



LITHUANIA (LTU)

Population: 3.7 million

Area: 65 200 km²



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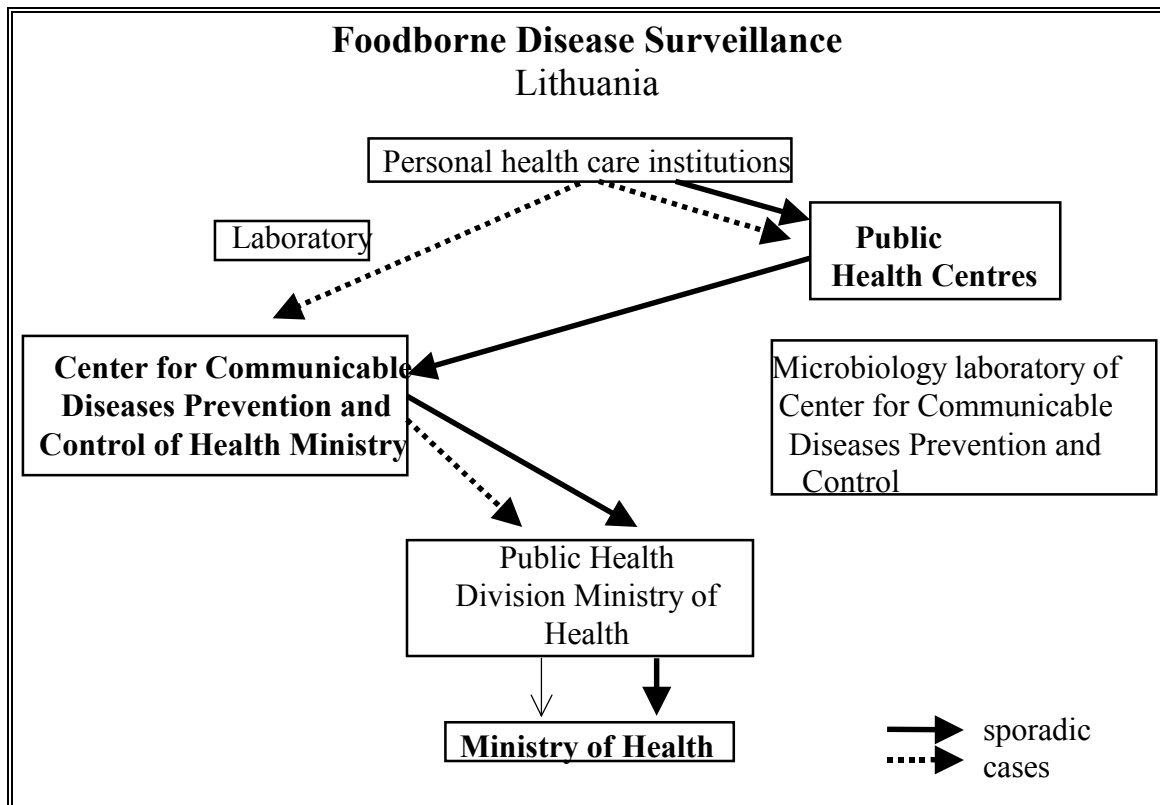
1. General information

Epidemiological surveillance of communicable diseases in Lithuania is carried out by Communicable Diseases Prevention and Control Centre of Health Ministry of Lithuania. In administrative regions this function is performed by 11 Public Health Centres.

Medical doctors must report about every case of diagnosed communicable disease within 12 hours by phone and not later than 72 hours in written form to territorial Public Health Centre has to inform Communicable Diseases prevention and Control Centre about registered cases of communicable diseases in the territory. Communicable Diseases Prevention and Control Centre summarises all information and monthly sends all data to the Ministry of Health and Public Health Centres. Public Health Centres must immediately inform about outbreaks Communicable Diseases Prevention and Control Centre and Centre as soon as possible sends this information to the Ministry of Health.

Microbiological investigation of specimens from suspected persons, sick people are performed and samples of suspected food products are carried out, as a rule, in microbiology laboratories of hospitals and Public Health Centres. Microbiology laboratory of Communicable Diseases prevention and Control Centre works on investigation of epidemiological markers and more detail identification of microbial cultures.

