86
Group G	7	22	34	73	42	8	17	15	17	30	17	282
Group H	1	3	2	2	4		2	2	6		5	27
Group I	3	2	10	5	6	5	44	46	6	7	2	136
Group J		2		1	1			1		9	2	16
Group K	6	1	2	3	5	2	4	4	4	4	4	39
Group L	1		3	2		1	1		1	2	1	12
Group M						2				1	3	6
Group N	1	1			1		1			1	2	7
Group O			3	2	3	2	1	4	1	6	6	28
Group P		11	4	4	1	4	1		3	2	3	33
Group Q				1		1	1	2		1		6
Group R	4	2	1	2	3		3	1	10	7	3	36
Group S		3	5	5	5	5	1	1	4	6		35
Group T					1	1						2
Group U		2	2	3	4	1			2	1		15
Group V	2	1	6	15	26	33	9	7	7	12	10	128
Group W	2	13	24	15	21	10	3	3	2	6	4	103
Group X	2	1	1	1	10	9	2	4	1	1		32
Group Y	6	14	14	15	15	11	4	15	12	22	12	140
Group Z	5	16	18	18	16	13	6	14	20	104	72	302
S. Subspecies I	4	2	23	26	32	22	72	81	99	68	57	486
S. Subspecies I, Group A	1	1	7	4	3	1	2	3		1		23
S. Subspecies I, Group B	475	539	559	601	582	507	532	438	585	508	512	5838
S. Subspecies I, Group C1	124	110	137	108	123	103	85	138	86	116	90	1220
S. Subspecies I, Group C2	107	163	200	111	108	64	51	48	36	106	77	1071
S. Subspecies I, Group D1	202	280	254	182	186	116	113	80	95	185	111	1804
S. Subspecies I, Group D2	1			1	3	2	1	1	1	1	1	12
S. Subspecies I, Group E1 (Includes Groups E2 and E3)	13	7	21	20	23	17	16	18	48	61	24	268
S. Subspecies I, Group E4	2	2	3	2	3	2	3	2	1	1		21
S. Subspecies I, Group O:30											1	1

TABLE 3a

***Salmonella* partially serotyped isolates from Human sources
by Serotype and Year, 1992-2002**

Serotype	Year											Total
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
S. Subspecies II	5	10	9	7	22	8	5	6	8	11	6	97
S. Subspecies IIIa	4	5	21	20	11	7	12	16	14	15	12	137
S. Subspecies IIIa, Group O:63											1	1
S. Subspecies IIIa/IIIb	58	33	60	38	31	21	13	17	32	35	37	375
S. Subspecies IIIb	9	19	21	26	13	10	7	9	21	13	24	172
S. Subspecies IIIb, Group O:57											1	1
S. Subspecies IIIb, Group O:61	2	9	11	17	17	6	5	5	4	10	2	88
S. Subspecies IV	6	5	13	31	21	22	17	26	24	25	26	216
S. Subspecies IV, Group O:11											1	1
S. Subspecies VI				1	1				1			3
Total	1061	1286	1482	1374	1367	1036	1051	1015	1164	1437	1137	13410

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=New England

Serotype	State						Total
	Connecticut	Maine	Massachusetts	New Hampshire	Rhode Island	Vermont	
S. Aberdeen			1				1
S. Abony					1		1
S. Adelaide	1		3	2	1		7
S. Agona	3		6		3		12
S. Alachua			1				1
S. Amager			1				1
S. Amsterdam var. 15+, 34+ (Formerly Drypool)			2				2
S. Anatum	1		6				7
S. Anatum var. 15+ (Formerly Newington)			1				1
S. Apapa			1				1
S. Arechavaleta			1				1
S. Baildon				1			1
S. Bareilly	1		2	2			5
S. Barranquilla					1		1
S. Berta	5		7		2		14
S. Blockley			1	1			2
S. Bonariensis			3				3
S. Bovismorbificans			1				1
S. Bradford			1				1
S. Braenderup	5	1	16	1	3		26
S. Brandenburg				1			1
S. Carmel	1						1
S. Carrau	1						1
S. Cerro			2				2
S. Chester			4				4
S. Choleraesuis var. Kunzendorf			1				1
S. Cubana			1				1
S. Derby	2	1	1	3			7
S. Dublin	1	1	1				3
S. Duisburg (Includes Salinatis)			1				1
S. Durham			3				3
S. Eastbourne			2			1	3
S. Enteritidis	89	19	238	35	36	11	428
S. Fann			1				1
S. Gaminara			1				1
S. Give	1		1		2		4
S. Give var. 15+ (Formerly Newbrunswick)			1				1
S. Glostrup			1				1
S. Hadar	7	1	51	5	3		67
S. Hartford	7						7
S. Havana			2				2
S. Heidelberg	22	3	72	7	7	2	113
S. Herston			1				1
S. Hvittingfoss			2				2
S. Ibadan			2				2

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=New England

Serotype	State						Total
	Connecticut	Maine	Massachusetts	New Hampshire	Rhode Island	Vermont	
S. Indiana			1				1
S. Infantis	10		19	4	4	1	38
S. Isangi			1				1
S. Istanbul	1						1
S. Itami				1			1
S. Javiana	3		29	3	3	2	40
S. Johannesburg			1				1
S. Kentucky	2		9				11
S. Kiambu	2		2	1	2	1	8
S. Kintambo				2			2
S. Kokomlemle			1				1
S. Kottbus					1	1	2
S. Larochele			1				1
S. Litchfield	3		9	3	2		17
S. Lomalinda			1	1		1	3
S. London			4				4
S. Manhattan			16				16
S. Mbandaka	1		3				4
S. Miami	1		4	1	4		10
S. Minnesota			1	1			2
S. Mississippi	1		1		3	1	6
S. Monschau	1						1
S. Montevideo	15		23	2	1	2	43
S. Muenchen	4		20	1	1		26
S. Muenster			2		1		3
S. Newport	51	3	113	21	29	10	227
S. Oranienburg	8	3	44	2	7		64
S. Oslo	1		1				2
S. Panama	2		6		3		11
S. Paratyphi A	3		6	2			11
S. Paratyphi B	7		15	1			23
S. Paratyphi B var. L(+ tartrate+ (Formerly Java)	1	1	4	2	1		9
S. Pensacola	2						2
S. Pomona	2						2
S. Poona	11		2	2		2	17
S. Potsdam	1						1
S. Reading			3				3
S. Richmond			2		1		3
S. Rubislaw			3				3
S. Saarbruecken						1	1
S. Saintpaul	11		23	3	2		39
S. San Diego	2		11	1	4		18
S. Schwarzengrund	1		3			2	6
S. Senftenberg			5	1	6		12
S. Simi						1	1

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=New England

Serotype	State						Total
	Connecticut	Maine	Massachusetts	New Hampshire	Rhode Island	Vermont	
S. Stanley	4		6	1	1		12
S. Stanleyville	1				1		2
S. Sundsvall			1				1
S. Tennessee		1	2				3
S. Thompson	13	1	28	6	2		50
S. Toucra	1						1
S. Typhi	8		8				16
S. Typhimurium	121	5	165	15	49	16	371
S. Typhimurium var. 5- (Formerly var. Copenhagen)			87	11		1	99
S. Uganda	1		1		1	1	4
S. Urbana		3					3
S. Virchow	3		2				5
S. Weltevreden	3		5	1		1	10
S. Worthington			1				1
S. I 3,10:e,h:-	1						1
S. I 3,10:l,v:-			1				1
S. I 4,[5],12:b:-			2				2
S. I 4,[5],12:i:-	6		34		4		44
S. I 6,7:e,h:-			1				1
S. I 9,12:l,v:-	1						1
S. I 9,12:l,z28:-	1		1				2
S. I 13,22:b:-			2				2
S. IIIa 48:g,z51:-			1				1
S. IV 16:z4,z32:- (Formerly Chameleon)			1				1
S. IV 44:z4,z23:-	2		1				3
S. IV 44:z4,z32:- (Formerly Lohbruegge)			1				1
S. IV 48:g,z51:- (Formerly Marina)		1					1
S. IV 50:g,z51:- (Formerly Wassenaar)			1				1
S. IV 50:z4,z23:- (Formerly Flint)			1				1
Partially serotyped isolates	8	1	1	2	2	10	24
Rough or nonmotile isolates	1		9				10
Unknown	8		2	2	4		16
Total	477	45	1197	151	198	68	2136

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Mid Atlantic

Serotype	States			Total
	New Jersey	New York	Pennsylvania	
S. Adelaide		13	4	17
S. Agama		4		4
S. Agona	5	35	19	59
S. Agoueve		1		1
S. Alachua		2		2
S. Altona		1	1	2
S. Anatum	1	10	8	19
S. Apapa			2	2
S. Arechavaleta		3		3
S. Baildon			1	1
S. Bardo		3		3
S. Bareilly		2	8	10
S. Berta	1	60	15	76
S. Blockley	2	3	1	6
S. Bovismorbificans	1	7		8
S. Braenderup	9	29	40	78
S. Brandenburg	1	26	4	31
S. Bredeney		4	2	6
S. Brezany		2		2
S. Carmel		1	1	2
S. Cerro		2	2	4
S. Chester	1	2	4	7
S. Chicago		1		1
S. Choleraesuis		3		3
S. Choleraesuis var. Decatur		1		1
S. Choleraesuis var. Kunzendorf			4	4
S. Coeln		1		1
S. Colindale		3		3
S. Concord		1		1
S. Corvallis		1		1
S. Cotham		1		1
S. Cubana	1	1	5	7
S. Dahra			1	1
S. Daytona		1		1
S. Derby	1	14	4	19
S. Dublin		13	3	16
S. Ealing		3	1	4
S. Edinburg		1	1	2
S. Ekpoui			1	1
S. Enteritidis	86	758	471	1315
S. Florida		1		1
S. Friedenau			1	1
S. Gabon		1		1
S. Gaminara		1		1
S. Give		2	3	5

TABLE 4

Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002

Region=Mid Atlantic

Serotype	States			Total
	New Jersey	New York	Pennsylvania	
S. Goettingen		1		1
S. Hadar	3	41	28	72
S. Haifa			1	1
S. Hartford		9	11	20
S. Heidelberg	14	247	105	366
S. Holcomb		2		2
S. Hvittingfoss		5	1	6
S. Indiana		11	2	13
S. Infantis		65	32	97
S. Istanbul		18		18
S. Javiana	1	23	25	49
S. Kande		1		1
S. Kentucky	3	13	6	22
S. Kiambu		4	1	5
S. Kingston		1		1
S. Kintambo			1	1
S. Krefeld		1		1
S. Lexington		1		1
S. Litchfield	4	12	7	23
S. Livingstone		1	1	2
S. Lockleaze	1			1
S. Lomalinda			4	4
S. London		3	1	4
S. Manhattan		4	12	16
S. Matadi	1		1	2
S. Mbandaka	2	15	4	21
S. Meleagridis		3		3
S. Miami	1		9	10
S. Mississippi		1	1	2
S. Montevideo	3	48	36	87
S. Muenchen	2	34	17	53
S. Muenster	1	3	10	14
S. Newport	85	307	236	628
S. Nima		3	3	6
S. Norwich		1	8	9
S. Ohio	1	8	3	12
S. Oranienburg	3	28	39	70
S. Oslo		1		1
S. Othmarschen		11		11
S. Pakistan		4		4
S. Panama		9	2	11
S. Paratyphi A	5	24	1	30
S. Paratyphi B	2	20	11	33
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)		29	24	53
S. Poano			1	1

