



CZECH REPUBLIC (CZH)

Population 10.3 million (1994)

Area: 127 869 km²



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1. General information

1.1 Organizational structure

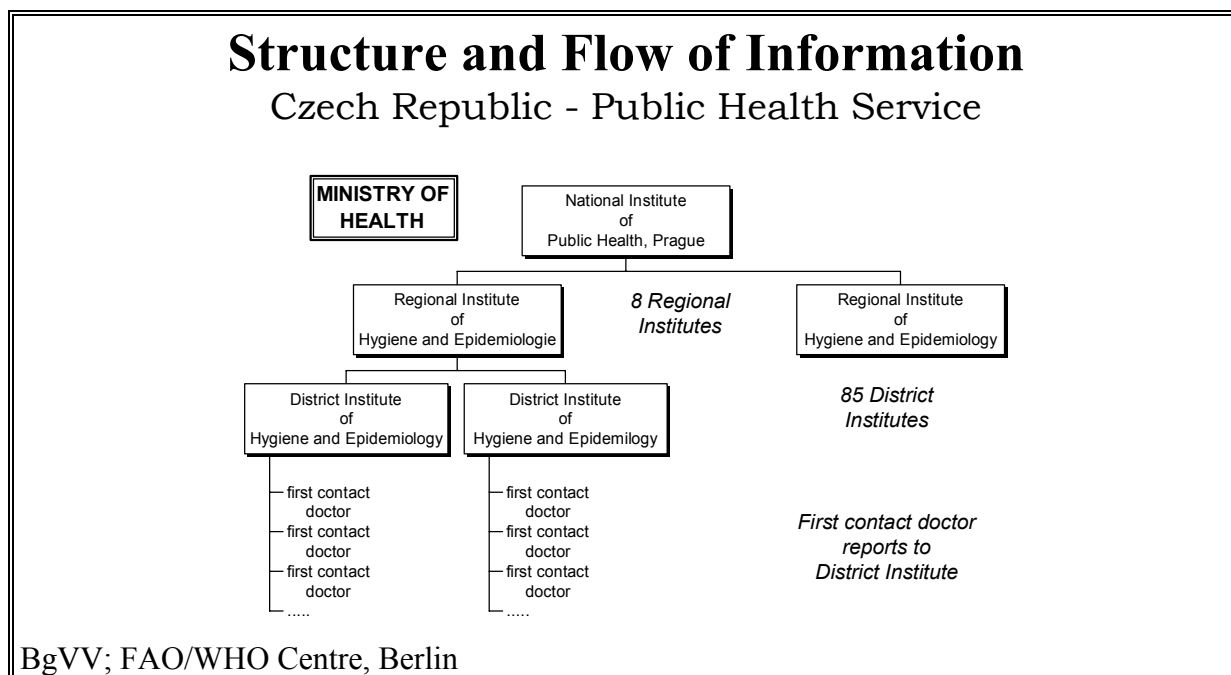
Public health services at all levels (Central governmental, Regions and Districts) were centralized under the Ministry of Health of the Czech Republic. Since the last report to the WHO Surveillance Programme for Control of Foodborne Infections and Intoxications in Europe, principles and organization of the services have not changed.

The organizational structure of notification is as follows: District Public Health Service -> Regional Public Health Service -> National Institute of Public Health.

The Public Health Service is responsible for collection and processing of notifiable disease data. The National Institute of Public Health in Prague carries the main responsibility for this activity and coordinates the reporting system of notifiable diseases at the national level. Regional Institutes of Hygiene and Epidemiology control District Institutes of Hygiene and Epidemiology and form a link between the top and basic levels of Public Health Service.

Food inspection belongs mainly to the Veterinary Service of the Ministry of Agriculture and Food of the Czech Republic; it cooperates closely with medical epidemiology and hygiene authorities.

Figure CZ 1



1.2 Collection and processing of data

Data collection and processing is done with the EPIDAT program (based on the EPI-INFO system). This program was created by the Regional Public Health Service of Central Bohemia to ensure notification, registration and analysis of morbidity due to infectious diseases. Since 1993, EPIDAT has been used nation-wide by all public health services and currently is part of the National Health Information System and the basis of local, regional and national surveillance of infectious diseases.

