



NETHERLANDS (NET)

Population: 15.8 million (1999)

Area: 41 532 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

1.1 Reporting systems

In the Netherlands, one official and two voluntary reporting systems may be used:

- Reporting of mandatory notifiable disease to the Inspectorate for Health Care

Foodborne diseases, as far as 2 or more patients are involved, have to be reported since 1979. Single cases of foodborne diseases have to be reported if an individual is working in the food company, catering industry or professionally responsible for treatment or care of other individuals.

- Reporting to Food Inspection Services

Each individual can report all events of possible/suspected foodborne disease to the Food Inspection Services (FIS). All complaints are registered and investigated by an inspector. Annually the FIS pass on their data to the National Institute of Public Health and the Environment (Rijksinstituut voor Volksgezondheid en Milieu, RIVM), where they are processed into standard tables.

- Reporting of foodborne outbreaks to Municipal Health Services

Since 1996, Municipal Health Services voluntarily report outbreak investigations of foodborne outbreaks on a standard form. A copy of this form is sent to the RIVM.

The coverage of these systems, which are partially overlapping, is poor. All three systems suffer from underreporting. Besides, the data mostly concern outbreaks and are not appropriate to give information about incidence.

Additional information can be collected from a sentinel laboratory-based surveillance system, called LSI, including a limited number of bacterial pathogens including Salmonella, Campylobacter, Shigella, E.coli O157. In addition an electronic laboratory-based surveillance system, called ISIS, is under construction, but already generates data for a limited number of laboratories in the Netherlands.

1.2 Reporting of foodborne diseases

Patients suffering from foodborne diseases can be divided into three groups: one group will visit a physician, another group will contact a Food Inspection Service or (through their physician) Municipal Health Service, while the third group of patients, the majority, will neither visit a physician nor report to such service. Obviously, no information is obtained from the latter group.

In case patients visit their physician, faecal samples will sometimes be examined for enteropathogenic bacteria. In case of positive results, the cases that meet the earlier described criteria ought to be notified on the basis of the Infectious Diseases Act (revised in April 1999). Registration of notified cases is ensured through the Inspectorate for Health Care, Infectious Diseases Section. Parallel with the form for statutory notification some basic epidemiological parameters of the foodborne outbreak are sent to the RIVM on a voluntarily basis. At the RIVM this data is linked to the notification data of all individual patients involved.

Patients report to Food Inspection Services, when they suspect food as being the cause of their illness. These services carry out investigations into the causes of the reported incidents, with a focus on the microbiological examination of food samples and samples from the kitchen environment. The Municipal Health Services are mostly contacted by physicians who notice outbreaks of foodborne infections. Sometimes an epidemiological study is performed to identify the cause of the infection, with a special focus on the microbiological examination and questioning of the patients. To evaluate the status of foodborne disease in The Netherlands, data from the Food Inspection Services and the Municipal Health Services are collected and analysed by the Department for Infectious Diseases Epidemiology, RIVM. Data from both sources (and the notification data from the Inspectorate for Health care) are reported in annual summaries on foodborne infections and intoxications in The Netherlands by the Department for Infectious Diseases Epidemiology, RIVM. This Department also acts as Contact Point to the WHO Surveillance Programme for Control of Foodborne Infections and Intoxications in Europe.

In this report, as previously, data from the Municipal Health Services are not included in the further analyses.

2. Statutory notification[§]

Table NL 1 presents data from laboratory based surveillance systems. In Table NL1 only cases of foodborne infections are part of the statutory notification system[§].

Table NL 1

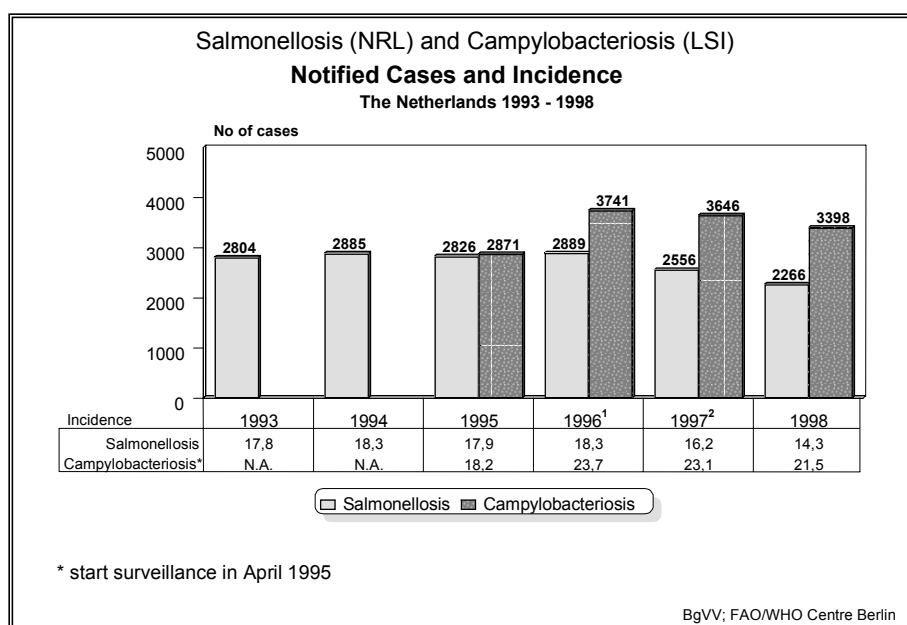
Notified cases of foodborne diseases
THE NETHERLANDS 1993 – 1998