Figure LT 1



2. Statutory notification

Table LT 1

Notified cases of foodborne diseases
LITHUANIA 1993 - 1998

Diagnosis	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>
Para-/Typhoid fever	19	14	14	19	14	6
<i>Incidence rate</i>	0.5	0.4	0.4	0.5	0.4	0.2
Salmonella	1570	1910	2488	1966	1990	2548
<i>Incidence rate</i>	42.4	51.6	67.2	53.1	53.8	68.9
Shigellosis	5007	2378	5295	2605	2025	1771
<i>Incidence rate</i>	135.3	64.3	143.1	70.4	54.7	47.9
Taeniasis	5	10	25	14	10	-
<i>Incidence rate</i>	0.1	0.3	0.7	0.4	0.3	
Hepat. A	3627	5146	5501	3704	2925	1434
<i>Incidence rate</i>	98.0	139.1	148.7	100.1	79.1	38.8
Infect. ent. of unknown origin	4420	4174	5209	4594	5414	5377
<i>Incidence rate</i>	119.5	112.8	140.8	124.2	146.3	145.3
Other vir.ent.	5	7	36	134	215	354
<i>Incidence rate</i>	0.1	0.2	1.0	3.6	5.8	9.6
Giardiasis	754	620	356	546	416	273
<i>Incidence rate</i>	20.4	16.8	9.6	14.8	11.2	7.4
Amoebiasis	1	1	4	19	3	1
<i>Incidence rate</i>	0.0	0.0	0.1	0.5	0.1	0.0
Other bact.foodb. Infect.	2208	2078	1964	1833	1945	1544
<i>Incidence rate</i>	59.7	56.2	53.1	49.5	52.6	41.7
Botulism	34	29	40	19	16	13
<i>Incidence rate</i>	0.9	0.8	1.1	0.5	0.4	0.4

2.1 Salmonellosis

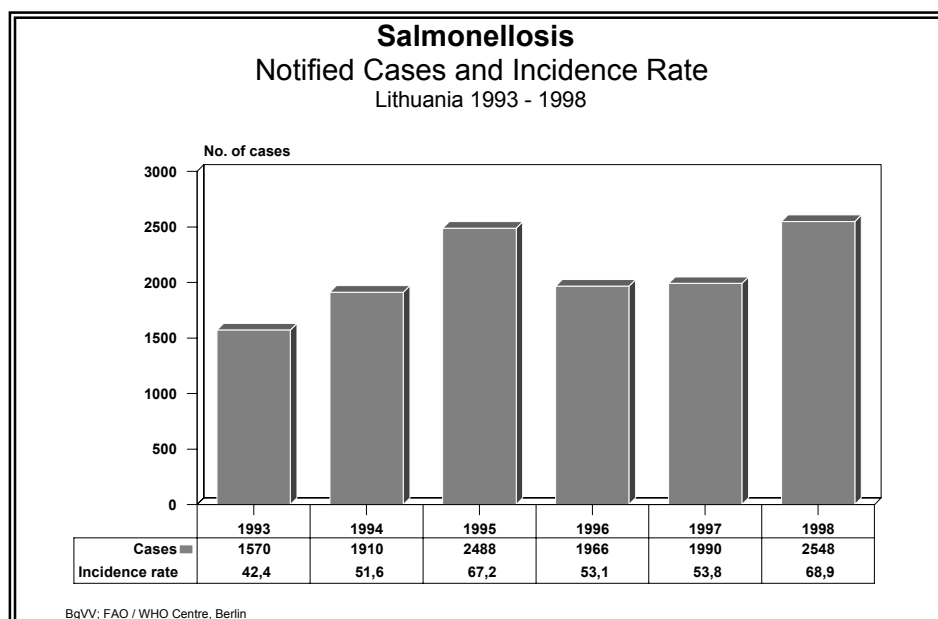
Officially registration of salmonellosis in Lithuania has started since 1959. During the last 10 years it became a significant problem in our country. Morbidity of Salmonellosis has increased 4 times during this period.

491 cases of salmonellosis has been registered in Lithuania in 1987, morbidity index for 100 000 inhabitants was 13.5. In 1998 there were registered 2548 cases in Lithuania and morbidity index for 100 000 inhabitants was 68.8.