EPIDAT is a health information system based on notification by attending physicians and those of public health service. Since it comprises personal data on patients and individuals at risk, it is governed by the legislation on protection of personal data in health information systems. The system consists of several interdependent sections allowing data entry at a District level and data coding and transmission to the Regional level and to the National Institute of Public Health where major analyses for different periods are done.

1.3 Coding and Definitions

Obligatory notification of communicable diseases, including foodborne infections and intoxications, is performed according to the international recommendations and the ICD-10 coding system. At least two cases connected in any way or by any factor in place and time relation are considered as an outbreak. Cases without any connection are considered as sporadic ones. Cases of outbreaks in families (close collective) are classified as family outbreak.

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1.4 Information output

A "Weekly Communicable Diseases Monitor" is regularly released. The "Monitor" is provided to all participating institutes of hygiene and epidemiology and to the Ministry of Health. It is available in printed or computerized form.

A monthly and yearly analysis is regularly produced and provided to human and veterinary health authorities.

2. Statutory notification

Table CZ 1

Notified cases of foodborne diseases and incidence rate
CZECH REPUBLIC 1993 - 1998

ICD-10 Disease	1993		1994		1995		1996		1997		1998	
	C*	I**	C*	I**	C*	I**	C*	I**	C*	I**	C*	I**
A01 Para- / Typhoid fever	5	0.0	6	0.1	8	0.1	6	0.1	5	0.0	3	0.0
A02 Salmonellosis	43146	417.7	49358	477.5	52588	509.0	46646	451.6	38481	373.5	49045	476.4
A02N <i>Salmonella</i> carrier	1390	13.5	1376	13.3	966	9.0	1479	14.3	1349	13.1	1764	16.9
A03 Shigellosis	1198	11.6	1800	17.4	1741	16.9	796	7.7	612	5.9	511	4.9
B68 Taeniasis	96	0.9	58	0.6	27	0.3	27	0.3	10	0.1	65	0.6
B15 Hepat. A	857	8.3	936	9.1	1098	10.6	2032	19.7	1140	11.0	904	9.0
A09 Infect. ent. of unknown origin	804	7.8	1277	12.4	1270	12.3	1296	12.5	1022	9.9	661	6.4
A08 Other vir.ent.	4456	43.1	4467	43.3	5478	53.0	578	5.6	472	4.6	918	8.9
A07.1 Giardiasis	1111	10.8	943	9.1	663	6.4	439	4.3	352	3.4	276	2.7
A06 Amoebiasis	17	0.2	19	0.2	20	0.2	5	0.0	15	0.1	14	0.1
A04.7 Clostrid.	92	0.9	55	0.5	146	1.4	-	0.0	38	0.4	160	1.5
A05 Other bact.foodb.infect.	920	8.9	406	3.9	916	8.9	588	5.7	202	2.0	491	4.8
A05.1 Botulism	4	0.0	0	0.0	0	0.0	3	0.0	0	0.0	6	0.1
EHEC	*	-	3	0.0	18	0.0	63	0.6	75	0.7	126	1.2

* C cases

** I incidence rate (number of cases per 100 000 inhabitants)

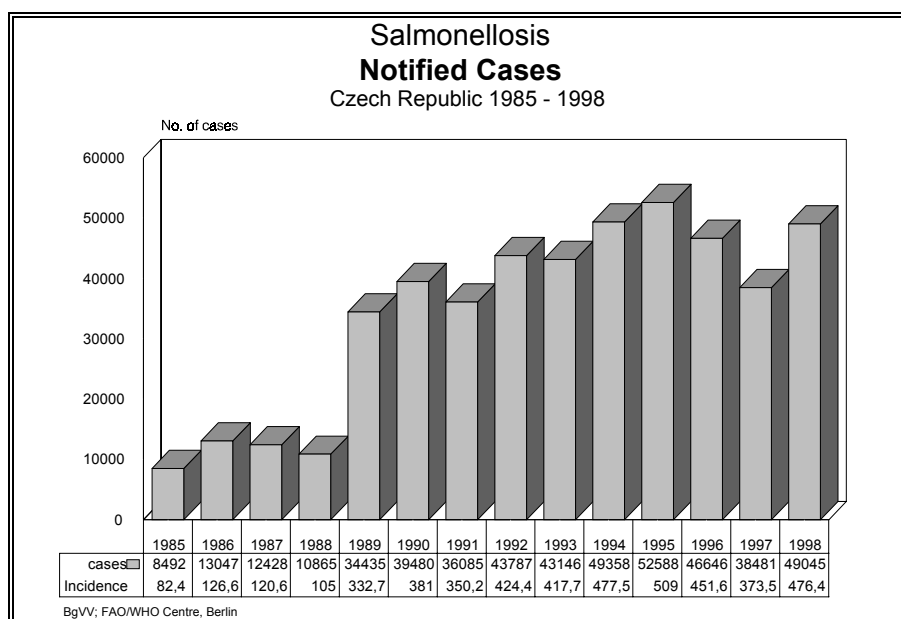
3. Epidemiologically investigated incidents

