



POLAND (POL)

Population: 38.65 million (1997)

Area: 312 677 km²



The designations and the presentation of material on this map of the Member States of the WHO European Region (as at 31 July 1997) do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines represent approximate border lines for which there may not yet be full agreement.

1. General information

The surveillance of infectious diseases including foodborne infections and intoxications started in 1918 when the National Epidemiological Centre was established to conduct epidemiological and laboratory investigations of outbreaks. In 1923, the name of the Centre was changed into National Institute of Hygiene, where the Department of Food Hygiene and the School of Hygiene were organized. In the course of time, 13 regional branches of the Institute were established with laboratories for microbiological examination of patients, food and water. Information and data on foodborne outbreaks were collected and published in the Epidemiological Chronicle.

In 1952 a new system was established: Sanitary-epidemiological stations became involved in the control and prevention of infectious diseases. The foodborne infections and intoxications surveillance programme is coordinated at the Epidemiological Department of the National Institute of Hygiene, which acts as the national surveillance centre for all statutorily notifiable infectious diseases.

Reports of outbreaks (household and general) are received on a standardized outbreak national investigation form modified according to FAO/WHO Berlin Collaborating Centre guidelines on the WHO Surveillance Programme for Control of Foodborne Infections and Intoxications in Europe.

In 1991 the Chief Medical Inspectorate was reorganized as Department of Public Health, Ministry of Health and Social Welfare. There are 49 Departmental Sanitary-Epidemiological Stations. Each one is subdivided into 3 departments: Epidemiology, Communal Hygiene and

Food Hygiene. All three departments are involved in prevention and control of foodborne and waterborne outbreaks and have laboratory facilities to examine specimens obtained from patients, convalescents, carriers, contacts and food handlers as well as specimens of food and water. Some of the Territorial Sanitary-Epidemiological Stations have also laboratory facilities (160/330).

The National Institute of Hygiene operates as research, training and supervising centre for the work of the sanitary stations and for collection and analysis of epidemiological data and bacterial strains on the national level. Several reference laboratories are able to diagnose and type strains obtained from hospital and other laboratories. For unusual strains, confirmation of diagnosis is obligatory.

Epidemiological information from all 49 Departmental Stations is collected centrally and published bi-weekly in the form of a "Communicable Diseases Report" available to health authorities.

All infectious diseases are notifiable in Poland under the Public Health Act (1928). Laboratory confirmation is needed for registration of cases of some diseases: cholera, enteric fever, dysentery, salmonellosis, etc.

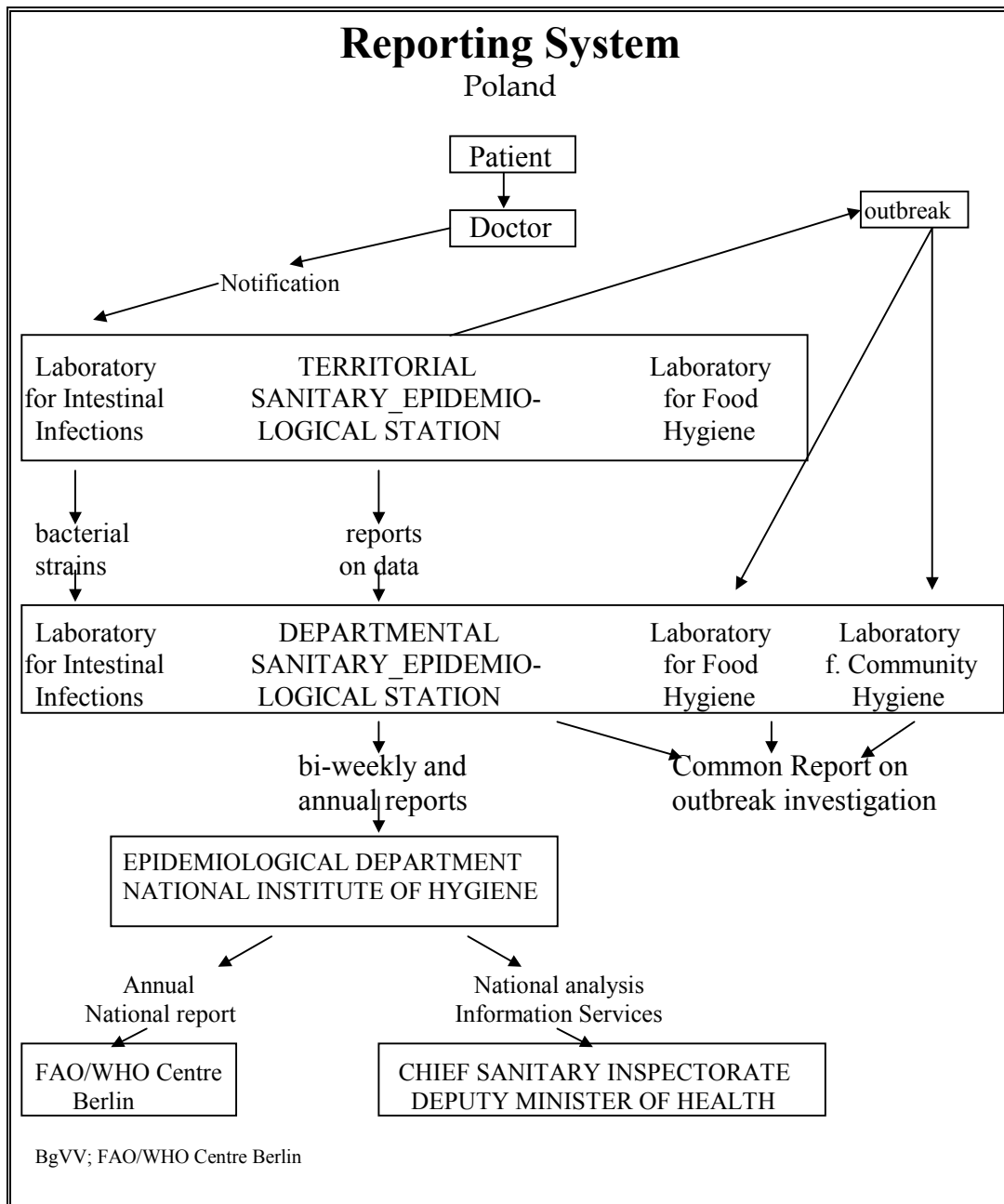
The case of food poisoning should be registered when illness is acute and consumption of food is suspected or known to be the cause, irrespective of whether an organism is isolated from a specimen. If isolated, the type of organism should be stated.