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Mid Atlantic

Serotype	States			Total
	New Jersey	New York	Pennsylvania	
S. Pomona	1	31	3	35
S. Poona		36	18	54
S. Potsdam		1		1
S. Reading	1	5	3	9
S. Richmond			1	1
S. Rissen		1		1
S. Roodepoort	1			1
S. Rubislaw		1	1	2
S. Ruzizi		1		1
S. Saintpaul	1	41	31	73
S. Sandiego	2	25	8	35
S. Schwarzengrund		13	12	25
S. Senegal		1		1
S. Senftenberg	3	9	7	19
S. Shubra		5		5
S. Stanley	4	18	7	29
S. Stanleyville		9		9
S. Sundsvall		1	1	2
S. Szentes		1		1
S. Takoradi		1		1
S. Telekebir		3	1	4
S. Tennessee		4	2	6
S. Thompson	6	35	23	64
S. Typhi	8	64	9	81
S. Typhimurium	11	571	517	1099
S. Typhimurium var. 5- (Formerly var. Copenhagen)	30			30
S. Uganda		11	1	12
S. Urbana		3	5	8
S. Virchow	1	3		4
S. Virginia		1		1
S. Wandsworth		1		1
S. Warnow		1		1
S. Welikade		1		1
S. Weltevreden		1		1
S. Widemarsh		2		2
S. Winneba		1		1
S. Worthington		3		3
S. 1 4,[5],12:b:-		4		4
S. 1 4,[5],12:d:-	1			1
S. 1 4,[5],12:i:-	6	23		29
S. 1 6,7:-:1,5		6		6
S. 1 6,7:e,h:-		1		1
S. 1 6,7:z4,z23:-	1			1
S. 1 6,8:-:1,5		1		1
S. 1 6,8:z10:-		1		1

TABLE 4***Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002***

Region=Mid Atlantic

Serotype	States			Total
	New Jersey	New York	Pennsylvania	
S. I 9,12:l,v:-		2		2
S. I 13,23:i:-		1		1
S. IIIb 50:k:z	1			1
S. IIIb 50:z:z52	1			1
S. IV 6,7:z4,z24:- (Formerly Kralendyk)	1		1	2
S. IV 16:z4,z32:- (Formerly Chameleon)		3		3
S. IV 43:z4,z32:- (Formerly Tuindorp)			2	2
S. IV 44:z4,z23:-	1	1		2
S. IV 48:g,z51:- (Formerly Marina)	1		10	11
S. IV 50:g,z51:- (Formerly Wassenaar)			2	2
Partially serotyped isolates		97	37	134
Rough or nonmotile isolates	3	3		6
Unknown		23	5	28
Total	326	3101	1958	5385

TABLE 4

***Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002***

Region=East North Central

Serotype	States					Total
	Illinois	Indiana	Michigan	Ohio	Wisconsin	
S. Abony			1		2	3
S. Adelaide	5	2	1	3		11
S. Agbeni	2			2		4
S. Agodi					1	1
S. Agona	15	6	7	10	6	44
S. Agouve				1		1
S. Ajiobo			2			2
S. Alachua	1	3		1		5
S. Albany	1					1
S. Amsterdam		1				1
S. Amsterdam var. 15+, 34+ (Formerly Drypool)			1			1
S. Anatum	10		50	6	8	74
S. Apapa			1	1		2
S. Baildon		2	1			3
S. Bardo				1		1
S. Bareilly	4	6	2	2	2	16
S. Berta	19	6	10		5	40
S. Blockley	1	1	1		5	8
S. Bonariensis	1			1		2
S. Bovismorbificans	2	3	10	4		19
S. Braenderup	16	10	12	26	7	71
S. Brandenburg	2	1	3	2		8
S. Bredeney		1				1
S. Butantan			1			1
S. Carmel			2			2
S. Cerro			1	1		2
S. Chailey			1			1
S. Chester	2	2			1	5
S. Choleraesuis	1		1			2
S. Cubana	2	1		3		6
S. Denver			1			1
S. Derby	12	3		2	2	19
S. Dublin	1		2	3	2	8
S. Durban			1			1
S. Durham	1					1
S. Ealing		1	1			2
S. Eastbourne	3				2	5
S. Ebrie					1	1
S. Enteritidis	341	101	228	185	119	974
S. Farmsen					1	1
S. Farsta			4			4
S. Gaminara	1	2			1	4
S. Give	5	1		2	1	9
S. Give var. 15+ (Formerly Newbrunswick)				1		1
S. Goettingen					1	1

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=East North Central

Serotype	States					Total
	Illinois	Indiana	Michigan	Ohio	Wisconsin	
S. Hadar	14	5	9	13	2	43
S. Hartford	13	21	6	21	31	92
S. Havana	2	1		1		4
S. Hayindogo					1	1
S. Heidelberg	135	47	45	62	25	314
S. Holcomb				2		2
S. Hvittingfoss	5				1	6
S. Indiana	2		2			4
S. Infantis	24	10	15	13	4	66
S. Inverness	1	2	1			4
S. Istanbul					2	2
S. Jangwani			1	1		2
S. Javiana	16	10	11	14	5	56
S. Johannesburg	1	1	1	1		4
S. Kentucky	1		3	1	2	7
S. Kiambu	6		2			8
S. Kingabwa			1	3		4
S. Kokomlele			1			1
S. Kottbus				2		2
S. Krefeld				1		1
S. Lille		1				1
S. Lindenburg					1	1
S. Litchfield	6	2	3	3		14
S. Livingstone	1		2			3
S. Lomalinda	6	2	1	1		10
S. London	2					2
S. Manhattan	3	1	2	2		8
S. Mbandaka	7	2	1	8		18
S. Miami		2	1	6	2	11
S. Minnesota	1	4	3	2	1	11
S. Mississippi	1			5	1	7
S. Mono		2				2
S. Monschau	1		2			3
S. Montevideo	17	13	10	30	14	84
S. Muenchen	25	7	17	15	3	67
S. Muenster		3	2	1	1	7
S. Napoli					1	1
S. Newmexico		1				1
S. Newport	106	56	77	93	50	382
S. Nima		1				1
S. Norwich	2				2	4
S. Oakland			1			1
S. Ohio	2	1		3		6
S. Oranienburg	31	12	16	38	6	103
S. Orion var. 15+ (Formerly Binza)				1		1

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=East North Central

Serotype	States					Total
	Illinois	Indiana	Michigan	Ohio	Wisconsin	
S. Oslo	2			2	1	5
S. Panama	8	5	2	6	4	25
S. Paratyphi A	4	3	3	2		12
S. Paratyphi B	4		2	2		8
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	5	27	23	49	10	114
S. Poano		1				1
S. Pomona		2	2		1	5
S. Poona	2	3	5	8	5	23
S. Reading	3	3	3	2	6	17
S. Richmond	1					1
S. Rissen			1			1
S. Rubislaw	1	2			1	4
S. Saintpaul	29	6	8	18	5	66
S. Sandiego	3	1	3	9		16
S. Schwarzengrund	2	2	5	6	1	16
S. Senftenberg	9	2	2	4		17
S. Seremban			1			1
S. Shubra					1	1
S. Stanley	8	4	1	8	3	24
S. Tallahassee			1		2	3
S. Teitelkebir		1				1
S. Tennessee			3	4		7
S. Thompson	21	4	24	24	9	82
S. Tilene					2	2
S. Typhi	15	2	5	5	1	28
S. Typhimurium	286	87	143	362	127	1005
S. Typhimurium var. 5- (Formerly var. Copenhagen)		22				22
S. Uganda	4			2	3	9
S. Urbana	1	1		2	1	5
S. Virchow		3	4	3		10
S. Wandsworth			1			1
S. Waral			1			1
S. Waycross					1	1
S. Weltevreden	1			1	1	3
S. Worthington			2	2	1	5
S. Yundum		1				1
S. I 4,[5],12:d:-				1		1
S. I 4,[5],12:i:-	50	4				54
S. I 9,12:a:-	1					1
S. II 17:g,t:- (Formerly Bleadon)		1				1
S. IIIa 41:z4,z23:-	1			1		2
S. IIIb 50:k:z				1		1
S. IIIb 50:r:z				1		1
S. IIIb 61:l,[v],[z13]:1,5,[7]		6		7		13
S. IIIb 61:r:z53					1	1

TABLE 4**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=East North Central

Serotype	States					Total
	Illinois	Indiana	Michigan	Ohio	Wisconsin	
S. IV 6,7:z4,z24:- (Formerly Kralendyk)				2		2
S. IV 16:z4,z32:- (Formerly Chameleon)	1					1
S. IV 44:z36:-					3	3
S. IV 44:z4,z23:-		1		1		2
S. IV 45:g,z51:-				1		1
S. IV 48:g,z51:- (Formerly Marina)	1	2	1	1		5
S. IV 50:g,z51:- (Formerly Wassenaar)	3					3
Partially serotyped isolates	2	4	38	37	7	88
Rough or nonmotile isolates				5		5
Unknown	29	24	32	21	35	141
Total	1376	584	897	1200	554	4611

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=West North Central

Serotype	States						Total
	Iowa	Kansas	Minnesota	Missouri	North Dakota	South Dakota	
S. Aarhus						1	1
S. Abaetetuba				1			1
S. Adelaide	1		2				3
S. Agona	6	5	9	13			33
S. Alachua		1				1	2
S. Albany	1			2			3
S. Amsterdam	1						1
S. Anatum	3		8	8		1	20
S. Baildon			1		1		2
S. Bardo			2				2
S. Bareilly	1	4	1	27		1	34
S. Berta	36	1	4	12			53
S. Blegdam	2						2
S. Blockley			7				7
S. Bovismorbificans	1		2	2			5
S. Braenderup	10	6	4	7	1	2	30
S. Brandenburg	2	1	2	5			10
S. Bredeney		2	2	1			5
S. Cannstatt			1				1
S. Caracas			1				1
S. Chandans			1				1
S. Chester				2			2
S. Choleraesuis				2			2
S. Cubana	1			1			2
S. Derby		1	6	11		5	23
S. Diguel					2		2
S. Dublin		2					2
S. Ealing		1					1
S. Eastbourne			1				1
S. Enteritidis	52	22	115	118	5	24	336
S. Fischerstrasse	1						1
S. Gaminara		1		1			2
S. Haardt		1					1
S. Hadar	2		10	11	2		25
S. Hartford	9	2	1	1			13
S. Havana	1			5			6
S. Heidelberg	16	15	37	143	8	12	231
S. Hull	1						1
S. Hvittingfoss			1	3			4
S. Indiana	1		1	1			3
S. Infantis	6	3	13	5		1	28
S. Inverness					1		1
S. Istanbul	1		3		1		5
S. Isuge			1				1
S. Ituri			1				1

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=West North Central

Serotype	States						Total
	Iowa	Kansas	Minnesota	Missouri	North Dakota	South Dakota	
S. Javiana	6	3	8	46			63
S. Johannesburg			1	1			2
S. Kentucky		1	1				2
S. Kiambu			1	1			2
S. Kingabwa			2				2
S. Kintambo			1				1
S. Larochelle			1				1
S. Litchfield	2		2	13	1	3	21
S. Lomalinda			1				1
S. Lomita			1				1
S. London						1	1
S. Luciana				1			1
S. Manhattan		1		4	1		6
S. Mbandaka		1	11	6	1	3	22
S. Meleagridis			1				1
S. Miami				1			1
S. Minnesota				1			1
S. Mississippi	2	1		12		1	16
S. Montevideo	12	10	9	15	2	3	51
S. Muenchen	8	5	10	19		3	45
S. Muenster	1		2			2	5
S. Nagoya						1	1
S. Newmexico		1					1
S. Newport	69	47	62	178	6	11	373
S. Nima			1				1
S. Norwich		2		22			24
S. Ohio		1	1	1			3
S. Oranienburg	1	16	19	13	1		50
S. Oranienburg var. 14+ (Formerly Thielallee)	2						2
S. Othmarschen				1			1
S. Panama		1	4	4	1	2	12
S. Paratyphi A	2		2	1			5
S. Paratyphi B			1			1	2
S. Paratyphi B var. L(+ tartrate+ (Formerly Java)	6	5	16	22	1		50
S. Patience			1				1
S. Pensacola				1			1
S. Pomona	1		2	1			4
S. Poona	1	2	1	10	4		18
S. Putten				2			2
S. Reading	1		3	2			6
S. Richmond		1	1				2
S. Ridge	1						1
S. Rissen			1				1
S. Roodepoort				1			1
S. Rubislaw	1			5			6