2.1.1 Distribution of *Salmonella* serotypes

In 1987 was *S. typhimurium* causing most of the *Salmonella* infections while *S. enteritidis* only played a very minor role. From year to year, the picture changed towards *S. enteritidis* which caused the majority of cases in 1991 - 1998.

Figure LT 2



2.1.2 Foods involved in salmonellosis incidents

Table LT 2

Salmonellosis incidents by incriminated foods
LITHUANIA 1993 - 1998

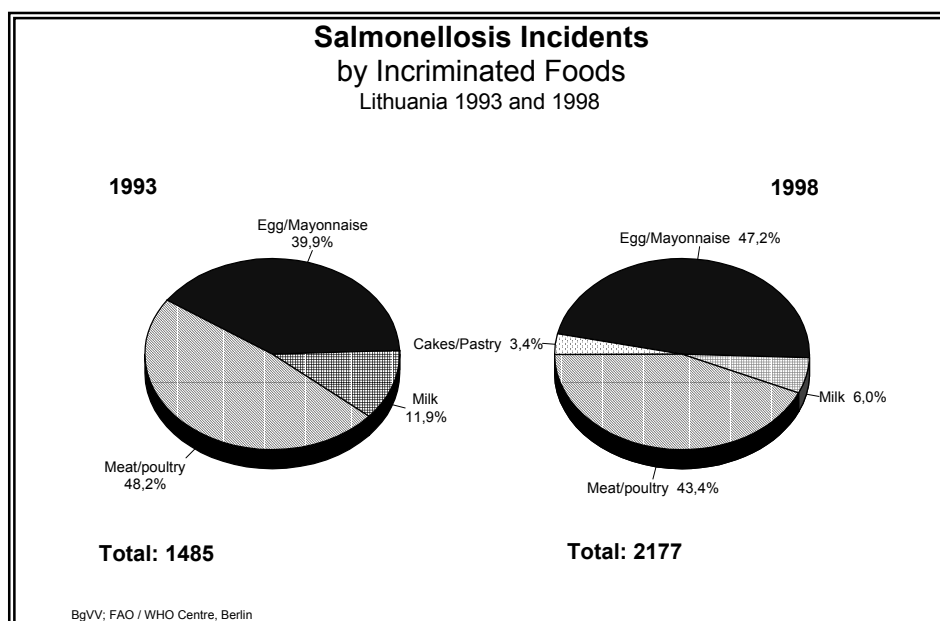
Food	1993	1994	1995	1996	1997	1998	Total	
	No.						No.	%
Egg/								
Mayonnaise	593	809	984	746	670	1028	4830	43.8
Cakes/Pastry/								
Baking premises	-	-	76	15	70	74	235,0	2.1
Meat/poultry	716	693	976	791	898	945	5019	45.5
Milk	176	192	191	127	125	130	941	8.5
TOTAL	1485	1694	2225	1679	1763	2177	11023	100.0

According to the data based on the inquiry of patients since 1991 the main reason of salmonellosis is poultry, eggs and their products.

Every year outbreaks of salmonellosis caused by foods contaminated with salmonella have been registered in Lithuania. During 1993-1998 there were reported about 56 outbreaks in our country. The main reason of these outbreaks was poultry, eggs, confectionery products with raw eggs frosting.

During the last years it was quite often reported about imported to Lithuania raw meat especially poultry contaminated with salmonella. There were reported outbreaks by imported products.