3.1 Causative agents

3.1.1 Salmonellosis

3.1.1.1 Number of cases and incidence rate

Figure CZ 2



3.1.1.2 Epidemiological character of salmonellosis

Table CZ 2

Epidemic character of salmonellosis
CZECH REPUBLIC 1993 - 1998

	1993		1994		1995		1996		1997		1998	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Sporadic cases	26971	62,5	30384	61,5	36687	69,8	30636	65,7	23446	60,9	36485	74,4
Cases in family outbreaks	7634	17,7	8626	17,5	9309	17,7	8314	17,8	8178	21,3	7868	16,0
Cases in epidemics	8541	19,8	10348	21,0	6592	12,5	7696	16,5	6834	17,8	4693	9,6
Total	43146	100	49358	100	52588	100	46642	100	38481	100	49045	100

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3.1.1.3 Salmonella Serotypes

Table CZ 3

Salmonella cases by serotypes
CZECH REPUBLIC 1993 - 1998

	1993	1994	1995	1996	1997	1998	Total
<i>S. Enteritidis</i>	36213	46679	51294	45640	36872	43793	260491
<i>S. Typhimurium</i>	3581	1525	1138	887	1130	873	9134
<i>S. Infantis</i>	200	281	403	147	235	65	1331
<i>S. Agona</i>	289	183	81	50	46	16	665
<i>S. Bredeney</i>	44	64	69	9	7	-	193
<i>S. Derby</i>	66	38	32	45	27	16	224
<i>S. Virchow</i>	72	45	29	26	14	13	199
<i>S. Hadar</i>	1	12	25	52	44	50	184
<i>S. Tennessee</i>	117	43	25	10	7	12	214
<i>S. Panama</i>	11	3	22	3	2	-	41
<i>S. Saintpaul</i>	11	27	18	16	21	36	129
<i>S. Montevideo</i>	9	5	15	39	37	14	119
<i>S. Newport</i>	2	6	10	26	20	17	81
<i>S. Anatum</i>	2	2	9	6	8	7	34
<i>S. London</i>	7	10	8	16	9	-	50
<i>S. Ohio</i>	3	26	8	4	2	4	47
<i>S. Isangi</i>	2	12	7	3	2	-	26
<i>S. Muenchen</i>	0	7	7	6	2	4	26
<i>S. Arizona</i>	1	2	6	-	5	-	14
<i>S. Bareilly</i>	2	7	6	20	15	8	58
<i>S. Oranienburg</i>	0	3	6	8	-	6	23
<i>S. Litcfield</i>	-	-	-	-	-	8	8
<i>S. Jina urcena</i>	-	-	-	-	-	56	56
<i>S. NS</i>	-	-	-	-	-	30	30
<i>S. Heidelberg</i>	-	-	-	-	-	8	8
<i>S. Blockley</i>	-	-	-	-	-	8	8
<i>S. Manhattan</i>	-	-	-	-	-	7	7
<i>S. Kentucky</i>	-	-	-	-	-	6	6
<i>S. Manchester</i>	-	-	-	-	-	4	4
<i>S. Kottbus</i>	-	-	-	-	-	4	4
Total	40633	48980	53218	47013	38505	45065	273414