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=West North Central

Serotype	States						Total
	Iowa	Kansas	Minnesota	Missouri	North Dakota	South Dakota	
S. Saintpaul	4	1	10	9	3	4	31
S. Sandiego	1		4	2	1		8
S. Schwarzengrund	1	1	2	2			6
S. Senftenberg	1	1	4	3			9
S. Singapore	1						1
S. Stanley	1	1	6	1		1	10
S. Sundsvall			1				1
S. Tampico				1			1
S. Teddington					1		1
S. Teitelkebir				1			1
S. Tennessee			3	2			5
S. Thompson	6	3	7	17	2	1	36
S. Typhi			4	1			5
S. Typhimurium	92	48	125	261	17	43	586
S. Typhimurium var. 5- (Formerly var. Copenhagen)	24	19	32				75
S. Uganda	1	2		1			4
S. Urbana			1		3		4
S. Virchow			1				1
S. Virginia			1				1
S. Weltevreden		1					1
S. Worthington		1					1
S. I 4,[5],12:d:-				1			1
S. I 4,[5],12:i:-				34			34
S. I 6,7:k:-				1			1
S. I 9,12:l,z28:-				1			1
S. II 9,12:g,m,[s],t:[1,5,7]:[z42] (Includes Hamburg)	1						1
S. II 47:d,z39 (Formerly Quimbamba)			1	2			3
S. IIIa 41:z4,z23:-		1					1
S. IIIb 17:z10:e,n,x,z15				1			1
S. IIIb 38:(k):z35	1						1
S. IIIb 47:k:z35				1			1
S. IIIb 60:r:z				1			1
S. IIIb 61:l,[v],[z13]:-				1			1
S. IIIb 61:l,[v],[z13]:1,5,[7]						1	1
S. IV 16:z4,z32:- (Formerly Chameleon)					1	1	2
S. IV 44:z4,z23:-				1			1
S. IV 48:g,z51:- (Formerly Marina)		1					1
Partially serotyped isolates	33	13	10	18			74
Rough or nonmotile isolates				3		1	4
Unknown	1		21	5			27
Total	439	259	637	1137	67	131	2670

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=South Atlantic

Serotype	States								Total
	Delaware	Florida	Georgia	Maryland	North Carolina	South Carolina	Virginia	West Virginia	
S. Aberdeen				1					1
S. Abony			1						1
S. Adelaide			1	1	3		3		8
S. Agona	1	1	2	7	3	1	10		25
S. Agoueve				1					1
S. Alabama			3						3
S. Alachua							1		1
S. Albany							1		1
S. Amsterdam					1		2		3
S. Anatum			7	2	5	1	1		16
S. Anatum var. 15+, 34+ (Formerly Minneapolis)							1		1
S. Anecho					4			1	5
S. Baildon			3				2		5
S. Bardo			3	34					37
S. Bareilly			11	2	9	1	12		35
S. Berta	2		11	14	4		3	6	40
S. Blockley			2		1				3
S. Bonariensis				1					1
S. Bournemouth			1						1
S. Bovismorbificans					1	4	1	1	7
S. Bracknell			1						1
S. Braenderup	1		17	10	11	6	21	3	69
S. Brandenburg			8	4	11		2	3	28
S. Bredeney			1				1		2
S. Bsilla			1						1
S. Carrau					1				1
S. Cerro			9		2		1		12
S. Ceyco					1				1
S. Chester					1				1
S. Choleraesuis							1		1
S. Choleraesuis var. Decatur						1			1
S. Choleraesuis var. Kunzendorf			1						1
S. Coeln			1						1
S. Colindale						1			1
S. Cotham					1				1
S. Cubana				1					1
S. Denver							1		1
S. Derby	1		29	5	2	3	3	1	44
S. Dublin	1			1					2
S. Edinburg							1		1
S. Enteritidis	24	1	78	249	196	29	232	27	836
S. Epicrates					1				1
S. Florida							1		1
S. Fluntern				1					1
S. Gaminara			2	2	6	7	1		18

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=South Atlantic

Serotype	States								Total
	Delaware	Florida	Georgia	Maryland	North Carolina	South Carolina	Virginia	West Virginia	
S. Gatow					1				1
S. Give			1	1	3		3		8
S. Glostrup			1						1
S. Hadar	1		12	1	4	2	6		26
S. Haifa			1						1
S. Harburg					1				1
S. Hartford	3		8	3	5	3	11		33
S. Havana				1	1				2
S. Heidelberg	29		84	42	118	24	56	9	362
S. Hiduddify					1				1
S. Hvitvingfoss				3	1	1	3		8
S. Ibadan					3				3
S. Infantis	3		5	14	23	2	7		54
S. Inverness			8		12				20
S. Istanbul				5					5
S. Jangwani							1		1
S. Javiana	6	2	233	33	180	107	43	2	606
S. Jerusalem			1						1
S. Joal						2			2
S. Johannesburg			3		2	1			6
S. Kedougou					1				1
S. Kentucky			4	2	2	1	1		10
S. Kiambu			2	1					3
S. Kingabwa			1					1	2
S. Kinondoni				1					1
S. Kintambo			1	1					2
S. Lindern			1						1
S. Litchfield			3		3	1	7	1	15
S. Luciana					1				1
S. Madelia			1			1			2
S. Manhattan		2	3	4	1	2	3		15
S. Maracaibo				2					2
S. Matadi					1				1
S. Mbandaka	1		13	9	14	3			40
S. Miami		1	18		8	6			33
S. Minnesota	2		3		5		2		12
S. Mississippi			64	4	41	29	3		141
S. Mono			2						2
S. Montevideo	3		44	13	59	10	7		136
S. Muenchen	1		67	6	51	33	7	2	167
S. Muenster				3	1		1		5
S. Muenster var. 15+ (Formerly Newhaw)								1	1
S. Newport	25	3	311	108	337	149	169	15	1117
S. Ngili				2					2
S. Norwich			4	7		1	1		13

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=South Atlantic

Serotype	States								Total
	Delaware	Florida	Georgia	Maryland	North Carolina	South Carolina	Virginia	West Virginia	
S. Ohio	1		2	1		2	2	1	9
S. Onderstepoort							1		1
S. Oranienburg	1		16	15	1	13	10		56
S. Oritamerin								1	1
S. Oslo					1				1
S. Othmarschen				1				3	4
S. Panama				10	1		5		16
S. Paratyphi A	1	1	7	1	3		5		18
S. Paratyphi B			3	3		3	7	2	18
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	1		13	8	21		13	4	60
S. Pensacola			2			2			4
S. Poano						2			2
S. Pomona			3	1	3		1		8
S. Poona	1		3	7	7		2	1	21
S. Reading			1		2			1	4
S. Richmond			1						1
S. Rissen							2		2
S. Rubislaw	1		11	2	5	2	1		22
S. Saintpaul	2	1	29	9	27	18	17	2	105
S. Sandiego		2	2	6	6	2	3		21
S. Sanger								1	1
S. Sapele				1					1
S. Schwarzengrund	1			1	6	2	4	3	17
S. Sendai			1						1
S. Senftenberg	2	1	5	1	2	2	2	1	16
S. Shubra				1					1
S. Somone					1				1
S. Stanley			7	1		1	5	1	15
S. Stanleyville			3	1					4
S. Teitelkebir			1			1			2
S. Tennessee			1				1	2	4
S. Thompson			6	6	16	3	15	2	48
S. Toucra				1					1
S. Tshiongwe								1	1
S. Typhi		1	3	12	3	1	10		30
S. Typhimurium	40		199	98	467	132	328	51	1315
S. Typhimurium var. 5- (Formerly var. Copenhagen)			159	79					238
S. Uganda	1		3		1				5
S. Urbana				1	1		1		3
S. Virchow				6			3	5	14
S. Virginia			2						2
S. Wandsworth			1		1				2
S. Worthington			2	2	1				5
S. I 3,15,34:l,v:-			1						1
S. I 4,12:-:1,7			1						1

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=South Atlantic

Serotype	States								Total
	Delaware	Florida	Georgia	Maryland	North Carolina	South Carolina	Virginia	West Virginia	
S. I 4,5,12:-:1,2			2						2
S. I 4,[5],12:b:-	1								1
S. I 4,[5],12:i:-	1		32	4					37
S. I 6,7:-:1,5				1					1
S. I 6,7:k:-			1						1
S. I 9,12:-:1,5			3						3
S. I 9,12:l,z28:-			6						6
S. II 13,22:z29:1,5 (Formerly Clifton)					1				1
S. II 41:z10:z6 (Formerly Lichtenberg)					1				1
S. II 47:d:z39 (Formerly Quimbamba)			1						1
S. II 48:d:z6 (Formerly Hagenbeck)			1						1
S. II 50:b:z6			1						1
S. IIIa 48:g,z51:-		2	2						4
S. IIIb 61:l,[v],[z13]:1,5,[7]			2						2
S. IV 6,7:z4,z24:- (Formerly Kralendyk)				1					1
S. IV 16:z4,z32:- (Formerly Chameleon)							1		1
S. IV 48:g,z51:- (Formerly Marina)			1	5	4		1		11
S. IV 50:g,z51:- (Formerly Wassenaar)			1	1					2
S. IV 50:z4,z23:- (Formerly Flint)			2	1	1				4
Partially serotyped isolates	2	294	8	109	4	3	53	2	475
Rough or nonmotile isolates			8				1		9
Unknown			2	2	10	17	1		32
Total	160	312	1653	1001	1741	638	1128	157	6790

TABLE 4

***Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002***

Region=East South Central

Serotype	States				Total
	Alabama	Kentucky	Mississippi	Tennessee	
S. Aarhus			1	3	4
S. Abadina				2	2
S. Adelaide	1				1
S. Agona	4	1	1	8	14
S. Albany				1	1
S. Albuquerque				1	1
S. Anatum	2	1		13	16
S. Baildon				2	2
S. Bardo			3		3
S. Bareilly	6	9	3	27	45
S. Berta		2	2		4
S. Blockley				1	1
S. Bovismorbificans		1			1
S. Braenderup	5	4	2	8	19
S. Brandenburg	1			1	2
S. Bredeney	2	1			3
S. Canada		1			1
S. Cerro				1	1
S. Chandans		1		1	2
S. Daytona	2				2
S. Derby	3	6		5	14
S. Duval			1		1
S. Eastbourne				2	2
S. Emek				1	1
S. Enteritidis	41	30	13	71	155
S. Fluntern			1		1
S. Gallinarum (Includes Pullorum)				1	1
S. Gaminara	1		3		4
S. Give	3		2		5
S. Haardt	1				1
S. Hadar	1			2	3
S. Hartford	6	6		6	18
S. Hato	1				1
S. Heidelberg	36	23	4	41	104
S. Hillegersberg	1				1
S. Hvittingfoss				3	3
S. Ibadan				2	2
S. Infantis	3	8		8	19
S. Inverness	1		1		2
S. Javiana	98	11	74	65	248
S. Johannesburg	2			1	3
S. Kentucky		1			1
S. Kimuenza			1		1
S. Kottbus				1	1
S. Larochelle		1			1