Outbreaks of foodborne infections and intoxications are always registered and epidemiologically investigated if there are four or more people involved. Even a single case of botulism is epidemiologically investigated and registered as an outbreak.

The laboratory methods are standardized. All investigations should be performed according to the methods published by the National Institute of Hygiene.

Diagnostic sera for *Shigella*, *Salmonella* and *E. coli* EPEC are produced by a state-owned enterprise and controlled by the National Reference Center for *Shigella* and *Escherichia* at the National Institute of Hygiene, Warsaw and *Salmonella* only at the Institute for Marine Medicine in Gdynia up to 1993.

Figure PO 1



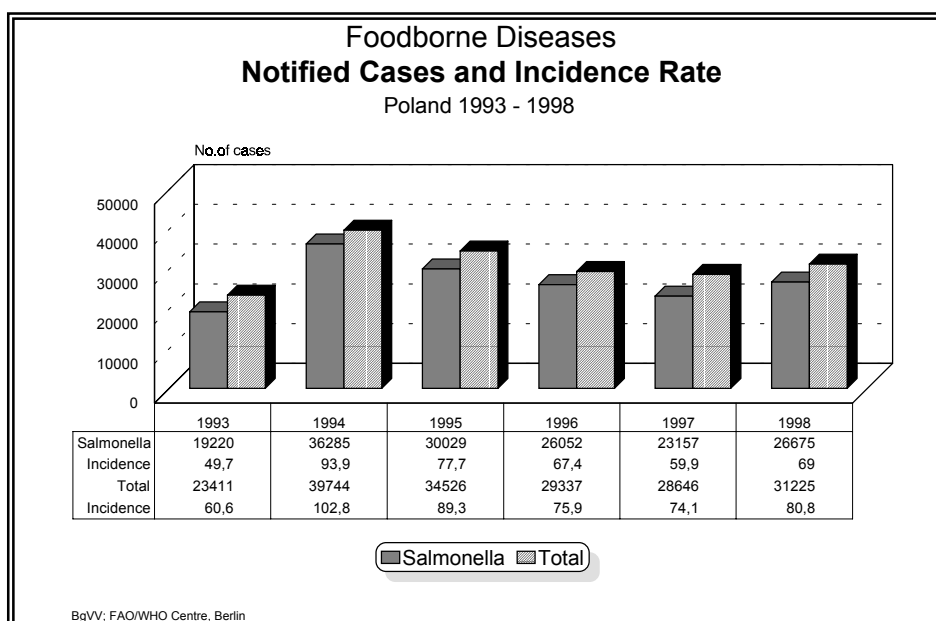
2. Statutory notification

Table PO 1

Notified cases and incidence rate by causative agents of bacterial and chemical foodborne infections and intoxications including mushroom poisonings

| | Year | | | | | |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | <i>1993</i> | <i>1994</i> | <i>1995</i> | <i>1996</i> | <i>1997</i> | <i>1998</i> |
| No. of cases | 23411 | 39744 | 34526 | 29337 | 28646 | 31225 |
| Incidence rate | 60.6 | 102.8 | 89.3 | 75.9 | 74.1 | 80.8 |