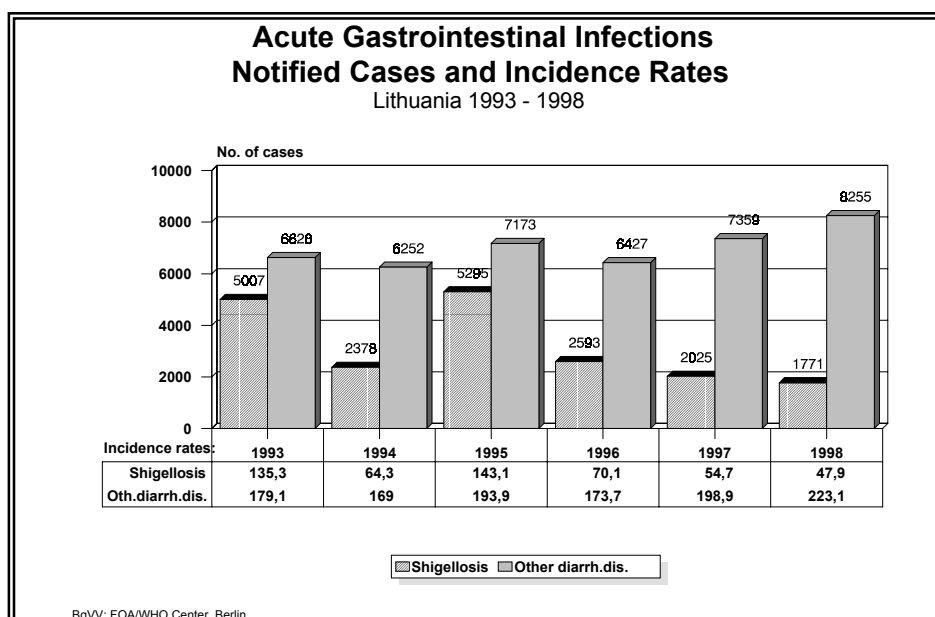
Figure LT 3



2.2 Shigellosis and other gastrointestinal diseases

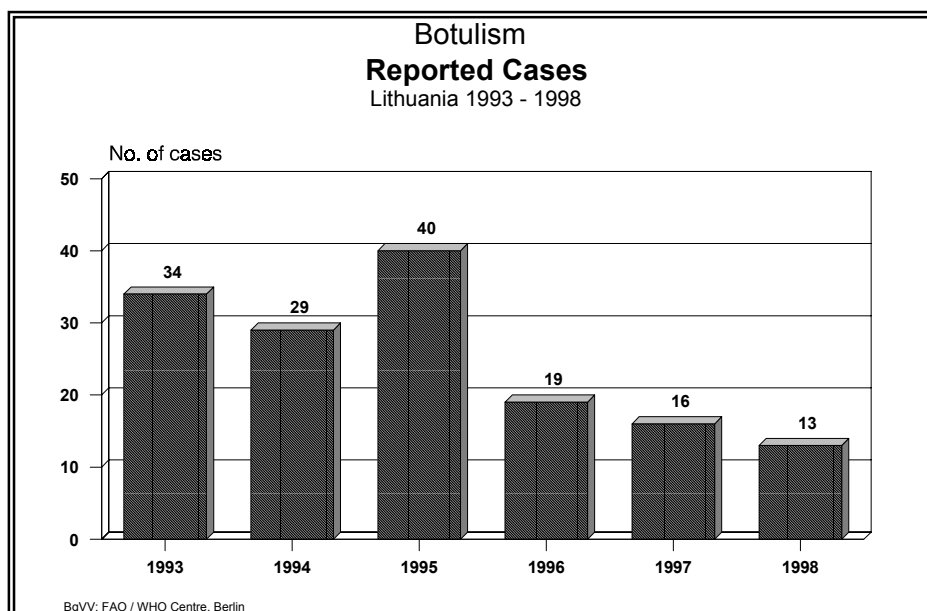
Among the acute diarrheal of human, shigellosis plays a major role (1771 cases in 1998); other acute diarrheal diseases where the agents is not known or specifically mentioned accounted for 8255 cases in 1998.