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=East South Central

Serotype	States				Total
	Alabama	Kentucky	Mississippi	Tennessee	
S. Litchfield	3	1	1	5	10
S. London	1			3	4
S. Luciana	2		2		4
S. Manhattan	3				3
S. Mbandaka	8		2	2	12
S. Meleagridis		1			1
S. Miami	4	5		51	60
S. Mikawasima	1				1
S. Minnesota				1	1
S. Mississippi	17	1	55	24	97
S. Montevideo	26	1	3	8	38
S. Muenchen	41	4	15	9	69
S. Muenster		1			1
S. Newport	95	39	111	171	416
S. Nima				1	1
S. Norwich	2	3	23	15	43
S. Nottingham				1	1
S. Ohio	1	2		4	7
S. Oldenburg			1		1
S. Oranienburg	5	8	2	14	29
S. Oslo				2	2
S. Panama	1			5	6
S. Paratyphi A		2		2	4
S. Paratyphi B	1				1
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	1	4	19	26	50
S. Pensacola		1			1
S. Poona	2		1	3	6
S. Putten				1	1
S. Reading	2			2	4
S. Rittersbach	1				1
S. Romanby		1			1
S. Rubislaw	8		17	2	27
S. Saintpaul	12	5	1	9	27
S. San Diego	2	14		1	17
S. Saphra	1				1
S. Schleissheim	7				7
S. Schwarzengrund				3	3
S. Senftenberg		2		1	3
S. Somone		1			1
S. Stanley	6		2	2	10
S. Tennessee				1	1
S. Thompson	6	9		11	26
S. Typhi		4		1	5
S. Typhimurium	181	63	75	197	516
S. Typhimurium var. 5- (Formerly var. Copenhagen)		27	27	66	120

TABLE 4

***Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002***

Region=East South Central

Serotype	States				Total
	Alabama	Kentucky	Mississippi	Tennessee	
S. Uganda				2	2
S. Virchow			1	2	3
S. Weltevreden			1		1
S. Worthington				1	1
S. I 4,[5],12:i:-	4		19	31	54
S. I 6,7:l,w:-				1	1
S. I 9,12:l,z28:-	2				2
S. II 9,12:g,s,t,e,n,x	1				1
S. II 48:d:z6 (Formerly Hagenbeck)		1			1
S. IIIa 48:g,z51:-				1	1
S. IIIa 51:z4,z23:-				1	1
S. IIIb 16:z10:e,n,x,z15				1	1
S. IIIb 60:r:e,n,x,z15				1	1
S. IV 6,7:z4,z24:- (Formerly Kralendyk)				1	1
S. IV 44:z4,z23:-		1		3	4
S. IV 48:g,z51:- (Formerly Marina)				2	2
S. IV 50:g,z51:- (Formerly Wassenaar)		1		3	4
Partially serotyped isolates	25	3	9	6	43
Rough or nonmotile isolates				1	1
Unknown	4	11	11	91	117
Total	697	323	510	1070	2600

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=West South Central

Serotype	States			Total
	Louisiana	Oklahoma	Texas	
S. Adelaide			1	1
S. Agama		1		1
S. Agona	2	1	2	5
S. Anatum	1	14	7	22
S. Arechavaleta		1		1
S. Assen		1		1
S. Bareilly	9	10		19
S. Berta			2	2
S. Blockley			1	1
S. Bovismorbificans			1	1
S. Braenderup	12	6	4	22
S. Brandenburg		1	1	2
S. Bredeney	1	4	2	7
S. Cannstatt	1			1
S. Choleraesuis var. Kunzendorf	1			1
S. Derby	2	1		3
S. Eastbourne	1			1
S. Enteritidis	10	19	38	67
S. Gaminara	6		1	7
S. Give	9		2	11
S. Give var. 15+, 34+ (Formerly Menhaden)		1		1
S. Hadar	3	1	1	5
S. Hartford	2			2
S. Heidelberg	32	14	15	61
S. Hindmarsh		1		1
S. Hvittingfoss	2			2
S. Ibadan			2	2
S. Infantis	10	12	6	28
S. Inverness	1			1
S. Itami		1		1
S. Javiana	38	8	12	58
S. Johannesburg			1	1
S. Lindenburg		1		1
S. Litchfield	6	5		11
S. Lomalinda	2			2
S. Madelia			1	1
S. Manhattan	2	1		3
S. Mbandaka	3	1	2	6
S. Mississippi	35	1	6	42
S. Montevideo	22	15	8	45
S. Muenchen	14	11	3	28
S. Muenster	1	1	3	5
S. Newport	121	88	42	251
S. Norwich	1	7		8
S. Oranienburg	2	10	11	23

TABLE 4

***Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002***

Region=West South Central

Serotype	States			Total
	Louisiana	Oklahoma	Texas	
S. Oslo		1		1
S. Panama	1	1	6	8
S. Paratyphi B		2	1	3
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	4	22		26
S. Poano		2		2
S. Poona	2		4	6
S. Rubislaw	8	3		11
S. Saintpaul	5	2	2	9
S. Sandiego		1	1	2
S. Saphra	2			2
S. Schwarzengrund	1			1
S. Senftenberg	2	1	3	6
S. Stanley	1	1	2	4
S. Stanleyville		1		1
S. Tallahassee			1	1
S. Thompson	4	1	1	6
S. Typhi	1	4	5	10
S. Typhimurium	81	80	26	187
S. Uganda		5	2	7
S. Urbana	1	1		2
S. Worthington			1	1
S. I 4,[5],12:b:-			1	1
S. I 4,[5],12:i:-	12			12
S. I 6,8:d:-			1	1
S. II 13,23:g,m,[s],t:[e,n,x] (Formerly Luanshya)		1		1
S. IV 16:z4,z32:- (Formerly Chameleon)		2	1	3
Partially serotyped isolates	1	42	19	62
Unknown	1		1	2
Total	479	411	253	1143

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Mountain

Serotype	States							Total
	Arizona	Colorado	Idaho	Nevada	New Mexico	Utah	Wyoming	
S. Abaetetuba			1					1
S. Abony	2							2
S. Adelaide	3							3
S. Agona	13	11	2	1	5	4		36
S. Agoueve	1							1
S. Alachua						1		1
S. Albany	1				1			2
S. Amsterdam	1							1
S. Anatum	7	1		1	7			16
S. Apapa	1							1
S. Arapahoe					1			1
S. Berta		4	1			1		6
S. Blegdam				1				1
S. Blockley	2	3		1				6
S. Bovismorbificans	3	5		1				9
S. Braenderup	5	8	1	8	2			24
S. Brandenburg	1		15		1			17
S. Bredeney	2	1						3
S. Cannstatt					1			1
S. Carrau					1			1
S. Cerro	1	1						2
S. Chester	1							1
S. Choleraesuis		1		1				2
S. Cotham	1							1
S. Derby	10	1						11
S. Dublin	3		3			3		9
S. Eastbourne		1						1
S. Edinburg				1				1
S. Elomrane		1						1
S. Emek				1				1
S. Enteritidis	85	109	47	32	23	11	5	312
S. Gallinarum (Includes Pullorum)	2							2
S. Gaminara	2			1	1		1	5
S. Georgia	1							1
S. Give	4					1		5
S. Give var. 15+ (Formerly Newbrunswick)						1		1
S. Hadar	9	4	3	1	3			20
S. Haifa		4						4
S. Hartford	2	4						6
S. Havana		2						2
S. Heidelberg	42	32	3	13	9	3	4	106
S. Hindmarsh				1				1
S. Infantis	14	8	2	2	4	2		32
S. Inverness						1		1
S. Javiana	18	7	2	1	10	1		39

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Mountain

Serotype	States							Total
	Arizona	Colorado	Idaho	Nevada	New Mexico	Utah	Wyoming	
S. Jodhpur			1					1
S. Johannesburg				1		1		2
S. Kandla		1						1
S. Kentucky	1				1			2
S. Kiambu	1	1	1					3
S. Kottbus	1	1		1			1	4
S. Litchfield		1						1
S. Lomita	1							1
S. London	1			1				2
S. Madelia		1						1
S. Manhattan			1		2			3
S. Mbandaka	3	3		3	7	2		18
S. Meleagridis	1							1
S. Miami		1			1			2
S. Mikawasima		1						1
S. Minnesota	2	2		1				5
S. Mons		1						1
S. Montevideo	29	14	4	12	13	6		78
S. Muenchen	17	16	2	3	15	2		55
S. Muenster var. 15+, 34+ (Formerly Arkansas)	1							1
S. Newport	113	82	22	20	63	13		313
S. Nima				1				1
S. Norwich	2			1				3
S. Ohio	1	2			1	1		5
S. Oranienburg	46	17	4	2	15	2		86
S. Orientalis			1					1
S. Othmarschen	1							1
S. Overschie				1				1
S. Panama	18	2	1		2	1		24
S. Paratyphi A		3						3
S. Paratyphi B	4	9	1	3	1	1		19
S. Paratyphi B var. L(+), tartrate+ (Formerly Java)	4	5	2		2	2		15
S. Poano		1						1
S. Pomona	3	1	1					5
S. Poona	31	13		8	4	2		58
S. Reading	2	2			1		1	6
S. Rissen				1				1
S. Rubislaw	1							1
S. Saintpaul	13	21	1	9	8	6	2	60
S. Sandiego	8	1		1		3		13
S. Schwarzengrund	1	2		1				4
S. Senftenberg	6	4	1	3	8			22
S. Somone				1				1
S. Stanley	3	4	3	1	3	3		17
S. Sundsvall	1	2						3

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Mountain

Serotype	States							Total
	Arizona	Colorado	Idaho	Nevada	New Mexico	Utah	Wyoming	
S. Telekebir			2					2
S. Tennessee	1	2						3
S. Thompson	5	8	1	11	3	5		33
S. Tshiongwe			1					1
S. Typhi	1	5		3	2	4		15
S. Typhimurium	126	115	15	42	34	44	4	380
S. Typhimurium var. 5- (Formerly var. Copenhagen)	1	1	7	2	11		6	28
S. Uganda			2					2
S. Uganda var. 15+ (Formerly Kinshasa)	3							3
S. Urbana	2	1		1	1			5
S. Vejle	1							1
S. Victoria	1							1
S. Virchow	4	3				3		10
S. Wangata						1		1
S. Weltevreden	2							2
S. Westhampton					1			1
S. Worthington	2				2			4
S. I 4,5,12:-:1,2			1					1
S. I 4,[5],12:b:-	2							2
S. I 4,[5],12:i:-	12		12					24
S. II 35:g,m,s,t:-						1		1
S. II 42:b:e,n,x,z15 (Formerly Uphill)			1					1
S. II 48:a:z6	2							2
S. II 48:d:z6 (Formerly Hagenbeck)		1						1
S. II 50:b:z6	3							3
S. IIIa 17:z4,z23:-					1			1
S. IIIa 18:z4,z23:-	1							1
S. IIIa 21:g,z51:-	1							1
S. IIIa 41:z4,z23:-	1							1
S. IIIa 45:z4,z24:-	1							1
S. IIIa 48:g,z51:-	1							1
S. IIIa 62:z4,z23:-	1							1
S. IIIb 47:k:z35	1							1
S. IIIb 50:k:z53	1							1
S. IIIb 50:r:z	1							1
S. IV 11:z4,z23:- (Formerly Parera)	1							1
S. IV 21:g,z51:-	1							1
S. IV 48:g,z51:- (Formerly Marina)		1		1				2
S. IV 50:g,z51:- (Formerly Wassenaar)		1		2		2		5
Partially serotyped isolates	2	6	2	4	12	1		27
Rough or nonmotile isolates	2					1		3
Unknown		42			3	8	2	55
Total	736	608	170	208	286	144	26	2178

TABLE 4

**Salmonella isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Pacific

Serotype	States					Total
	Alaska	California	Hawaii	Oregon	Washington	
S. Aarhus		1			1	2
S. Abaetetuba		1				1
S. Aberdeen			1			1
S. Abony		2				2
S. Adelaide		14				14
S. Agona	2	78	6	6	17	109
S. Agoueve		2				2
S. Alachua		4				4
S. Albany		3	2	1		6
S. Altona			1			1
S. Amager			1			1
S. Amsterdam		1				1
S. Anatum		16	4	2	1	23
S. Anatum var. 15+ (Formerly Newington)	1	2				3
S. Antsalova		1				1
S. Apapa		1		1	2	4
S. Arechavaleta		1				1
S. Avonmouth		1				1
S. Bardo		3				3
S. Bareilly		14				14
S. Berta		35			27	62
S. Blockley		4				4
S. Bovismorbificans		16	2		4	22
S. Braenderup		26		6	13	45
S. Brandenburg		22		2	16	40
S. Bredeney		12		1		13
S. Carmel		3		1		4
S. Cerro	1	14			1	16
S. Chester		1	1			2
S. Choleraesuis		1				1
S. Choleraesuis var. Kunzendorf			1			1
S. Clackamas				4	2	6
S. Coeln		1				1
S. Colindale				1		1
S. Cubana		2			1	3
S. Daytona					1	1
S. Derby		24	1		3	28
S. Dublin		34	5	2	2	43
S. Duisburg (Includes Salinatis)		1				1
S. Ealing		1			2	3
S. Eastbourne		1			4	5
S. Edinburg		1				1
S. Enteritidis	3	524	18	53	95	693
S. Escanaba		1				1
S. Fresno		1				1