Figure CZ 3

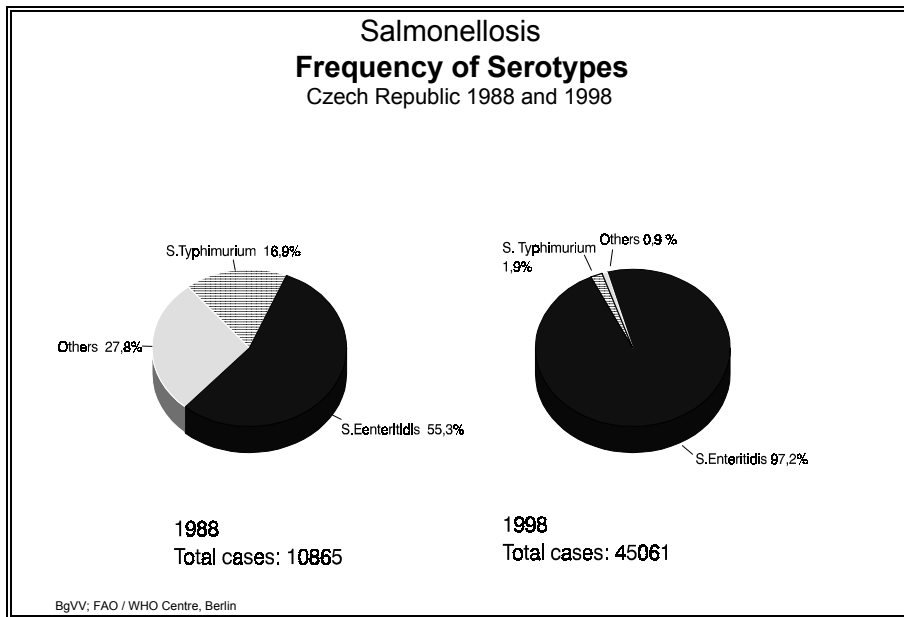
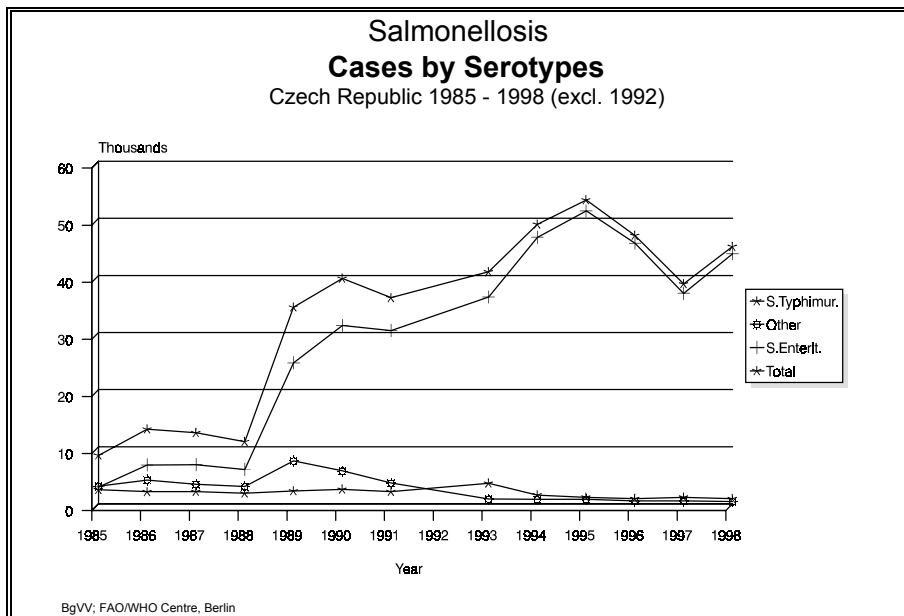
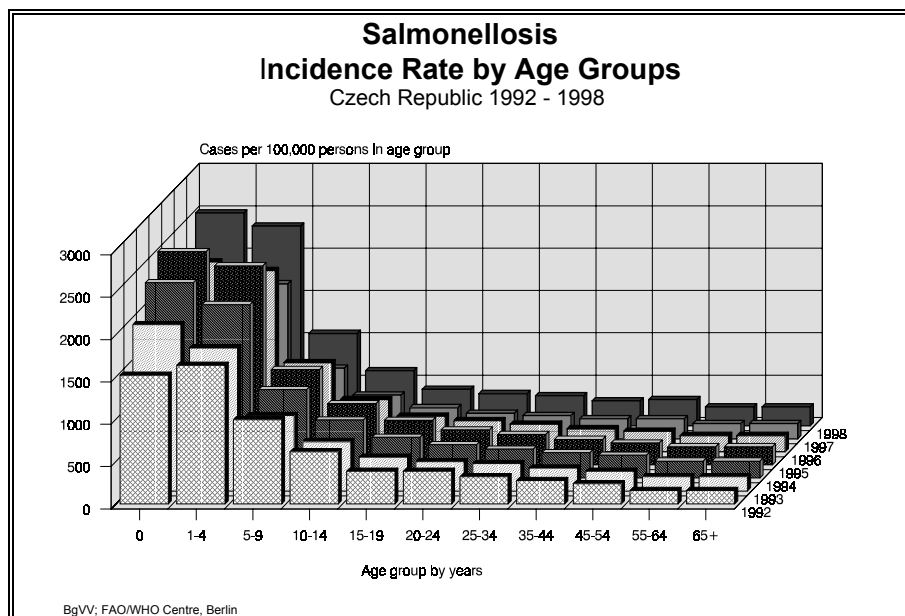