Figure LT 4



2.3 Botulism

Figure LT 5



3. Epidemiologically investigated incidents

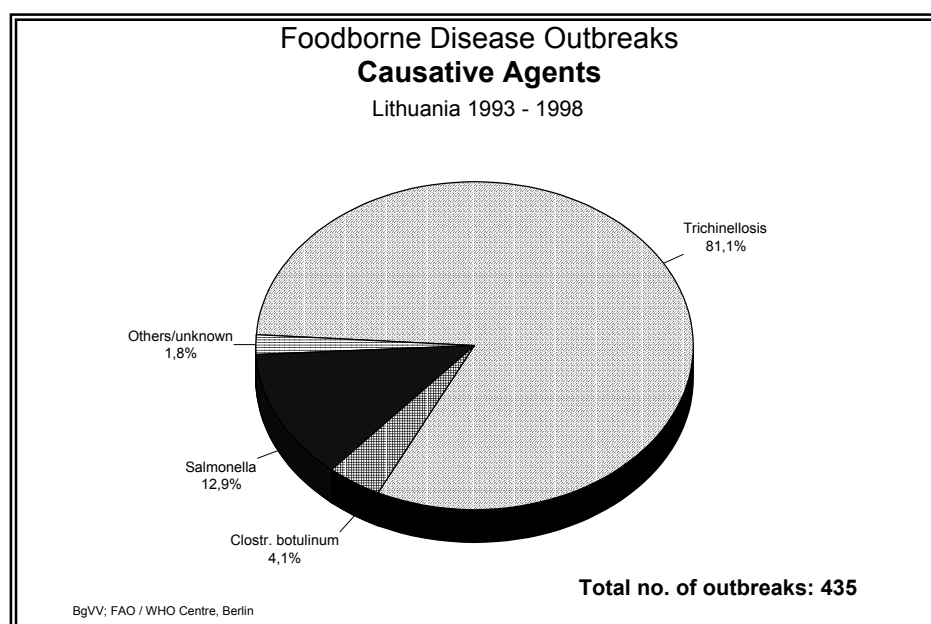
3.1 Causative agents

Table LT 3

Foodborne disease outbreaks by causative agents
LITHUANIA 1993 - 1998

Causative agent/disease	Year						1993-1998	
	1993	1994	1995	1996	1997	1998	No.	%
	No.							
Salmonella	12	6	10	10	7	11	56	12.9
Cl.botulinum	1	10	5	1	1	-	18	4.1
Staph.aureus	-	-	-	1	-	-	1	0.2
Trichinellosis	85	101	72	46	28	21	353	81.1
Other bacteria/ unknown	-	-	-	-	1	6	7	1.6
TOTAL	98	117	87	58	37	38	435	100

Figure LT 6



3.1.1 Distribution of Salmonella serotypes in outbreaks

Table LT 4

Foodborne disease outbreaks Salmonella serotypes
LITHUANIA 1993 - 1998

	1993	1994	1995	1996	1997	1998	Total	
	No.						No.	%
S. Infantis						1	1	1.8
S. Enteritidis	12	6	9	8	7	10	52	92.9
S. Typhimurium	-	-	-	1	-	-	1	1.8
S. Virchow	-	-	-	1	-	-	1	1.8
S. Newport	-	-	1	-	-	-	1	1.8
Total	12	6	10	10	7	11	56	100