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Pacific

Serotype	States					Total
	Alaska	California	Hawaii	Oregon	Washington	
S. Gaminara		1				1
S. Georgia		2				2
S. Give		3	5			8
S. Give var. 15+ (Formerly Newbrunswick)		2				2
S. Haardt		1				1
S. Hadar		41	3	9	17	70
S. Hartford		5		1		6
S. Havana		11			1	12
S. Heidelberg	29	187	13	30	41	300
S. Hvittingfoss		6	2	2	2	12
S. Idikan		1				1
S. Indiana		1		2		3
S. Infantis		77	5	1	18	101
S. Inverness		1				1
S. Irumu		2				2
S. Istanbul		2				2
S. Itami					1	1
S. Javiana		20	3	4	2	29
S. Kande		2				2
S. Kentucky		11			1	12
S. Kiambu		10			1	11
S. Kingabwa		3				3
S. Kintambo		2				2
S. Kisarawe		2				2
S. Kottbus		1				1
S. Lagos		1				1
S. Litchfield		12			1	13
S. Livingstone		1		2		3
S. Lomalinda		5				5
S. London		4			1	5
S. Manhattan		18		1		19
S. Matadi		2				2
S. Mbandaka		23			3	26
S. Miami		3				3
S. Minnesota	1	2				3
S. Mississippi		1			1	2
S. Monschau		1				1
S. Montevideo		113	4	22	16	155
S. Muenchen		47	15	12	7	81
S. Muenster		6			2	8
S. Newport	3	382	29	36	47	497
S. Nima		3				3
S. Norwich		2				2
S. Nyanza		1				1
S. Ohio		12	3			15

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Pacific

Serotype	States					Total
	Alaska	California	Hawaii	Oregon	Washington	
S. Onderstepoort		1				1
S. Oranienburg		71	2	12	19	104
S. Oslo		2	4		1	7
S. Pakistan		1				1
S. Panama	1	19	8	4	5	37
S. Paratyphi A		20	2	1		23
S. Paratyphi B		6	3	10	8	27
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)		45		2	5	52
S. Poano					1	1
S. Pomona		2				2
S. Pona	1	37		11	19	68
S. Potsdam				2		2
S. Putten		1				1
S. Reading		22	3	3	3	31
S. Richmond		2				2
S. Rissen		1				1
S. Rubislaw		2			1	3
S. Saintpaul	1	72	4	19	29	125
S. Sandiego		12		1	1	14
S. Schwarzengrund		15	1	4	1	21
S. Senftenberg		16		2	1	19
S. Singapore		1				1
S. Soerenga		1				1
S. Stanley		40	3	4	6	53
S. Stanleyville		2				2
S. Teitelkebir				1		1
S. Tennessee		5	1	1		7
S. Thompson		83	1	2	9	95
S. Tucson		1				1
S. Typhi	1	82	5	2	9	99
S. Typhimurium	19	494	70	79	139	801
S. Typhimurium var. 5- (Formerly var. Copenhagen)		190				190
S. Uganda		14				14
S. Urbana		6			5	11
S. Virchow		8	1	3	1	13
S. Wandsworth		1				1
S. Warnow	1					1
S. Weltevreden		5	38		4	47
S. Westhampton					4	4
S. Worthington		3		1	2	6
S. Yoruba			1			1
S. 3,10:e,h:-				1		1
S. 4,[5],12:d:-			1	1		2
S. 4,[5],12:e,h:-			1			1
S. 4,[5],12:i:-			1		2	3

TABLE 4

***Salmonella* isolates from Human sources
by Serotype, Geographic Region and State, 2002**

Region=Pacific

Serotype	States					Total
	Alaska	California	Hawaii	Oregon	Washington	
S. I 4,[5],12:r:-			1			1
S. I 6,7:-:1,5				2		2
S. I 6,8:d:-			2			2
S. I 9,12:-:1,5			1			1
S. II 11:g,[m],s,t;z39	1					1
S. II 48:k;z39 (Formerly Sakaraha)		1				1
S. IIIa 48:z4,z23:-				1		1
S. IIIb 16:z10:e,n,x,z15				1		1
S. IIIb 48:iz					1	1
S. IIIb 50:k;z				1		1
S. IIIb 61:c;z35				1		1
S. IV 6,7:z4,z24:- (Formerly Kralendyk)		2				2
S. IV 44:z36:-				1		1
S. IV 44:z4,z32:- (Formerly Lohbruegge)		1				1
S. IV 48:g,z51:- (Formerly Marina)	1	4				5
S. IV 50:g,z51:- (Formerly Wassenaar)		4				4
S. IV 50:z4,z23:- (Formerly Flint)					1	1
Partially serotyped isolates		171	1	6	32	210
Rough or nonmotile isolates				5		5
Unknown		27		4		31
Total	66	3396	280	390	663	4795

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Aarhus				1		4			2	7
S. Abadina						2				2
S. Abaetetuba				1				1	1	3
S. Aberdeen	1				1				1	3
S. Abony	1		3		1			2	2	9
S. Adelaide	7	17	11	3	8	1	1	3	14	65
S. Agama		4					1			5
S. Agbeni			4							4
S. Agodi			1							1
S. Agona	12	59	44	33	25	14	5	36	109	337
S. Agouvee		1	1		1			1	2	6
S. Ajiobo			2							2
S. Alabama					3					3
S. Alachua	1	2	5	2	1			1	4	16
S. Albany			1	3	1	1		2	6	14
S. Albuquerque						1				1
S. Altona		2							1	3
S. Amager	1								1	2
S. Amsterdam			1	1	3			1	1	7
S. Amsterdam var. 15+, 34+ (Formerly Drypool)	2		1							3
S. Anatum	7	19	74	20	16	16	22	16	23	213
S. Anatum var. 15+ (Formerly Newington)	1								3	4
S. Anatum var. 15+, 34+ (Formerly Minneapolis)					1					1
S. Anecho					5					5
S. Antsalova									1	1
S. Apapa	1	2	2					1	4	10
S. Arapahoe								1		1
S. Arechavaleta	1	3					1		1	6
S. Assen							1			1
S. Avonmouth									1	1
S. Baildon	1	1	3	2	5	2				14
S. Bardo		3	1	2	37	3			3	49
S. Bareilly	5	10	16	34	35	45	19		14	178
S. Barranquilla	1									1
S. Berta	14	76	40	53	40	4	2	6	62	297
S. Blegdam				2				1		3
S. Blockley	2	6	8	7	3	1	1	6	4	38
S. Bonariensis	3		2		1					6
S. Bournemouth					1					1
S. Bovismorbificans	1	8	19	5	7	1	1	9	22	73
S. Bracknell					1					1
S. Bradford	1									1
S. Braenderup	26	78	71	30	69	19	22	24	45	384
S. Brandenburg	1	31	8	10	28	2	2	17	40	139
S. Bredeney		6	1	5	2	3	7	3	13	40

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Brezany		2								2
S. Bsilla					1					1
S. Butantan			1							1
S. Canada						1				1
S. Cannstatt				1			1	1		3
S. Caracas				1						1
S. Carmel	1	2	2						4	9
S. Carrau	1				1			1		3
S. Cerro	2	4	2		12	1		2	16	39
S. Ceyco					1					1
S. Chailey			1							1
S. Chandans				1		2				3
S. Chester	4	7	5	2	1			1	2	22
S. Chicago		1								1
S. Choleraesuis		3	2	2	1			2	1	11
S. Choleraesuis var. Decatur		1			1					2
S. Choleraesuis var. Kunzendorf	1	4			1		1		1	8
S. Clackamas									6	6
S. Coeln		1			1				1	3
S. Colindale		3			1				1	5
S. Concord		1								1
S. Corvallis		1								1
S. Cotham		1			1			1		3
S. Cubana	1	7	6	2	1				3	20
S. Dahra		1								1
S. Daytona		1				2			1	4
S. Denver			1		1					2
S. Derby	7	19	19	23	44	14	3	11	28	168
S. Diguel				2						2
S. Dublin	3	16	8	2	2			9	43	83
S. Duisburg (Includes Salinatis)	1								1	2
S. Durban			1							1
S. Durham	3		1							4
S. Duval						1				1
S. Ealing		4	2	1					3	10
S. Eastbourne	3		5	1		2	1	1	5	18
S. Ebrie			1							1
S. Edinburg		2			1			1	1	5
S. Ekpoui		1								1
S. Elomrane								1		1
S. Emek						1		1		2
S. Enteritidis	428	1315	974	336	836	155	67	312	693	5116
S. Epicrates					1					1
S. Escanaba									1	1
S. Fann	1									1

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Farmsen			1							1
S. Farsta			4							4
S. Fischerstrasse				1						1
S. Florida		1			1					2
S. Fluntern					1	1				2
S. Fresno									1	1
S. Friedenau		1								1
S. Gabon		1								1
S. Gallinarum (Includes Pullorum)						1		2		3
S. Gaminara	1	1	4	2	18	4	7	5	1	43
S. Gatow					1					1
S. Georgia								1	2	3
S. Give	4	5	9		8	5	11	5	8	55
S. Give var. 15+ (Formerly Newbrunswick)	1		1					1	2	5
S. Give var. 15+, 34+ (Formerly Menhaden)							1			1
S. Glostrup	1				1					2
S. Goettingen		1	1							2
S. Haardt				1		1			1	3
S. Hadar	67	72	43	25	26	3	5	20	70	331
S. Haifa		1			1			4		6
S. Harburg					1					1
S. Hartford	7	20	92	13	33	18	2	6	6	197
S. Hato						1				1
S. Havana	2		4	6	2			2	12	28
S. Hayindogo			1							1
S. Heidelberg	113	366	314	231	362	104	61	106	300	1957
S. Herston	1									1
S. Hiduddify					1					1
S. Hillegersberg						1				1
S. Hindmarsh							1	1		2
S. Holcomb		2	2							4
S. Hull				1						1
S. Hvittingfoss	2	6	6	4	8	3	2		12	43
S. Ibadan	2				3	2	2			9
S. Idikan									1	1
S. Indiana	1	13	4	3					3	24
S. Infantis	38	97	66	28	54	19	28	32	101	463
S. Inverness			4	1	20	2	1	1	1	30
S. Irumu									2	2
S. Isangi	1									1
S. Istanbul	1	18	2	5	5				2	33
S. Isuge				1						1
S. Itami	1						1		1	3
S. Ituri				1						1
S. Jangwani			2		1					3

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Javiana	40	49	56	63	606	248	58	39	29	1188
S. Jerusalem					1					1
S. Joal					2					2
S. Jodhpur								1		1
S. Johannesburg	1		4	2	6	3	1	2		19
S. Kande		1							2	3
S. Kandla								1		1
S. Kedougou					1					1
S. Kentucky	11	22	7	2	10	1		2	12	67
S. Kiambu	8	5	8	2	3			3	11	40
S. Kimuenza						1				1
S. Kingabwa			4	2	2				3	11
S. Kingston		1								1
S. Kinondoni					1					1
S. Kintambo	2	1		1	2				2	8
S. Kisarawe									2	2
S. Kokomlemle	1		1							2
S. Kottbus	2		2			1		4	1	10
S. Krefeld		1	1							2
S. Lagos									1	1
S. Larochelle	1			1		1				3
S. Lexington		1								1
S. Lille			1							1
S. Lindenburg			1				1			2
S. Lindern					1					1
S. Litchfield	17	23	14	21	15	10	11	1	13	125
S. Livingstone		2	3						3	8
S. Lockleaze		1								1
S. Lomalinda	3	4	10	1			2		5	25
S. Lomita				1				1		2
S. London	4	4	2	1		4		2	5	22
S. Luciana				1	1	4				6
S. Madelia					2		1	1		4
S. Manhattan	16	16	8	6	15	3	3	3	19	89
S. Maracaibo					2					2
S. Matadi		2			1				2	5
S. Mbandaka	4	21	18	22	40	12	6	18	26	167
S. Meleagridis		3		1		1		1		6
S. Miami	10	10	11	1	33	60		2	3	130
S. Mikawasima						1		1		2
S. Minnesota	2		11	1	12	1		5	3	35
S. Mississippi	6	2	7	16	141	97	42		2	313
S. Mono			2		2					4
S. Mons								1		1
S. Monschau	1		3						1	5