Figure PO 2



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

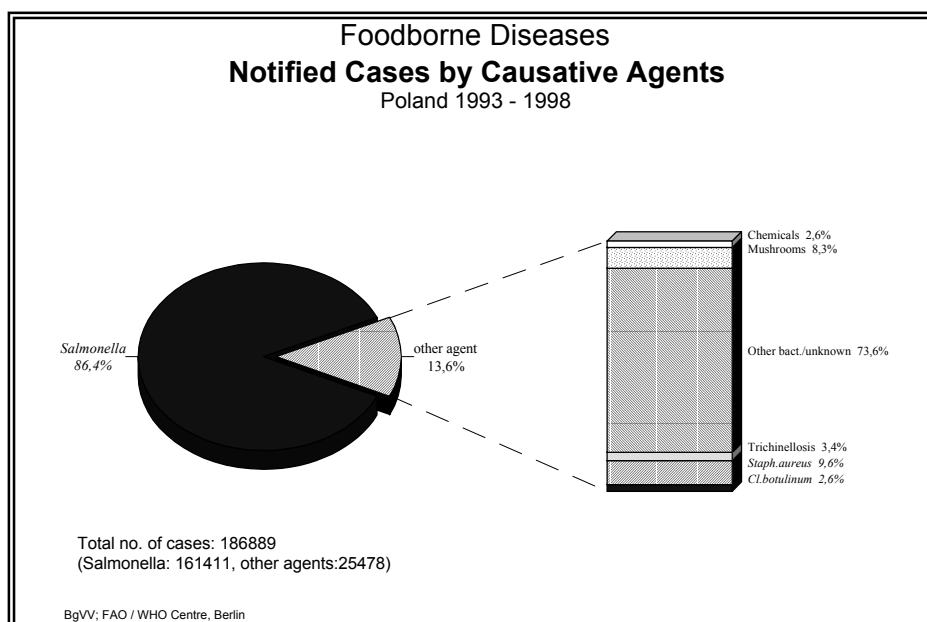
Country Reports: *POLAND 1993 – 1998*

Table PO 2

Notified cases by causative agents
POLAND 1993 - 1998

| Causative agent | Year | | | | | |
|-------------------------|-------|-------|-------|-------|-------|-------|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 |
| Salmonella | 19220 | 36278 | 30029 | 26052 | 23157 | 26675 |
| <i>Incidence rate</i> | 49.7 | 93.9 | 77.7 | 67.4 | 59.9 | 69.0 |
| <i>Cl.botulinum</i> | 143 | 116 | 118 | 107 | 81 | 93 |
| <i>Incidence rate</i> | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 |
| <i>Staph. Aureus</i> | 374 | 268 | 760 | 213 | 450 | 375 |
| <i>Incidence rate</i> | 1.0 | 0.7 | 2.0 | 0.6 | 1.2 | 1.0 |
| Trichinellosis | 549 | 131 | 90 | 41 | 20 | 33 |
| <i>Incidence rate</i> | 1.4 | 0.3 | 0.2 | 0.1 | 0.1 | 0.1 |
| Mushrooms | 503 | 666 | 354 | 212 | 173 | 209 |
| <i>Incidence rate</i> | 1.3 | 1.7 | 0.9 | 0.5 | 0.4 | 0.5 |
| Chemicals | 139 | 119 | 185 | 215 | - | - |
| <i>Incidence rate</i> | 0.4 | 0.3 | 0.5 | 0.6 | - | - |
| Other bacteria/ unknown | 2483 | 2166 | 2990 | 2497 | 4765 | 3840 |
| <i>Incidence rate</i> | 6.4 | 5.6 | 7.7 | 6.5 | 12.3 | 9.9 |
| TOTAL | 23411 | 39744 | 34526 | 29337 | 28646 | 31225 |

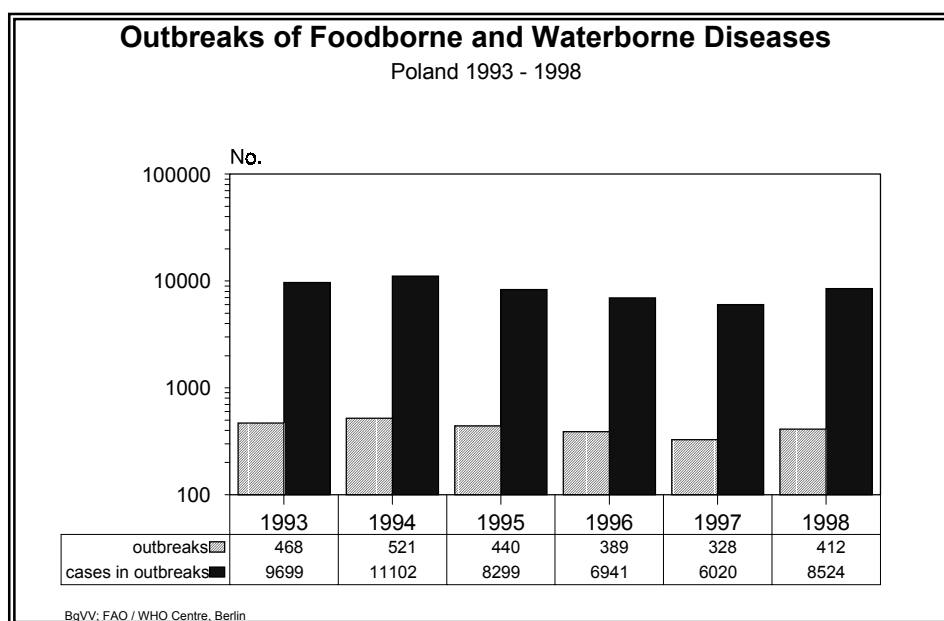
Figure PO 3



3. Epidemiologically investigated outbreaks

As mentioned above outbreaks of foodborne infections and intoxications are always registered and epidemiologically investigated if there are four or more people involved. Even a single case of botulism is epidemiologically investigated and registered as an outbreak.

Figure PO 4



3.1 Causative Agents

Table PO 3

Foodborne disease outbreaks and cases in outbreaks - Causative agents
POLAND 1993 -1998

| Agent | 1993-1998 | | |
|---------------------|-------------|--------------|--------------|
| | outbreaks | % | cases |
| <i>Salmonella</i> | 2162 | 84.5 | 41129 |
| <i>Botulism</i> | 10 | 0.4 | 46 |
| <i>E.coli</i> | 54 | 2.1 | 1174 |
| <i>Shigella</i> | 54 | 2.1 | 1875 |
| <i>Staph.aureus</i> | 73 | 2.9 | 2088 |
| <i>Trichinella</i> | 32 | 1.3 | 768 |
| Chemicals | 2 | 0.1 | 14 |
| Viruses | 1 | 0.0 | 26 |
| Others | 25 | 1.0 | 259 |
| Unknown | 145 | 5.7 | 3067 |
| Total | 2558 | 100.0 | 50446 |