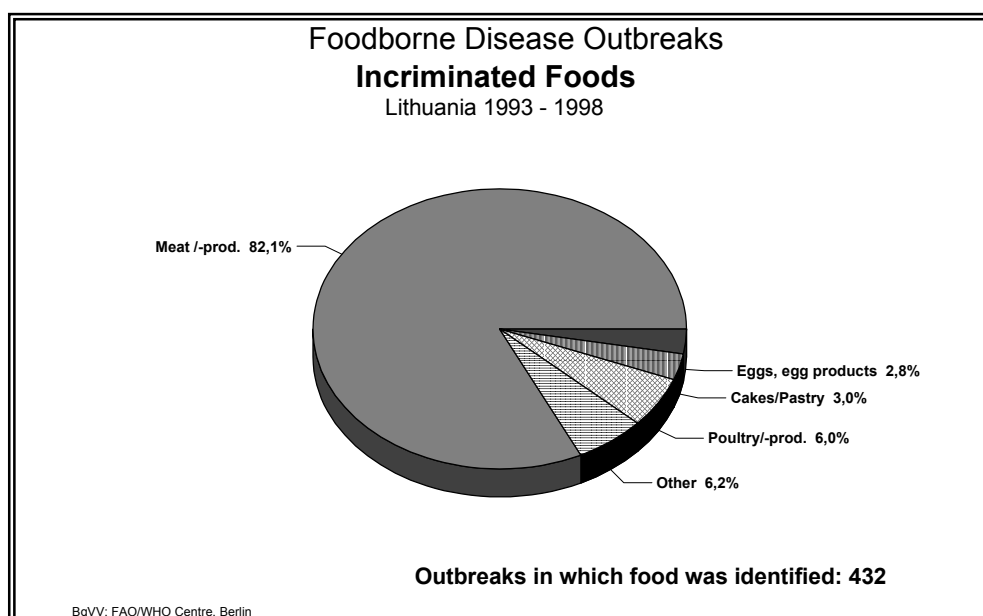
3.2 Incriminated foods

Table LT 5

Foodborne disease outbreaks by incriminated foods
LITHUANIA 1993 - 1998

Food	Year						1993-1998	
	1993	1994	1995	1996	1997	1998	No.	%
	No.							
Milk and milk products	-	-	-	1	-	-	1	0.2
Milk / milk products	-	-	-	1	-	-	1	0.2
Milk / milk products and eggs	-	-	-	-	-	-	-	-
Eggs and egg products	4	2	-	2	-	4	12	2.8
Eggs and egg products	4	2	-	1	-	2	9	2.1
Dishes from eggs	-	-	-	1	-	2	3	0.7
Meat and meat products	92	105	78	51	30	27	383	88.0
Meat/meat products/sausages	85	101	73	48	29	21	357	82.1
Poultry and poultry products	7	4	4	2	1	6	24	5.5
Dishes from poultry and eggs	-	-	1	1	-	-	2	0.4
Cakes, cakes with cream, sweets, ice-cream	1	-	4	2	3	3	13	3.0
Ready-to-serve meals (Croquettes, pancakes, dumplings, mayonnaise, vegetable salads)	-	-	-	1	1	1	3	0.7
Various dishes prepared from 2 and more raw materials	-	-	-	-	-	1	1	0.2
Drinking water	-	-	-	-	-	-	-	-
Others	1	10	5	1	1	1	19	4.4
Not known	-	-	-	-	2	1	3	0.7
TOTAL	98	117	87	58	37	38	435	100

Figure LT 7



WHO Surveillance Programme for Control of Foodborne Infections and Intoxications in Europe
7th Report

Country Reports: *LITHUANIA 1993 – 1998*

3.3 Area where the outbreak occurred

Table LT 6

Foodborne disease outbreaks by place of residence
LITHUANIA 1993 - 1998

Place of residence	Year						1993-98	
	1993	1994	1995	1996	1997	1998	No.	%
	No.							
Urban	63	41	31	17	7	8	167	38.4
Rural	35	76	54	41	30	26	262	60.2
Mixed (urban + rural)	-	-	2	-	-	4	6	1.4
TOTAL	98	117	87	58	37	38	435	100

3.4 Place where food was consumed

Table LT 7

Foodborne disease outbreaks by place where food was eaten
LITHUANIA 1993 - 1998

Place	Year						1993-98	
	1993	1994	1995	1996	1997	1998	No.	%
	No.							
Restaurant, bar, cafe	-	-	1	2	-	3	6	1.4
Canteen	1	-	1	2	2	-	6	1.4
School, kindergarten	-	-	-	-	2	4	6	1.4
Medical care facilities	-	-	-	-	1	-	1	0.2
Private home	97	117	84	51	32	30	411	94.5
Vacation centre	-	-	-	1	-	-	1	0.2
Other	-	-	-	2	-	1	3	0.7
Various places (2 and more)	-	-	1	-	-	-	1	0.2
TOTAL	98	117	87	58	37	38	435	100

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3.4 Contributing factors

Table LT 8

Foodborne disease outbreaks Contributing factors
LITHUANIA 1993- 1998

Factor	Year						<i>Total</i>	
	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>	<i>1998</i>	<i>1993-1998</i>	
	No.						No.	%
Food prepared too far in advance	-	-	1	-	1	2	4	1.0
Inadequate hot holding	4	2	-	1	1	2	10	2.3
Improper storage	2	-	4	2	-	-	8	1.8
Inadequate refrigeration	-	-	-	-	1	-	1	0.2
Inadequate cooking/ re-heating	7	14	9	8	4	8	50	11.5
Infected person	-	-	1	1	2	2	6	1.4
Other factors	85	101	72	46	28	24	356	81.8
TOTAL OUTBREAKS	98	117	97	58	37	38	435	100

* In some outbreaks there was more than one contributing factor