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Montevideo	43	87	84	51	136	38	45	78	155	717
S. Muenchen	26	53	67	45	167	69	28	55	81	591
S. Muenster	3	14	7	5	5	1	5		8	48
S. Muenster var. 15+ (Formerly Newhaw)					1					1
S. Muenster var. 15+, 34+ (Formerly Arkansas)								1		1
S. Nagoya				1						1
S. Napoli			1							1
S. Newmexico			1	1						2
S. Newport	227	628	382	373	1117	416	251	313	497	4204
S. Ngili					2					2
S. Nima		6	1	1		1		1	3	13
S. Norwich		9	4	24	13	43	8	3	2	106
S. Nottingham						1				1
S. Nyanza									1	1
S. Oakland			1							1
S. Ohio		12	6	3	9	7		5	15	57
S. Oldenburg						1				1
S. Onderstepoort					1				1	2
S. Oranienburg	64	70	103	50	56	29	23	86	104	585
S. Oranienburg var. 14+ (Formerly Thielallee)				2						2
S. Orientalis								1		1
S. Orion var. 15+ (Formerly Binza)			1							1
S. Oritamerin					1					1
S. Oslo	2	1	5		1	2	1		7	19
S. Othmarschen		11		1	4			1		17
S. Overschie								1		1
S. Pakistan		4							1	5
S. Panama	11	11	25	12	16	6	8	24	37	150
S. Paratyphi A	11	30	12	5	18	4		3	23	106
S. Paratyphi B	23	33	8	2	18	1	3	19	27	134
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)	9	53	114	50	60	50	26	15	52	429
S. Patience				1						1
S. Pensacola	2			1	4	1				8
S. Poano		1	1		2		2	1	1	8
S. Pomona	2	35	5	4	8			5	2	61
S. Poona	17	54	23	18	21	6	6	58	68	271
S. Potsdam	1	1							2	4
S. Putten				2		1			1	4
S. Reading	3	9	17	6	4	4		6	31	80
S. Richmond	3	1	1	2	1				2	10
S. Ridge				1						1
S. Rissen		1	1	1	2			1	1	7
S. Rittersbach						1				1
S. Romanby						1				1
S. Roodepoort		1		1						2

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Rubislaw	3	2	4	6	22	27	11	1	3	79
S. Ruzizi		1								1
S. Saarbruecken	1									1
S. Saintpaul	39	73	66	31	105	27	9	60	125	535
S. Sandiego	18	35	16	8	21	17	2	13	14	144
S. Sanger					1					1
S. Sapele					1					1
S. Saphra						1	2			3
S. Schleissheim						7				7
S. Schwarzengrund	6	25	16	6	17	3	1	4	21	99
S. Sendai					1					1
S. Senegal		1								1
S. Senftenberg	12	19	17	9	16	3	6	22	19	123
S. Seremban			1							1
S. Shubra		5	1		1					7
S. Simi	1									1
S. Singapore				1					1	2
S. Soerenga									1	1
S. Somone					1	1		1		3
S. Stanley	12	29	24	10	15	10	4	17	53	174
S. Stanleyville	2	9			4		1		2	18
S. Sundsvall	1	2		1				3		7
S. Szentes		1								1
S. Takoradi		1								1
S. Tallahassee			3				1			4
S. Tampico				1						1
S. Teddington				1						1
S. Teitelkebir		4	1	1	2			2	1	11
S. Tennessee	3	6	7	5	4	1		3	7	36
S. Thompson	50	64	82	36	48	26	6	33	95	440
S. Tilene			2							2
S. Toucra	1				1					2
S. Tshiongwe					1			1		2
S. Tucson									1	1
S. Typhi	16	81	28	5	30	5	10	15	99	289
S. Typhimurium	371	1099	1005	586	1315	516	187	380	801	6260
S. Typhimurium var. 5- (Formerly var. Copenhagen)	99	30	22	75	238	120		28	190	802
S. Uganda	4	12	9	4	5	2	7	2	14	59
S. Uganda var. 15+ (Formerly Kinshasa)								3		3
S. Urbana	3	8	5	4	3		2	5	11	41
S. Vejle								1		1
S. Victoria								1		1
S. Virchow	5	4	10	1	14	3		10	13	60
S. Virginia		1		1	2					4
S. Wandsworth		1	1		2				1	5

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. Wangata								1		1
S. Waral			1							1
S. Warnow		1							1	2
S. Waycross			1							1
S. Welikade		1								1
S. Weltevreden	10	1	3	1		1		2	47	65
S. Westhampton								1	4	5
S. Widemarsh		2								2
S. Winneba		1								1
S. Worthington	1	3	5	1	5	1	1	4	6	27
S. Yoruba									1	1
S. Yundum			1							1
S. I 3,10:e,h:-	1								1	2
S. I 3,10:l,v:-	1									1
S. I 3,15,34:l,v:-					1					1
S. I 4,12:-:1,7					1					1
S. I 4,5,12:-:1,2					2			1		3
S. I 4,[5],12:b:-	2	4			1		1	2		10
S. I 4,[5],12:d:-		1	1	1					2	5
S. I 4,[5],12:e,h:-									1	1
S. I 4,[5],12:i:-	44	29	54	34	37	54	12	24	3	291
S. I 4,[5],12:r:-									1	1
S. I 6,7:-:1,5		6			1				2	9
S. I 6,7:e,h:-	1	1								2
S. I 6,7:k:-				1	1					2
S. I 6,7:l,w:-						1				1
S. I 6,7:z4,z23:-		1								1
S. I 6,8:-:1,5		1								1
S. I 6,8:d:-							1		2	3
S. I 6,8:z10:-		1								1
S. I 9,12:-:1,5					3				1	4
S. I 9,12:a:-			1							1
S. I 9,12:l,v:-	1	2								3
S. I 9,12:l,z28:-	2			1	6	2				11
S. I 13,22:b:-	2									2
S. I 13,23:i:-		1								1
S. II 9,12:g,m,[s],t[1,5,7]:[z42] (Includes Hamburg)				1						1
S. II 9,12:g,s,t,e,n,x						1				1
S. II 11:g,[m],s,t,z39									1	1
S. II 13,22:z29:1,5 (Formerly Clifton)					1					1
S. II 13,23:g,m,[s],t:[e,n,x] (Formerly Luanshya)							1			1
S. II 17:g,t- (Formerly Bleadon)			1							1
S. II 35:g,m,s,t:-								1		1
S. II 41:z10:z6 (Formerly Lichtenberg)					1					1
S. II 42:b:e,n,x,z15 (Formerly Uphill)								1		1

TABLE 5

**Salmonella isolates from Human sources
by Serotype and Geographic Region, 2002**

Serotype	Region									Total
	New England	Mid Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	
S. II 47:d:z39 (Formerly Quimbamba)				3	1					4
S. II 48:a:z6								2		2
S. II 48:d:z6 (Formerly Hagenbeck)					1	1		1		3
S. II 48:k:z39 (Formerly Sakaraha)									1	1
S. II 50:b:z6					1			3		4
S. IIIa 17:z4,z23:-								1		1
S. IIIa 18:z4,z23:-								1		1
S. IIIa 21:g,z51:-								1		1
S. IIIa 41:z4,z23:-			2	1				1		4
S. IIIa 45:z4,z24:-								1		1
S. IIIa 48:g,z51:-	1				4	1		1		7
S. IIIa 48:z4,z23:-									1	1
S. IIIa 51:z4,z23:-						1				1
S. IIIa 62:z4,z23:-								1		1
S. IIIb 16:z10:e,n,x,z15						1			1	2
S. IIIb 17:z10:e,n,x,z15				1						1
S. IIIb 38:(k):z35				1						1
S. IIIb 47:k:z35				1				1		2
S. IIIb 48:i:z									1	1
S. IIIb 50:k:z		1	1						1	3
S. IIIb 50:k:z53								1		1
S. IIIb 50:r:z			1					1		2
S. IIIb 50:z:z52		1								1
S. IIIb 60:r:e,n,x,z15						1				1
S. IIIb 60:r:z				1						1
S. IIIb 61:c:z35									1	1
S. IIIb 61:l,[v],[z13]:-				1						1
S. IIIb 61:l,[v],[z13]:1,5,[7]			13	1	2					16
S. IIIb 61:r:z53			1							1
S. IV 6,7:z4,z24:- (Formerly Kralendyk)		2	2		1	1			2	8
S. IV 11:z4,z23:- (Formerly Parera)								1		1
S. IV 16:z4,z32:- (Formerly Chameleon)	1	3	1	2	1		3			11
S. IV 21:g,z51:-								1		1
S. IV 43:z4,z32:- (Formerly Tuindorp)		2								2
S. IV 44:z36:-			3						1	4
S. IV 44:z4,z23:-	3	2	2	1		4				12
S. IV 44:z4,z32:- (Formerly Lohbruegge)	1								1	2
S. IV 45:g,z51:-			1							1
S. IV 48:g,z51:- (Formerly Marina)	1	11	5	1	11	2		2	5	38
S. IV 50:g,z51:- (Formerly Wassenaar)	1	2	3		2	4		5	4	21
S. IV 50:z4,z23:- (Formerly Flint)	1				4				1	6
Partially serotyped isolates	24	134	88	74	475	43	62	27	210	1137
Rough or nonmotile isolates	10	6	5	4	9	1		3	5	43
Unknown	16	28	141	27	32	117	2	55	31	449
Total	2136	5385	4611	2670	6790	2600	1143	2178	4795	32308

TABLE 6

**Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Clinical Nonhuman Source									Total
	Reptiles	Porcine	Bovine	Other Domestic Animals /Environment	Chicken	Turkey	Equine	Other Birds /Wild Animals	All Others	
S. Abony	6									6
S. Adelaide	4	2	2	1						9
S. Agona	1	53	124	25	2	21	169	14		409
S. Agoueve	1									1
S. Alachua			1				1			2
S. Albany			2		1	1				4
S. Amager		1	1							2
S. Amsterdam			1							1
S. Amsterdam var. 15+ (Formerly Drypool)			1							1
S. Anatum	8	33	89	18	4	8	81	4	1	246
S. Anatum var. 15+ (Formerly Newington)		1	5	2			31	1		40
S. Apeyeme			1							1
S. Aqua	1									1
S. Arechavaleta			1				1			2
S. Baildon							1	3		4
S. Banana			2					1		3
S. Bardo			40					1		41
S. Bareilly		1		1			2	6		10
S. Beaudesert	1									1
S. Bere			1							1
S. Berta		2		1			1			4
S. Blockley	1						2			3
S. Bovismorbificans		2	10				1			13
S. Braenderup	6	1	6	2			14	4		33
S. Brandenburg		45	5	3						53
S. Bredeney		16	3	1	1	30	2	11		64
S. Carrau								1		1
S. Cerro	2	3	39		2		4			50
S. Charity	3									3
S. Choleraesuis **		204								204
S. Cotham									1	1
S. Cubana	1		3			5				9
S. Denver			1							1
S. Derby		250	8	2			1			261
S. Dublin			136	1						137
S. Duval							1			1
S. Eastbourne			1							1
S. Enteritidis	1	9	11	5	30	1		8	3	68
S. Falkensee								2		2
S. Fresno	1									1
S. Gallinarum (Includes Pullorum)					15					15
S. Gaminara		1		3			1	2		7
S. Give	1	8	15	2			5	1		32