Figure PO 5

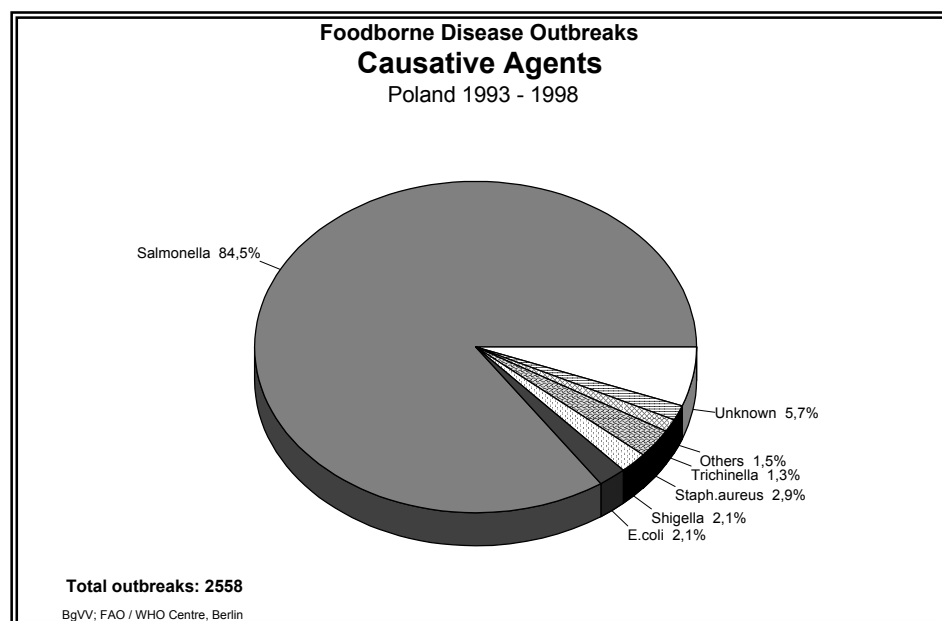
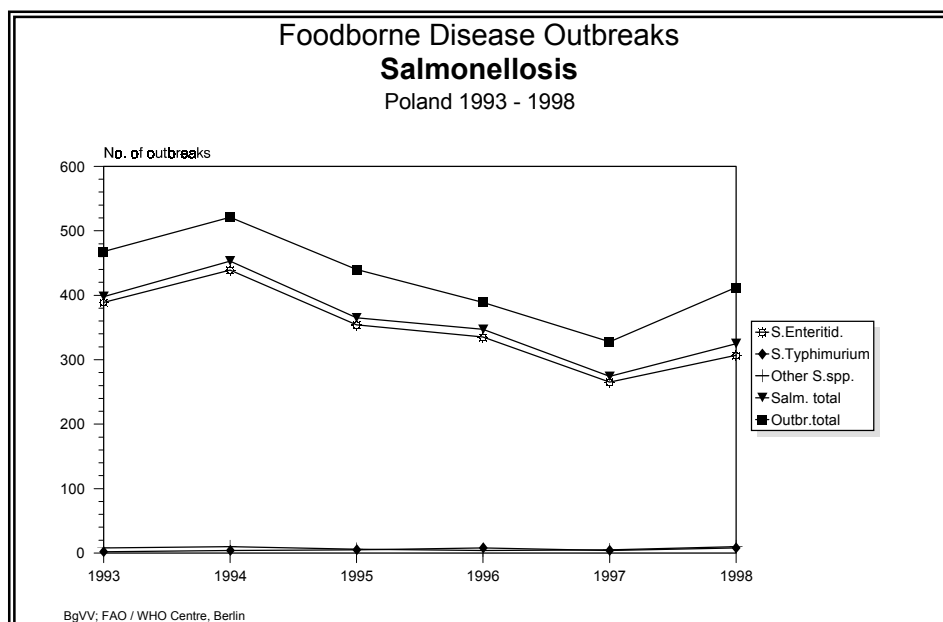


Table PO 4

Foodborne disease outbreaks - Salmonella serotypes
POLAND 1993 - 1998

| | 1993 | | 1994 | | 1995 | | 1996 | | 1997 | | 1998 | |
|-----------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| <i>S. Enteritidis</i> | 389 | 97.7 | 439 | 96.9 | 354 | 97.0 | 335 | 96.5 | 265 | 96.7 | 307 | 94.5 |
| <i>S. Typhimurium</i> | 2 | 0.5 | 4 | 0.9 | 5 | 1.4 | 8 | 2.3 | 4 | 1.5 | 8 | 2.5 |
| <i>S. Blockley</i> | 1 | 0.3 | - | - | - | - | - | - | - | - | - | - |
| <i>S. Virchow</i> | 1 | 0.3 | 2 | 0.4 | - | - | 2 | 0.6 | 1 | 0.4 | 5 | 1.5 |
| <i>S. Manhattan</i> | 1 | 0.3 | - | - | - | - | - | - | - | - | - | - |
| <i>S. Agona</i> | - | - | 1 | 0.2 | - | - | - | - | - | - | - | - |
| <i>S. Infantis</i> | 1 | 0.3 | - | - | - | - | - | - | - | - | - | - |
| <i>S. Hadar</i> | - | - | 1 | 0.2 | 2 | 0.5 | - | - | 1 | 0.4 | 1 | 0.3 |
| <i>S. Heidelberg</i> | - | - | 1 | 0.2 | - | - | - | - | - | - | 1 | 0.3 |
| <i>S. Thompson</i> | - | - | 1 | 0.2 | - | - | - | - | - | - | - | - |
| <i>S. Blegdam</i> | - | - | - | - | - | - | - | - | 1 | 0.4 | - | - |
| <i>S. Branderup</i> | - | - | - | - | - | - | - | - | 1 | 0.4 | - | - |
| <i>S. Cholerae</i> | - | - | - | - | - | - | 1 | 0.3 | - | - | - | - |
| <i>S. Newport</i> | - | - | - | - | - | - | 1 | 0.3 | - | - | - | - |
| <i>S. Indiana</i> | - | - | - | - | - | - | - | - | 1 | 0.4 | - | - |
| <i>S. Group D</i> | - | - | - | - | - | - | - | - | - | - | 1 | 0.3 |
| <i>S. Kottbus</i> | - | - | - | - | - | - | - | - | - | - | 1 | 0.3 |
| <i>S. Hadar+</i> | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>S. Tsiongwé</i> | - | - | - | - | - | - | - | - | - | - | 1 | 0.3 |
| Other | 3 | 0.8 | 4 | 0.9 | 4 | 1.1 | - | - | - | - | - | - |
| Not known | 1 | 0.3 | - | - | - | - | - | - | - | - | - | - |
| TOTAL | 398 | 100 | 453 | 100 | 365 | 100 | 347 | 100 | 274 | 100 | 325 | 100 |