Figure CZ 4



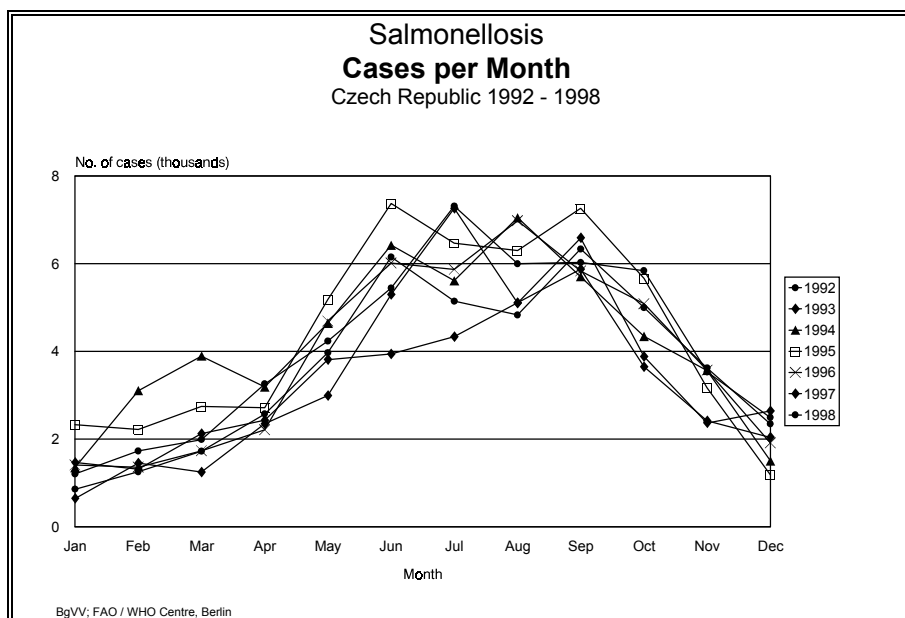
3.1.1.4 Age groups affected

Figure CZ 5



3.1.1.5 Seasonal distribution

Figure CZ 6



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3.1.2 Shigellosis (dysentery)

Table CZ 4

Causative agents of dysentery
CZECH REPUBLIC 1993 - 1998

Agent	1993	1994	1995	1996	1997	1998	Total 1993-1998
<i>Sh. sonnei</i>	841	1500	1242	579	393	429	4984
<i>Sh. flexneri</i>	299	206	127	128	191	54	1005
<i>Sh. boydii</i>	1	1	1	2	1	2	8
<i>Sh. dysenteriae</i>	1	0	0	1	2	25	29
Others	8	2	3	1	0	1	15