TABLE 6

**Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Clinical Nonhuman Source									Total
	Reptiles	Porcine	Bovine	Other Domestic Animals /Environment	Chicken	Turkey	Equine	Other Birds /Wild Animals	All Others	
S. Give var. 15+ (Formerly Newbrunswick)			7				1			8
S. Hadar		24	1	2	6	30		1		64
S. Hartford			4	1			12	2		19
S. Havana	6	7	6	1	1		2	1		24
S. Heidelberg		80	38	13	113	63	5	15		327
S. Hindmarsh							1			1
S. Hvitvingfoss				1			1			2
S. Indiana								3		3
S. Infantis	1	48	17	8			10	15		99
S. Inverness							5	1		6
S. Istanbul					1					1
S. Javiana			1	9			15	7		32
S. Johannesburg		17	3		1					21
S. Kentucky		1	70	7	67	2	1	9		157
S. Kiambu		2	6			2	1			11
S. Kodjovi	1									1
S. Krefeld		2								2
S. Lawndale				1						1
S. Lexington			1							1
S. Lexington var. 15+ (Formerly Manila)								1		1
S. Lille							1			1
S. Litchfield	1	1	5	2	3		4	2		18
S. Livingstone	1	2	2		2					7
S. Lome	2									2
S. Lomita		3								3
S. London		11	9							20
S. Luciana							1			1
S. Manhattan		9					1	2		12
S. Mbandaka	1	5	54	5	4	1	6	3		79
S. Meleagridis			31				5			36
S. Meleagridis var. 15+ (Formerly Cambridge)			1							1
S. Memphis							1			1
S. Miami	1						2		1	4
S. Midway				1						1
S. Minnesota	1		9			3				13
S. Mississippi				1			4	1		6
S. Montevideo	1	2	115	9	23	29	7	9		195
S. Muenchen	5	20	10	3		3	12	7		60
S. Muenster	1	3	87	4	1	7	7	5		115
S. Muenster var. 15+ (Formerly Newhaw)			1							1
S. Muenster var. 15+,34+ (Formerly Arkansas)		1					1	1		3
S. Newport	4	17	769	46	1	6	150	14	1	1008
S. Nima	2									2

TABLE 6

**Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Clinical Nonhuman Source									Total
	Reptiles	Porcine	Bovine	Other Domestic Animals /Environment	Chicken	Turkey	Equine	Other Birds /Wild Animals	All Others	
S. Norwich		1					1	2		4
S. Nottingham			1							1
S. Nyanza	1									1
S. Ohio	1	15	2				1			19
S. Oranienburg	4	1	50	4			21	7		87
S. Orion		2								2
S. Orion var. 15+ (Formerly Binza)			1							1
S. Orion var. 15+,34+ (Formerly Thomasville)			3	1	2					6
S. Ouakam						3				3
S. Panama			2				4	1		7
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)		1	6	2			17	2		28
S. Pomona	1		5							6
S. Poona	1			1						2
S. Putten		1	1		1					3
S. Reading		21	30	1		1	8	1		62
S. Rissen				1				1		2
S. Romanby	1									1
S. Roodepoort				1						1
S. Rubislaw	1			1			11	4		17
S. Saintpaul		1	16	2		11	21	8	1	60
S. Sandiego			9					3		12
S. Schwarzengrund		4	6	5	20		3		1	39
S. Senftenberg	2	17	12	5	18	94	3	5		156
S. Soerenga					2					2
S. Sundsvall							1			1
S. Sunnycove	1									1
S. Tallahassee							1			1
S. Tennessee		13	5	1			1	2		22
S. Thompson	1	1	26	5	2	2	13	5		55
S. Tilene								1		1
S. Typhimurium *	3	413	583	76	30	49	161	118	20	1453
S. Uganda		16	91	3			4		1	115
S. Uganda var. 15+ (Formerly Kinshasa)	4		4							8
S. Vejle							1			1
S. Virginia							1			1
S. Weltevreden				1						1
S. Weslaco							1			1
S. Worthington		19	3			3	5			30
S. I 3,10:l,w:-			1	1						2
S. I 3,15:l,v:-			4							4
S. I 3,15:z10:-		1								1
S. I 4,12:-:1,2		1								1
S. I 4,12:-:1,7								2		2

TABLE 6

**Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Clinical Nonhuman Source									Total
	Reptiles	Porcine	Bovine	Other Domestic Animals /Environment	Chicken	Turkey	Equine	Other Birds /Wild Animals	All Others	
S. I 4,12:r:-			1							1
S. I 4,[5],12:d:-			1							1
S. I 4,[5],12:i:-	2	11	25	3	12		17	12		82
S. I 6,7:-:1,5		1	1							2
S. I 6,7:k:-			1			1		1		3
S. I 6,7:z10:-		38								38
S. I 6,8:-:1,2			1					1		2
S. I 6,8:d:-								1		1
S. II 16:m,t:z42U	1									1
S. II 47:a:1,5	1									1
S. II 58:c:z6	3									3
S. IIIa 18:z4,z32	2					18		1		21
S. IIIa 35:g,z51:-								1		1
S. IIIa 40:z36:-								1		1
S. IIIa 41:z4,z23:-	3									3
S. IIIa 42:z4,z24:-	1									1
S. IIIa 44:z4,z23	2									2
S. IIIa 44:z4,z24	2									2
S. IIIa 48:z4,z24:-				1	1					2
S. IIIa 51:z4,z23:-	3									3
S. IIIa 56:z4,z23:-	7			1						8
S. IIIb (6),14:z10:z	6									6
S. IIIb 16:z10:e,n,x,z15	2									2
S. IIIb 17:l,v:z34	1									1
S. IIIb 18:l,v:z	6									6
S. IIIb 35:k:e,n,x,z15	2									2
S. IIIb 35:r:z	1									1
S. IIIb 38:k:-	1									1
S. IIIb 38:l,v:z53	1									1
S. IIIb 42:z10:z	1									1
S. IIIb 47:c:e,n,x,z15:z257U	2									2
S. IIIb 47:k:z35	10									10
S. IIIb 47:k:z53	2									2
S. IIIb 47:r:z53	1									1
S. IIIb 48:i:z	5									5
S. IIIb 48:i:z35:z257U	1									1
S. IIIb 48:z52:z	5									5
S. IIIb 50:k:1,5	1									1
S. IIIb 50:k:z	4							1		5
S. IIIb 50:k:z53	1									1
S. IIIb 50:r:z	9		1					1		11
S. IIIb 52:z:z52	2									2
S. IIIb 53:k:e,n,x,z15								1		1

TABLE 6

**Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Clinical Nonhuman Source									Total
	Reptiles	Porcine	Bovine	Other Domestic Animals /Environment	Chicken	Turkey	Equine	Other Birds /Wild Animals	All Others	
S. IIIb 53:z10:z	1									1
S. IIIb 57:c:z	2									2
S. IIIb 58:l,v:z35	4									4
S. IIIb 58:z52:z35	5									5
S. IIIb 60:i:e,n,x,z15								2		2
S. IIIb 60:r:e,n,x,z15	3			1				1		5
S. IIIb 61:(k):z53	1									1
S. IIIb 61:-:1,5,(7)	1		1	35						37
S. IIIb 61:c:z35	1									1
S. IIIb 61:i:z	1									1
S. IIIb 61:l,v,(z13):1,5,(7)	8									8
S. IIIb 61:l,v:z35	1									1
S. IIIb 65:(k):z35	1									1
S. IIIb 65:l,v:z	2									2
S. IIIb 65:z10:e,n,x,z15	1									1
S. IV 1,53:g,z51:-	1							1		2
S. IV 11:z4,z23:- (Formerly Parera)	2									2
S. IV 16:z4,z32:- (Formerly Chameleon)	5									5
S. IV 40:z4,z24:-							1			1
S. IV 43:z4,z23:- (Formerly Houten)	1									1
S. IV 44:z4,z23:-	1									1
S. IV 44:z4,z32:- (Formerly Lohbruegge)								1		1
S. IV 45:g,z51:-	1									1
S. IV 48:g,z51:- (Formerly Marina)	6									6
S. IV 50:g,z51:- (Formerly Wassenaar)	6			1						7
S. IV 50:z4,z23:- (Formerly Flint)	1							1		2
Partially serotyped isolates	3									3
Rough or nonmotile isolates		16	25	1	1			1		44
Total	237	1481	2674	335	367	394	871	348	30	6737

TABLE 7

**Non-Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Non-Clinical Nonhuman Source										Total
	Turkey	Reptiles	Chicken	Porcine	Bovine	Other Domestic Animals /Environment	Feed/Feed Supplements	Other Birds /Wild Animals	Equine	All Others	
S. Adelaide	5	1								1	7
S. Agona	52		25	31	25	33	2	4		50	222
S. Alachua	1		2		1					3	7
S. Albany	6										6
S. Amager			3							2	5
S. Amsterdam			2								2
S. Amsterdam var. 15+ (Formerly Drypool)						1				2	3
S. Anatum	24		13		112	2		1		64	216
S. Anatum var. 15+ (Formerly Newington)			1		5	1				4	11
S. Babelsberg	1										1
S. Banana			2							1	3
S. Bardo	2		2		1					2	7
S. Bareilly			2		1						3
S. Barranquilla	1				1						2
S. Bere	1										1
S. Bergen					1						1
S. Berta	13		14							9	36
S. Blockley			1								1
S. Bovismorbificans										3	3
S. Braenderup			74							26	100
S. Brandenburg				5	1					64	70
S. Bredeney	30		2	1	24					12	69
S. California			1								1
S. Carrau										1	1
S. Cerro	1		21		90	3	1	2		13	131
S. Chailey										1	1
S. Charity										3	3
S. Choleraesuis **	6										6
S. Cubana	5		5		12		1			6	29
S. Daytona			1								1
S. Derby	17		3	175		2				146	343
S. Dublin					36					10	46
S. Enteritidis	1		103		4					119	227
S. Florida		1									1
S. Gallinarum (Includes Pullorum)			3								3
S. Gaminara										2	2
S. Gera							2				2
S. Give	6		6		4	1				8	25
S. Give var. 15+ (Formerly Newbrunswick)	4				4					5	13
S. Godesberg			1								1
S. Haardt										3	3
S. Hadar	189		10		1		5			40	245
S. Hartford					1					7	8

TABLE 7

**Non-Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Non-Clinical Nonhuman Source										Total
	Turkey	Reptiles	Chicken	Porcine	Bovine	Other Domestic Animals /Environment	Feed/Feed Supplements	Other Birds /Wild Animals	Equine	All Others	
S. Havana	6		2		2						10
S. Heidelberg	342		1493	2	1	75	3	2		296	2214
S. Hindmarsh										1	1
S. Indiana								4			4
S. Infantis	1		42	7	6					60	116
S. Isangi										1	1
S. Istanbul	16		5							4	25
S. Javiana	25		1			4					30
S. Johannesburg	6		10							18	34
S. Kentucky	27		410		155	3	2			202	799
S. Kiambu	1		2		1		1			3	8
S. Lille	2		17								19
S. Litchfield			1							8	9
S. Liverpool	4										4
S. Livingstone			16		3		1				20
S. Lomita										1	1
S. London	3									26	29
S. Manhattan										1	1
S. Mbandaka	50		85	11	66	1	1	5		27	246
S. Meleagridis			2	2	175					8	187
S. Miami										1	1
S. Minnesota	2		4		1					2	9
S. Molade	1		3								4
S. Montevideo	20		73		418	2				70	583
S. Muenchen	2	1	9		1					19	32
S. Muenster	169		23		6		3			31	232
S. Muenster var. 15+ (Formerly Newhaw)	1										1
S. Muenster var. 15+,34+ (Formerly Arkansas)	2										2
S. Newport	10		27		30	25				63	155
S. Ohio			11		19					8	38
S. Oranienburg	25		24		13	7				5	74
S. Orion	1		3							2	6
S. Orion var. 15+ (Formerly Binza)	1				1						2
S. Orion var. 15+,34+ (Formerly Thomasville)			7		13					1	21
S. Ouakam	3		2				1			1	7
S. Pakistan										3	3
S. Panama	2				1						3
S. Paratyphi B var. L(+) tartrate+ (Formerly Java)					10	1				3	14
S. Poona										2	2
S. Putten	3									1	4
S. Reading	46				6	1	1	1		20	75
S. Richmond										1	1
S. Rubislaw										3	3