Figure PO 6



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

Country Reports: *POLAND 1993 – 1998*

3.2 Incriminated food

Table PO 5

Foodborne disease outbreaks by incriminated foods
POLAND 1993 - 1998

| Food | Year | | | | | | 1993-98 | |
|---|------------------|------------|------------|------------|------------|------------|-------------|--------------|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | No. | % |
| | No. of outbreaks | | | | | | | |
| Milk and milk products | 12 | 20 | 22 | 10 | 8 | 11 | 83 | 3.2 |
| Milk / milk products | 4 | 15 | 12 | 5 | 1 | 5 | 42 | 1.6 |
| Milk / milk products and eggs | 8 | 5 | 10 | 5 | 7 | 6 | 41 | 1.6 |
| Eggs and egg products | 17 | 23 | 14 | 18 | 11 | 19 | 102 | 4.0 |
| Eggs and egg products | 2 | 3 | 6 | 10 | 7 | 4 | 32 | 1.3 |
| Dishes from eggs | 15 | 20 | 8 | 8 | 4 | 15 | 70 | 2.7 |
| Meat and meat products | 105 | 118 | 103 | 81 | 74 | 76 | 557 | 21.8 |
| Meat/meat products/sausages | 17 | 18 | 28 | 15 | 10 | 18 | 106 | 4.1 |
| Raw minced meat and eggs | 27 | 29 | 22 | 15 | 19 | 9 | 121 | 4.7 |
| Meat products and eggs | 48 | 51 | 33 | 32 | 27 | 27 | 218 | 8.5 |
| Meat and vegetable dishes | 0 | 0 | 1 | 1 | 1 | 1 | 4 | 0.2 |
| Poultry and poultry products | 1 | 4 | 7 | 4 | 10 | 7 | 33 | 1.3 |
| Dishes from poultry and eggs | 9 | 13 | 11 | 12 | 7 | 13 | 65 | 2.5 |
| Venison and venison products | 3 | 3 | 1 | 2 | 0 | 1 | 10 | 0.4 |
| Fish | 0 | 1 | 2 | 2 | 0 | 2 | 7 | 0.3 |
| Soup | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 0.1 |
| Cakes, cakes with cream, sweets, ice-cream | 197 | 204 | 169 | 158 | 133 | 155 | 1016 | 39.7 |
| Ready-to-serve meals (Croquettes, pancakes, dumplings, mayonnaise, vegetable salads) | 20 | 31 | 19 | 24 | 27 | 49 | 170 | 6.6 |
| Various dishes prepared from 2 and more raw materials | 88 | 92 | 70 | 60 | 33 | 37 | 380 | 14.9 |
| Drinking water | 4 | 0 | 8 | 4 | 2 | 2 | 20 | 0.8 |
| Others | 1 | 1 | 0 | 0 | 1 | 4 | 7 | 0.3 |
| Not known | 19 | 22 | 27 | 31 | 36 | 51 | 186 | 7.3 |
| Mushrooms | 4 | 9 | 6 | 1 | 3 | 4 | 27 | 1.1 |
| TOTAL | 468 | 521 | 440 | 389 | 328 | 412 | 2558 | 100.0 |