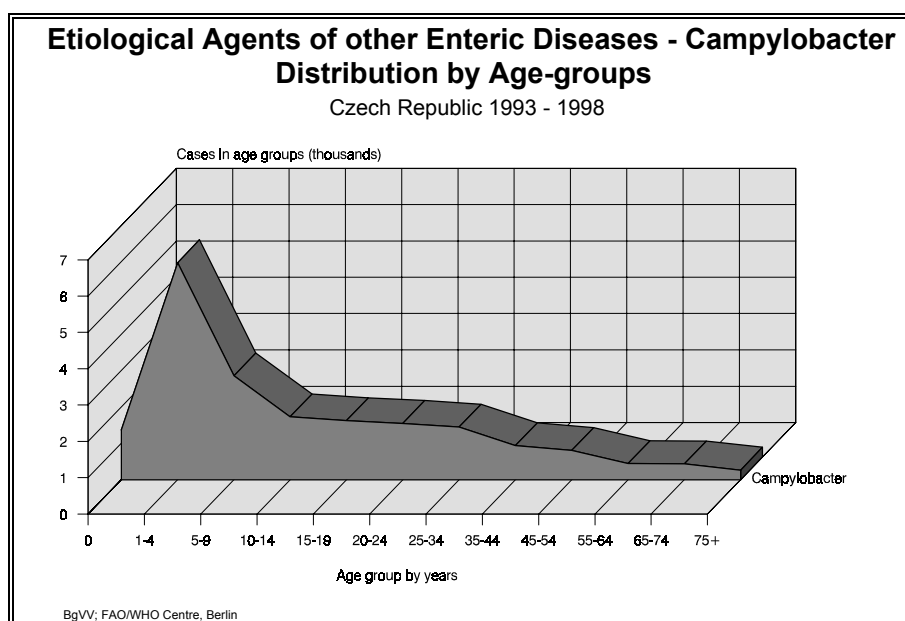
3.1.3 Other foodborne and enteric diseases

Table CZ 5

Etiological agents of other enteric diseases
with known causative agent by age groups
CZECH REPUBLIC 1993 - 1998

Agent	Age groups											Total 93-98	
	0-11m	1-4	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65-74		75+
<i>Campylo- bacter</i>	1372	5974	2859	1729	1626	1550	1451	937	804	442	433	261	19438
<i>Citrobacter</i>	508	497	241	235	192	126	161	164	181	93	109	118	2635
<i>E.coli</i>	3381	1719	67	33	76	45	42	15	27	9	11	14	5439
<i>Entero- coccus</i>	17	21	5	2	4	2	2	1	4	1	0	0	59
<i>Klebsiella</i>	201	62	8	1	3	1	3	1	1	3	0	1	285
<i>Plesimonas</i>	22	12	5	7	3	3	4	0	1	0	1	3	61
<i>Pseudo- monas</i>	27	20	6	1	1	2	0	0	0	3	5	51	116
<i>Rotavirus</i>	298	536	73	14	6	2	7	3	9	5	6	32	891
<i>Staphylo- coccus</i>	71	89	6	0	2	1	0	1	0	0	0	0	170
<i>Y. ent.</i>	45	243	218	123	59	48	49	27	34	5	7	4	862
Other	352	389	84	69	54	57	71	77	85	39	53	55	1385

Figure CZ 7



3.2 Incriminated food

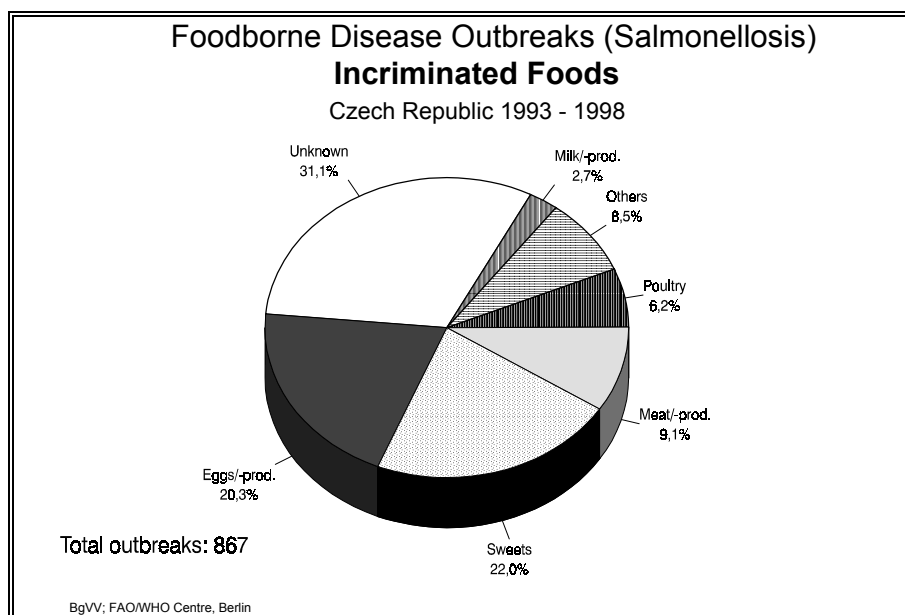
3.2.1 Foods involved in salmonellosis incidents