TABLE 7

**Non-Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Non-Clinical Nonhuman Source										Total
	Turkey	Reptiles	Chicken	Porcine	Bovine	Other Domestic Animals /Environment	Feed/Feed Supplements	Other Birds /Wild Animals	Equine	All Others	
S. Ruiru			1								1
S. Saintpaul	74		3			16				12	105
S. Sandiego			1		62					3	66
S. Schwarzengrund	15		59				1			11	86
S. Senftenberg	383		49		20		4			22	478
S. Taksony					1						1
S. Tallahassee										1	1
S. Tennessee	1		12		1					7	21
S. Thompson	6		16		5					18	45
S. Typhimurium *	51		202	74	171	60	1	26	8	541	1134
S. Uganda			2	14	1	1			1	36	55
S. Uganda var. 15+ (Formerly Kinshasa)										1	1
S. Urbana	6										6
S. Vejle					1						1
S. Widemarsh										1	1
S. Worthington	14		33	8	1					14	70
S. I 3,10:-:1,6	1				9					2	12
S. I 3,10:e,h:-	1				2						3
S. I 3,10:l,w:-					42						42
S. I 3,15:l,v:-					1						1
S. I 4,12:-:1,2	2									1	3
S. I 4,12:-:1,7										1	1
S. I 4,12:r:-			2								2
S. I 4,5,12:-:1,2			6								6
S. I 4,[5],12:i:-	7		25		4	5				26	67
S. I 6,7:-:1,5			1								1
S. I 6,7:d:-			2								2
S. I 6,7:k:-			1							3	4
S. I 6,7:z10:-	2		3								5
S. I 8,20:-:z6	1									2	3
S. I 8,20:i:-			1								1
S. IIIa 18:z4,z23										1	1
S. IIIa 18:z4,z32	46										46
S. IIIa 41:z4,z23:-		1								1	2
S. IIIa 48:g,z51	1										1
S. IIIa 53:z4,z23:-	1										1
S. IIIb 50:k:z		1									1
S. IIIb 50:r:z										1	1
S. IIIb 52:z:z52								3			3
S. IIIb 58:l,v:z35								1			1
S. IIIb 61:-:1,5,(7)			1								1
S. IV 40:z4,z32:- (Formerly Bern)										1	1
S. IV 44:z4,z32:- (Formerly Lohbruegge)		1									1

TABLE 7

**Non-Clinical Salmonella isolates from Nonhuman sources
Reported to CDC and NSVL by Serotype and Source, 2002**

Serotype	Non-Clinical Nonhuman Source										Total
	Turkey	Reptiles	Chicken	Porcine	Bovine	Other Domestic Animals /Environment	Feed/Feed Supplements	Other Birds /Wild Animals	Equine	All Others	
S. IV 48:g,z51:- (Formerly Marina)								2			2
Partially serotyped isolates										1	1
Rough or nonmotile isolates	5		11		6	2		2		7	33
Total	1753	6	3000	330	1579	246	30	53	9	2213	9219

TABLE 8

**The Top 20 most frequently reported *Salmonella* serotypes from Human sources
Percent Change in reported isolates**

Rank			Serotype	Reported Isolates			Percent Change		
1992	1997	2002		1992	1997	2002	1992-1997	1997-2002	1992-2002
1	1	1	S. Typhimurium *	7950	9116	7062	15	-23	-11
2	2	2	S. Enteritidis	6578	7924	5116	20	-35	-22
5	4	3	S. Newport	1481	1584	4204	7	165	184
3	3	4	S. Heidelberg	2528	2104	1957	-17	-7	-23
8	8	5	S. Javiana	648	675	1188	4	76	83
10	6	6	S. Montevideo	559	718	717	28	-0	28
14	13	7	S. Muenchen	449	543	591	21	9	32
9	11	8	S. Oranienburg	597	623	585	4	-6	-2
11	14	9	S. Saintpaul	529	436	535	-18	23	1
12	9	10	S. Infantis	499	651	463	30	-29	-7
7	7	11	S. Thompson	690	695	440	1	-37	-36
24	20	12	S. Paratyphi B var. L(+ tartrate+ (Formerly Java)	156	184	429	18	133	175
13	12	13	S. Braenderup	477	559	384	17	-31	-19
6	5	14	S. Agona	750	740	337	-1	-54	-55
4	10	15	S. Hadar	1532	643	331	-58	-49	-78
27	18	16	S. Mississippi	137	205	313	50	53	128
17	36	17	S. Berta	333	87	297	-74	241	-11
		18	S. I 4,[5],12:i:-			291			
15	15	19	S. Typhi	449	349	289	-22	-17	-36
18	16	20	S. Poona	218	293	271	34	-8	24

NOTE:

* Typhimurium includes var. 5- (Formerly var. Copenhagen)

FIGURE 2

***S. Enteritidis* Isolation rates per 100,000 population by Region: 1970-2002**

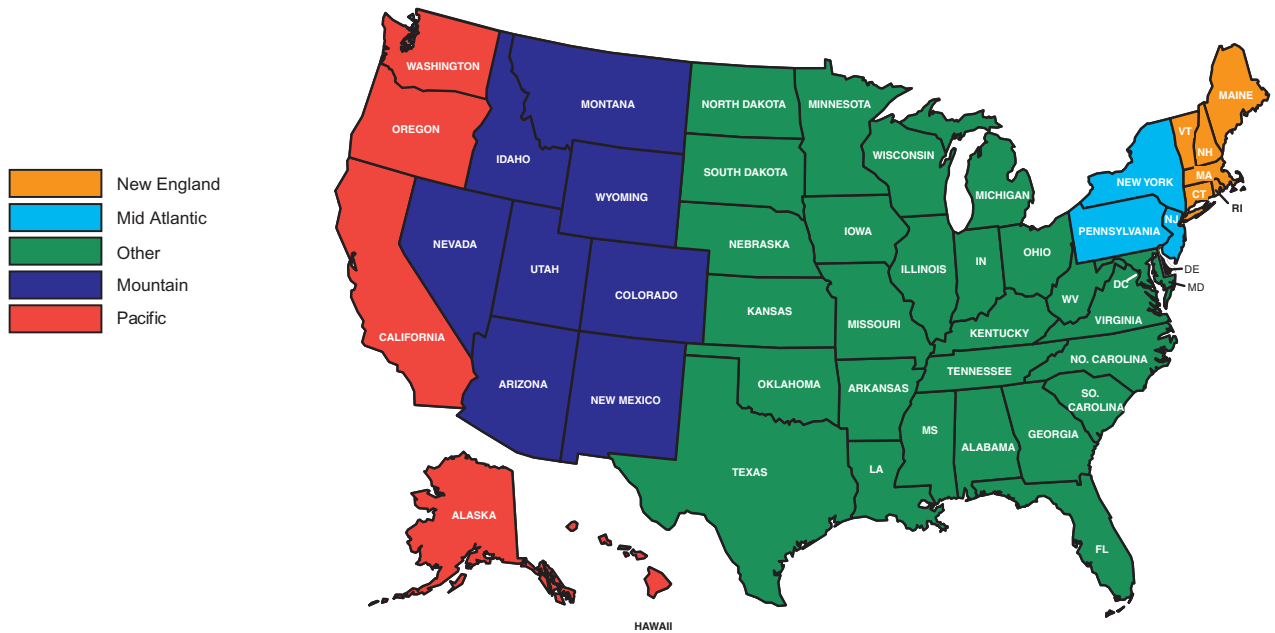
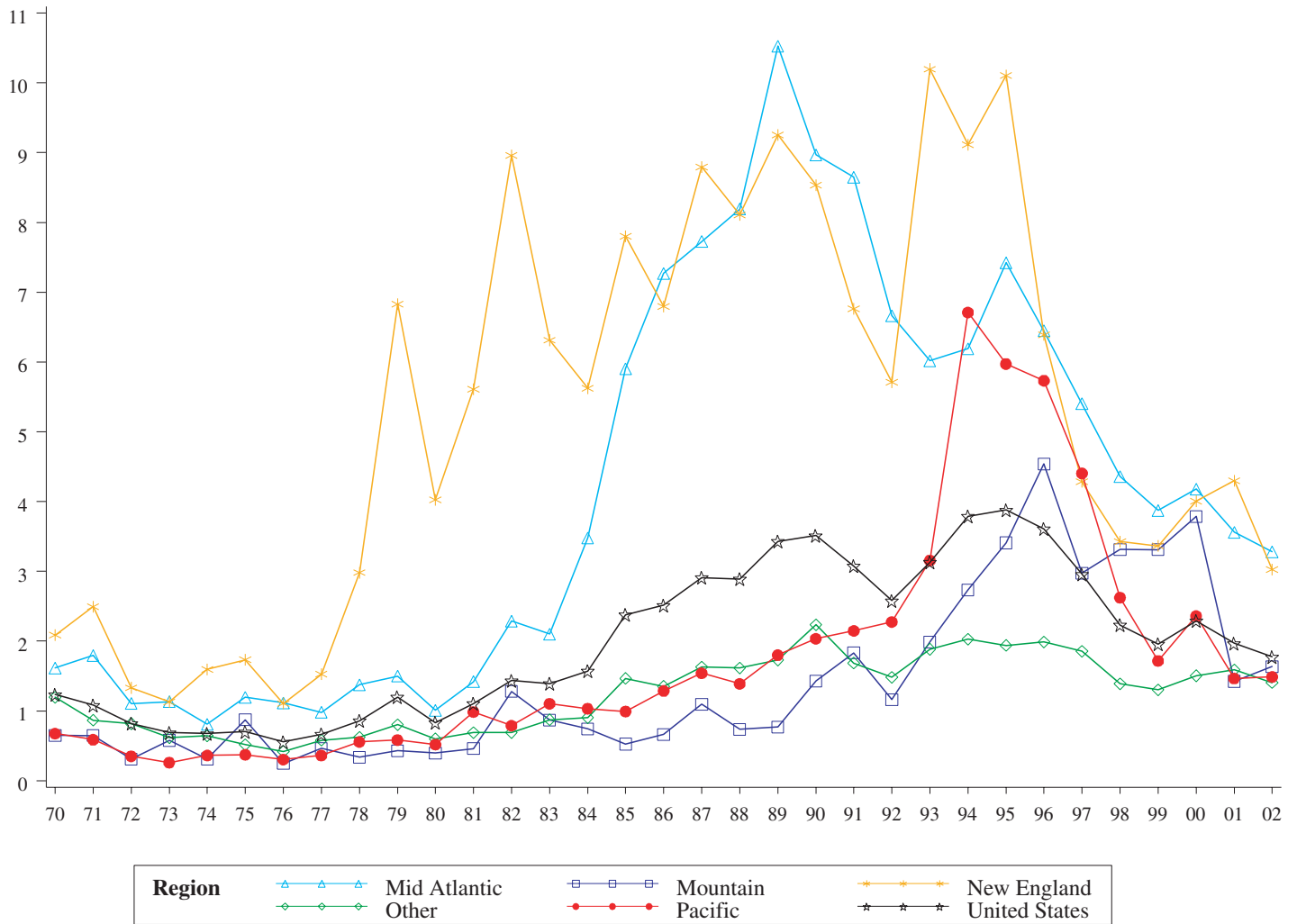


FIGURE 3

Top 4 Salmonella Serotypes in the United States
Isolation rates per 100,000 population: 1970-2002