Figure PO 7

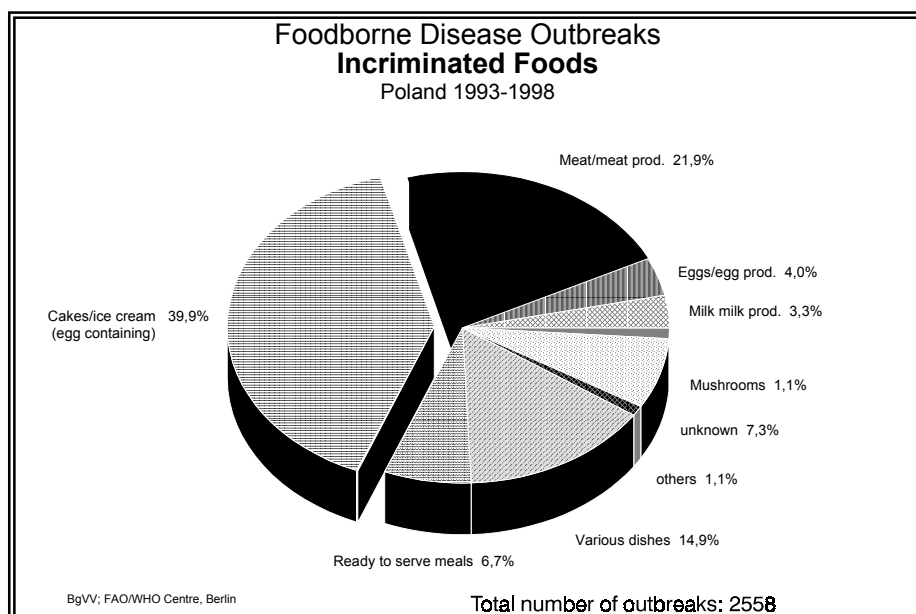


Table PO 6

Foodborne disease outbreaks by causative agent and food
POLAND 1993 - 1998

| | Milk/-prod. | | Eggs/-prod. | | Mayonnaise | | Meat/-prod. | | Meat and eggs | | Cakes, creams, ice-cream | | Composed food | |
|---------------------|-------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|---------------|-------------|--------------------------|-------------|---------------|-------------|
| | o* | c** | o* | c** | o* | c** | o* | c** | o* | c** | o* | c** | o* | c** |
| <i>Salmonella</i> | 6 | 57 | 140 | 2189 | 162 | 3032 | 47 | 982 | 332 | 5566 | 1006 | 17899 | 300 | 7299 |
| <i>Botulism</i> | - | - | - | - | - | - | 8 | 35 | - | - | - | - | - | - |
| <i>E.coli</i> | 6 | 97 | 1 | 11 | 1 | 25 | 6 | 134 | 2 | 31 | 2 | 22 | 21 | 443 |
| <i>Shigella</i> | 12 | 891 | - | - | - | - | 1 | 23 | - | - | 1 | 7 | - | - |
| <i>Staph.aureus</i> | 13 | 243 | - | - | 2 | 31 | 14 | 442 | 3 | 118 | 1 | 11 | 35 | 1133 |
| <i>Trichinella</i> | - | - | - | - | - | - | 15 | 590 | 7 | 82 | - | - | - | - |
| Chemicals | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Viruses | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Others | - | - | - | - | - | - | - | - | - | - | - | - | 6 | 166 |
| Unknown | 6 | 104 | 2 | 11 | 4 | 33 | 7 | 142 | 3 | 27 | 6 | 70 | 22 | 832 |
| Total | 43 | 1392 | 143 | 2211 | 169 | 3121 | 98 | 2348 | 347 | 5824 | 1016 | 1800 | 384 | 9873 |
| % | 1.7 | | 5.6 | | 6.6 | | 3.8 | | 13.6 | | 39.7 | | 15.0 | |

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

Country Reports: *POLAND 1993 – 1998*

Table PO 6 (continued)

| | Fish/-prod. | | Poultry/-prod. | | Venison/-prod. | | Vegetables/mushrooms | | Drinking water | | Others | | Unknown | |
|---------------------|-------------|------------|----------------|-------------|----------------|-----------|----------------------|------------|----------------|------------|------------|------------|------------|-------------|
| | o* | c** | o* | c** | o* | c** | o* | c** | o* | c** | o* | c** | o* | c** |
| <i>Salmonella</i> | 6 | 153 | 91 | 2124 | - | - | 2 | 103 | - | - | 1 | 28 | 69 | 1697 |
| <i>Botulism</i> | 1 | 4 | - | - | - | - | 1 | 7 | - | - | - | - | - | - |
| <i>E.coli</i> | - | - | - | - | - | - | 1 | 28 | 10 | 314 | 1 | 11 | 3 | 58 |
| <i>Shigella</i> | - | - | 1 | 18 | - | - | 1 | 7 | 5 | 129 | 1 | 26 | 32 | 774 |
| <i>Staph.aureus</i> | - | - | 3 | 60 | - | - | - | - | - | - | - | - | 2 | 50 |
| <i>Trichinella</i> | - | - | - | - | 10 | 96 | - | - | - | - | - | - | - | - |
| Chemicals | - | - | - | - | - | - | - | - | - | - | 2 | 14 | - | - |
| Viruses | - | - | - | - | - | - | - | - | - | - | - | - | 1 | 26 |
| Others | - | - | - | - | - | - | 19 | 93 | - | - | - | - | - | - |
| Unknown | - | - | 3 | 76 | - | - | 3 | 19 | 5 | 83 | 5 | 112 | 79 | 1558 |
| Total | 7 | 157 | 98 | 2278 | 10 | 96 | 27 | 257 | 20 | 526 | 10 | 191 | 186 | 4163 |
| % | 0.3 | | 3.8 | | 0.4 | | 1.1 | | 0.8 | | 0.4 | | 7.3 | |

* outbreaks

** cases

3.3 Area where outbreak occurred

Table PO 7

Foodborne disease outbreaks by place of residence
POLAND 1993 - 1998

| Place of residence | Year | | | | | | 1993-98 | |
|-----------------------|------------------|------------|----------|------------|------------|------------|----------------|--------------|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | No.* | %* |
| | No. of outbreaks | | | | | | | |
| Urban | 209 | 230 | - | 144 | 134 | 158 | 875 | 41.3 |
| Rural | 168 | 171 | - | 134 | 122 | 156 | 751 | 35.5 |
| Mixed (urban + rural) | 91 | 120 | - | 111 | 72 | 98 | 492 | 23.2 |
| TOTAL | 468 | 521 | - | 389 | 328 | 412 | 2118 | 100.0 |

* excl. 1995

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

Country Reports: *POLAND 1993 – 1998*

3.4 Place where food was prepared, acquired, eaten or contaminated

3.4.1 Place where food was prepared or acquired

Table PO 8

Foodborne disease outbreaks by place where food was prepared or acquired
POLAND 1993 - 1998

| Place | Year | | | | | | 1993-98 | |
|--|------------------|------------|------------|------------|------------|------------|-------------|--------------|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | No. | % |
| | No. of outbreaks | | | | | | | |
| Restaurant, bar, cafe | 39 | 76 | 47 | 40 | 35 | 48 | 285 | <i>11.1</i> |
| Canteen | 8 | 4 | 5 | 4 | 3 | 10 | 34 | <i>1.3</i> |
| School, kindergarten | 42 | 26 | 30 | 19 | 19 | 37 | 173 | <i>6.8</i> |
| Medical care facilities (Hospital, nursery) | 15 | 20 | 21 | 16 | 25 | 23 | 120 | <i>4.7</i> |
| Private home | 298 | 321 | 268 | 253 | 199 | 234 | 1573 | <i>61.5</i> |
| Vacation centre | 6 | 8 | 5 | 8 | 6 | 9 | 42 | <i>1.6</i> |
| Other | 17 | 17 | 20 | 18 | 12 | 28 | 112 | <i>4.4</i> |
| Various places (2 and more) | 43 | 49 | 44 | 31 | 29 | 23 | 219 | <i>8.6</i> |
| TOTAL | 468 | 521 | 440 | 389 | 328 | 412 | 2558 | <i>100.0</i> |