Table CZ 6

**Food involved in salmonellosis outbreaks
CZECH REPUBLIC 1992 - 1998**

Food	1992	1993	1994	1995	1996	1997	1998	1992-1998	
	No. of outbreaks							No.	%
Eggs and egg products	36	42	49	29	22	16	18	176	20.0
Sweets	35	44	42	38	22	25	20	191	21.7
Meat and meat products	22	13	15	10	2	11	11	62	7.0
Smoked meat	9	3	9	1	1	2	1	17	1.9
Poultry	2	7	6	22	11	6	2	54	6.1
Milk and milk products	2	6	5	4	5	1	2	23	2.6
Other (unspecified)	10	4	6	3	18	22	21	74	8.4
Unknown	48	37	23	44	45	49	72	270	30.7
Total	167	160	158	154	127	132	149	867	100
Contact	3	4	3	3	1	0	2	13	1.5

Figure CZ 8



3.3 Place where the outbreak occurred

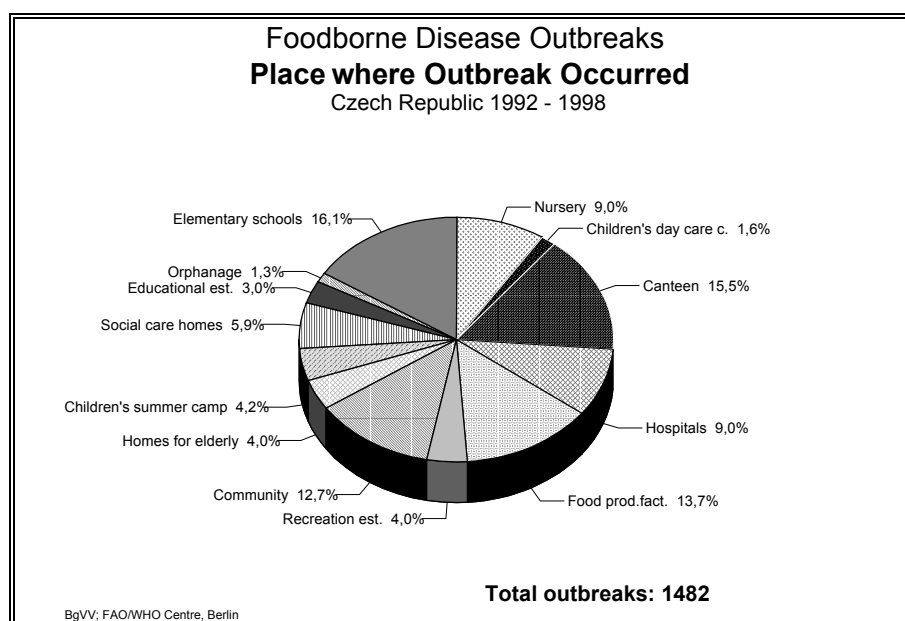
Table CZ 7

**Foodborne disease outbreaks
by causative agent and place where food was contaminated, acquired or eaten
CZECH REPUBLIC, 1992 - 1998**

Place	Agent					Total	%
	Salmonellosis	Shigellosis	Alimentary intoxication	Other infect. enteritis	Other*		
Hospitals	85	14	8	18	9	134	9.0
Children's day care centers	15	1	1	3	3	23	1.6
Nursery	91	10	13	8	12	134	9.0
Elementary schools	164	8	17	18	31	238	16.1
Orphanage	8	7	0	2	2	19	1.3
Educational establishment	27	2	8	1	7	45	3.0
Social care homes	57	15	4	5	6	87	5.9
Children's summer camps	29	8	6	3	16	62	4.2
Homes for elderly people	44	1	1	11	3	60	4.0
Community	131	32	8	4	13	188	12.7
Canteen	198	0	12	11	9	230	15.5
Recreation establishments	18	7	13	4	17	59	4.0
Food producing factory	192	4	5	1	1	203	13.7
Total	1059	109	96	89	129	1482	100.0
%	71.5	7.4	6.5	6.0	8.1	100.0	

*Other infectious enteritis, agent not specified

Figure CZ 9



4. Additional information from the Veterinary food control

Table CZ 8

**Total number of microbiologically investigated food samples and
number of Salmonella-positive samples**
CZECH REPUBLIC 1992 - 1997