3.4.2 Place where food was consumed

Table PO 9

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

| Place | Year | | | | | | 1993-98 | |
|--|------------------|------------|------------|------------|------------|------------|-------------|--------------|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | No. | % |
| | No. of outbreaks | | | | | | | |
| Restaurant, bar, cafe | 12 | 23 | 16 | 13 | 20 | 21 | 105 | <i>4.1</i> |
| Canteen | 8 | 4 | 6 | 5 | 3 | 11 | 37 | <i>1.4</i> |
| School, kindergarten | 50 | 40 | 34 | 26 | 23 | 41 | 214 | <i>8.4</i> |
| Medical care facilities (Hospital, nursery) | 12 | 28 | 22 | 15 | 21 | 26 | 124 | <i>4.8</i> |
| Private home | 275 | 304 | 258 | 240 | 185 | 210 | 1472 | <i>57.5</i> |
| Vacation centre | 8 | 8 | 6 | 14 | 7 | 8 | 51 | <i>2.0</i> |
| Other | 10 | 4 | 7 | 5 | 29 | 39 | 94 | <i>3.7</i> |
| Various places (2 and more) | 93 | 110 | 91 | 71 | 40 | 56 | 461 | <i>18.0</i> |
| TOTAL | 468 | 521 | 440 | 389 | 328 | 412 | 2558 | <i>100.0</i> |

Figure PO 8

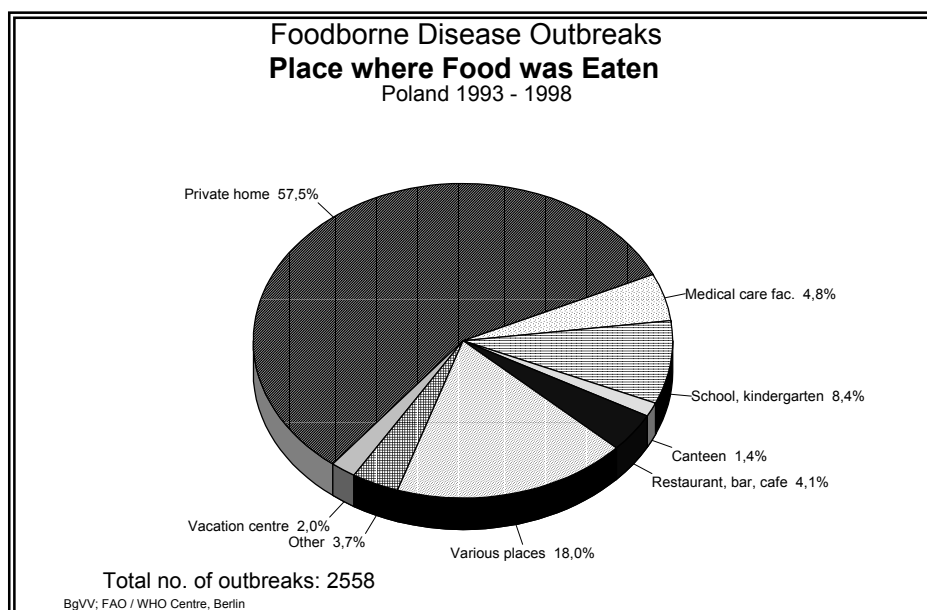


Table PO 10

**Foodborne disease outbreaks by place where food was eaten and causative agent
POLAND 1993 - 1998**

| | Private home | Vacation center | Canteen | School, kindergarten | Sanatorium | Hospital/social care | Orphanage | Restaurant, hotel | Cafe | Excursion | Others | Various places | Difficult to state |
|-------------------|------------------|-----------------|------------|----------------------|------------|----------------------|------------|-------------------|------------|------------|------------|----------------|--------------------|
| | No. of outbreaks | | | | | | | | | | | | |
| <i>Salmonella</i> | 1375 | 15 | 24 | 88 | 14 | 43 | 13 | 56 | 14 | - | 79 | 440 | 1 |
| <i>Botulism</i> | 10 | - | - | - | - | - | - | - | - | - | - | - | - |
| <i>E.coli</i> | 5 | 4 | - | 23 | 5 | 7 | 3 | - | 1 | 4 | 1 | 1 | - |
| <i>Shigella</i> | 5 | - | 11 | 9 | 1 | 10 | 9 | - | - | 1 | - | 8 | - |
| Staph.aureus | 7 | 11 | 1 | 35 | 5 | 7 | 3 | 1 | 2 | - | - | 1 | - |
| Trichinella | 25 | - | - | - | - | - | - | - | - | - | - | 7 | - |
| Virus | - | - | - | - | - | - | - | 1 | - | - | - | - | - |
| Chemicals | 1 | - | - | 1 | - | - | - | - | - | - | - | - | - |
| Others | 16 | 1 | - | 4 | - | 1 | - | - | - | 1 | 2 | - | - |
| Unknown | 28 | 11 | 12 | 43 | 9 | 10 | 5 | 9 | - | 9 | 4 | 5 | - |
| Total | 1466 | 42 | 48 | 203 | 34 | 78 | 33 | 66 | 17 | 15 | 86 | 462 | 1 |
| % | 57.3 | 1.6 | 1.9 | 7.9 | 1.3 | 3.0 | 1.3 | 2.6 | 0.7 | 0.6 | 3.4 | 18.1 | 0.0 |

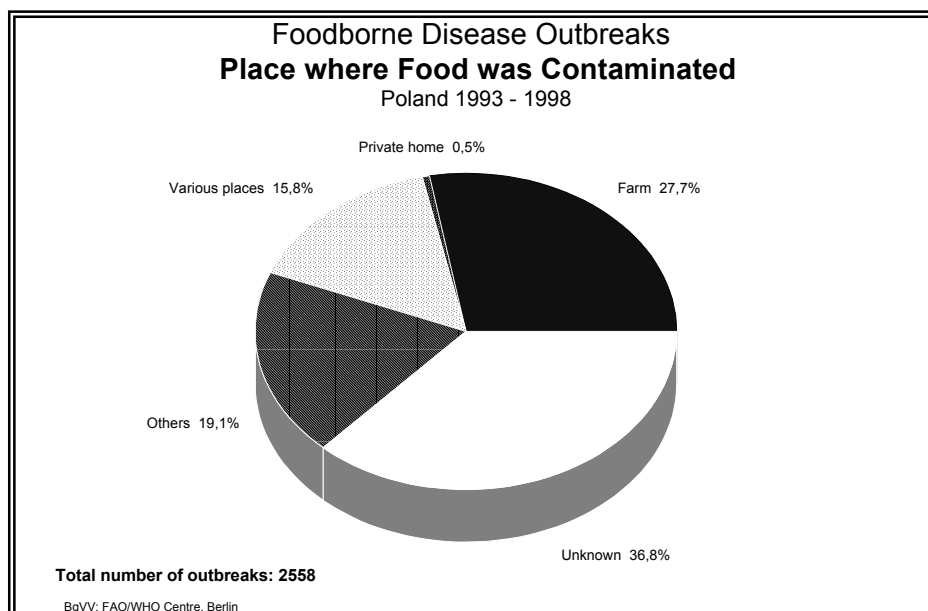
3.4.3 Place where food was contaminated

Table PO 11

Foodborne disease outbreaks by place where food was contaminated
POLAND 1993 - 1998

| Place | Year | | | | | | 1993-98 | |
|--|-------------------------|------------|------------|------------|------------|------------|-------------|--------------|
| | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | No. | % |
| | No. of outbreaks | | | | | | | |
| Private farm | 136 | 122 | 129 | 100 | 95 | 126 | 708 | 27.7 |
| Socialized farm | 7 | 10 | 3 | 7 | 4 | 4 | 35 | 1.4 |
| Water from stream, well or water pipe | 6 | 15 | 6 | 4 | 4 | 1 | 36 | 1.4 |
| School, kindergarten | 1 | - | - | 1 | 2 | 4 | 8 | 0.3 |
| Medical care facilities (Hospital, nursery) | 1 | - | - | 1 | 1 | 3 | 6 | 0.2 |
| Private home | 2 | 1 | 3 | 1 | 3 | 4 | 14 | 0.5 |
| Other | 74 | 66 | 55 | 46 | 67 | 96 | 404 | 15.8 |
| Various places (2 and more) | 95 | 113 | 65 | 40 | 43 | 49 | 405 | 15.8 |
| Unknown | 146 | 194 | 179 | 189 | 109 | 125 | 942 | 36.8 |
| TOTAL | 468 | 521 | 440 | 389 | 328 | 412 | 2558 | 100.0 |

Figure PO 9



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

Country Reports: *POLAND 1993 – 1998*

Table PO 12

Foodborne disease outbreaks by place where food was contaminated and causative agent
POLAND 1993 - 1998

| | Private farm | Socialized farm | Welllocal supply water | Private home | Canteen | School/kindergarten | Sanatorium | Hospital | Social care home | Orphanage | Restaurant/Cafe | Excursion | Others | Difficult to state | Various places | Unknown |
|---------------------|------------------|-----------------|------------------------|--------------|------------|---------------------|------------|------------|------------------|------------|-----------------|------------|------------|--------------------|----------------|-------------|
| | No. of outbreaks | | | | | | | | | | | | | | | |
| <i>Salmonella</i> | 686 | 31 | - | 1 | - | - | - | - | - | - | - | - | 59 | 299 | 358 | 728 |
| <i>Botulism</i> | - | - | - | 8 | - | - | - | - | - | - | - | - | - | 1 | - | 1 |
| <i>E.coli</i> | - | 1 | 14 | 1 | - | 1 | - | 1 | - | - | - | - | 2 | 1 | 12 | 21 |
| <i>Shigella</i> | - | - | 15 | 1 | - | 2 | - | - | 1 | 3 | - | 1 | - | - | 6 | 25 |
| <i>Staph.aureus</i> | 6 | 2 | - | 1 | 1 | 1 | 1 | - | 1 | 1 | - | 1 | 2 | 5 | 24 | 27 |
| <i>Trichinella</i> | 14 | 1 | - | - | - | - | - | - | - | - | - | - | 9 | 1 | - | 6 |
| Chemicals | - | - | - | 1 | - | - | - | - | - | - | - | - | 1 | - | - | - |
| Viruses | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 |
| Others | - | - | - | - | - | 1 | - | - | - | - | - | - | 18 | - | 1 | 5 |
| Unknown | 2 | 1 | 6 | 2 | - | 2 | - | - | - | - | - | - | 3 | 1 | 6 | 122 |
| Total | 708 | 36 | 35 | 15 | 1 | 7 | 1 | 1 | 2 | 4 | 0 | 2 | 94 | 308 | 407 | 936 |
| % | 27.7 | 1.4 | 1.4 | 0.6 | 0.0 | 0.3 | 0.0 | 0.0 | 0.1 | 0.2 | 0.0 | 0.1 | 3.7 | 12.0 | 15.9 | 36.6 |

3.5 Contributing factors

Most often registered in outbreaks of foodborne and waterborne infections in Poland in 1991 - 1997 were:

- preparing of the dishes from contaminated raw materials (mainly eggs contaminated with *Salmonellae*;
- improper hot holding; and - rarely -
- preparing food a day or more before serving (especially on the family ceremonies).