Food	1992		1993		1994		1992-1994
	No. of samples	Salmo- nella- positive	No. of samples	Salmo- nella- positive	No. of samples	Salmo- nella- positive	% <i>Salmonella- positive samples</i>
<i>Raw meat</i>							
Beef	12582	11	7684	11	6903	11	0.12
Veal	3647	52	1931	16	704	4	1.15
Pork	30734	285	50242	365	44859	463	0.88
Poultry	11736	411	8247	339	6414	349	4.16
Other	305		191	1	191		0.15
Total	59004	759	68295	729	59071	827	1.24

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Food	1995		1996		1997		%
	No. of samples		No. of samples		No. of samples		<i>Salmonella-</i>
	Total	Salmo- nella- positive	Total	Salmo- nella- positive	Total	Salmo- nella- positive	<i>positive</i> <i>samples</i>
Raw meat							
Beef	4091	1	2382	1	1998	3	0.06
Veal	64	0	43	0	15	0	0.00
Pork	68668	366	54614	394	52316	339	0.63
Poultry	703	133	614	21	47	16	12.46
Other	80	0	20	5	10	0	4.55
Total	73606	470	57673	481	54386	358	0.71

**Total number of microbiologically investigated food samples and
number of Salmonella-positive samples
CZECH REPUBLIC 1992 - 1997**

Food	1992		1993		1994		<u>1992-1994</u>
	No. of samples		No. of samples		No. of samples		%
	Total	Salmo- nella positive	Total	Salmo- nella positive	Total	Salmo- nella positive	<i>Salmonella</i> <i>positive</i> <i>samples</i>
Prepared foods							
Meat	12451	18	23184	119	26922	100	0.38
Meat not preserved							
Milk and milk products	36777	11	35238	9	38224	1	0.02
Poultry and poultry products	10547	387	7928	332	6140	340	4.30
Eggs and egg products	25647	246	13649	81	17781	77	0.71
Other foods	64850	124	97137	236	18758	32	0.22
Total	150272	786	177136	777	107825	550	0.49

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Food	1995		1996		1997		1995-1997
	No. of samples		No. of samples		No. of samples		%
	Total	Salmo- nella positive	Total	Salmo- nella positive	Total	Salmo- nella positive	<i>Salmonella</i> <i>positive</i> <i>samples</i>
<i>Prepared foods</i>							
Meat	7134	58	2602	45	1565	23	1.11
Milk and milk products	38755	2	35510	1	27415	9	0.01
Poultry and poultry products	8654	633	8505	530	6492	241	5.94
Eggs and egg products	20455	150	18321	158	14749	124	0.81
Other foods	75932	143	81370	91	63269	176	0.19
Total	150930	986	146308	825	113490	573	0.58

Table CZ 9

Salmonella serotypes in positive specimens
CZECH REPUBLIC 1992 - 1997

	1992				1993				1994			
	Raw material		Food		Raw material		Food		Raw material		Food	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<i>S. Enteritidis</i>	73	18.71	347	44.89	65	12.59	333	50.6	47	8.0	281	50.9
<i>S. Typhimurium</i>	97	24.87	104	13.45	53	10.27	94	14.28	46	7.8	98	17.78
Other <i>S. spp.</i>	220	56.42	322	41.66	398	77.14	231	35.12	474	84.2	172	31.32
Total	390	100	773	100	516	100	658	100	567	100	551	100

	1995				1996				1997			
	Raw material		Food		Raw material		Food		Raw material		Food	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<i>S. Enteritidis</i>	85	17.49	173	24.57	50	12.35	530	50.43	248	34.44	215	28.74
<i>S. Typhimurium</i>	98	20.16	168	23.86	35	8.64	61	5.80	74	10.28	34	4.55
Other <i>S. spp.</i>	303	62.35	363	51.56	320	79.01	420	39.96	398	55.28	499	66.71
Total	486	100	704	100	405	100	1051	100	720	100	748	100

5. Additional information

Additional information can be found in the web page of the Centre of Epidemiology and Microbiology (National Institute of Public Health) at <http://www.szu.cz/cema/hpcema.htm>.

For further reference on national and international data on foodborne diseases please visit the web page <http://www.who.it/docs/fdsaf/fddata.htm>.