Disease	1993	1994	1995	1996	1997	1998
	Number of cases					
Salmonellosis (NRL)	2804	2885	2826	2889	2556	2266
<i>Incidence rate</i>	17.7	18.3	17.9	18.3	16.2	14.3
Campylobacteriosis (LSI)**	N.A.	N.A.	2871*	3741	3646	3398
<i>Incidence rate</i>	-	-	18.2	23.7	23.1	21.5
E.coli O157 (LSI)	N.A.	N.A.	N.A.	10	29	31
<i>Incidence rate</i>	-	-	-	0.1	0.2	0.2
Yersiniosis (LSI)	111	136	111	89	N.A.	N.A.
<i>Incidence rate</i>	0.7	0.9	0.7	0.6	-	-
Listeriosis (LSI)	14	24	31	22	21	29
<i>Incidence rate</i>	0.1	0.2	0.2	0.1	0.1	0.2
Brucellosis	N.A.	4	3	4	3	2
<i>Incidence rate</i>	-	0.0	0.0	0.0	0.0	0.0
Echinococcosis	N.A.	45	33	28	61	23
<i>Incidence rate</i>	-	0.3	0.2	0.2	0.4	0.1
Trichinellosis	N.A.	N.A.	0	0	0	1
<i>Incidence rate</i>	-	-	0.0	0.0	0.0	0.0
Foodborne infections (statutory) [§]	954	969	575	786	563	546
<i>Incidence rate</i>	6.0	6.1	3.6	5.0	3.6	3.5

* start surveillance in April

** LSI= Laboratory-based Surveillance Infectious diseases, in which 15 regional public health laboratories (16 for Salmonella) weekly forward the number of positive test results and the number of faecal samples tested.

Figure NL 1



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

Country Reports: *NETHERLANDS 1993 – 1998*

2.1 Salmonellosis

2.1.1 Distribution of Salmonella serotypes

Table NL 2

Distribution of Salmonella serotypes among human cases
THE NETHERLANDS 1991 - 1998

Serotype	Year							
	1991	1992	1993	1994	1995	1996	1997	1998
	%							
<i>S. Typhimurium</i>	34.1	36.9	35.3	24.3	27.7	34.7	30.8	30.3
<i>S. Enteritidis</i>	34.5	33.5	37.3	49.6	48.2	44	45.5	43.2
<i>S. Virchow</i>	4.7	4.9	4.4	4.0	2.7	1.2	1.5	1.3
<i>S. Hadar</i>	2.4	2.3	1.9	3.0	1.7	2.3	2	2.2
<i>S. Panama</i>	1.2	0.5	1.6	0.5	0.9	0.6	1	0.7
<i>S. Infantis</i>	1.4	1.3	1.6	1.8	1.5	2.3	2.3	2.2
<i>S.B.-morbificans</i>	1.9	2.8	2.4	2.2	2.6	1.8	1.5	1.6
<i>S. Livingstone</i>	3.4	1.5	1.5	0.7	0.4	0.3	0.9	0.8
<i>S. Brandenburg</i>	1.4	1.1	1.0	0.8	1	1.3	1.4	1.4
<i>S. Typhi</i>	1.4	1.7	1.2	1.5	1.3	0.8	0.9	0.7
Other serotypes	13.4	13.5	12.2	11.6	12	10.7	12.2	15.6

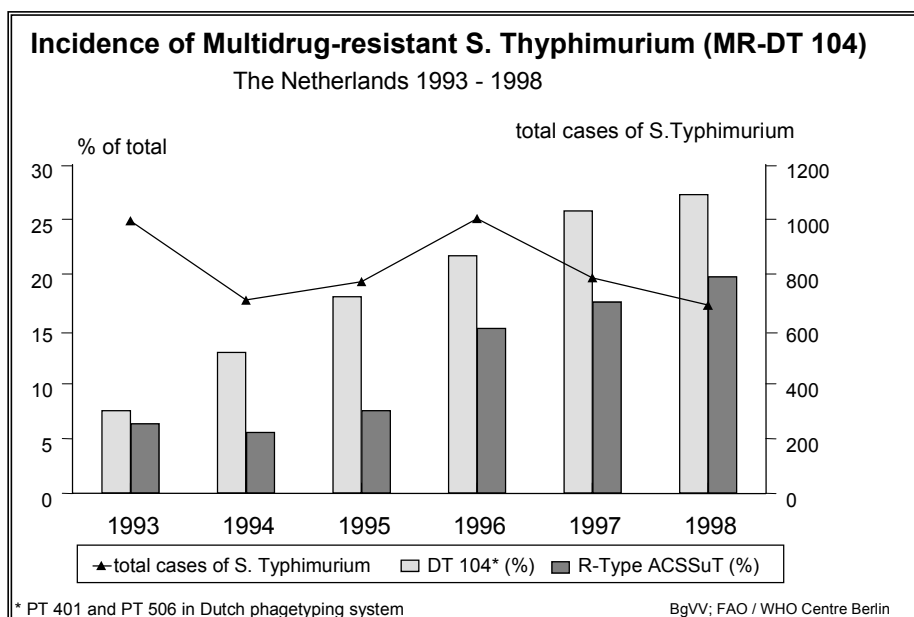
Table NL 3

Multidrug-resistant *S. Typhimurium* strains isolated from humans
THE NETHERLANDS 1993 – 1998

Year	<i>S. Typhimurium</i> Total No. isolates	DT 104 ¹ (%)	DT 104 (% of R-Type ACSSuT)
1993	994	76 (7.6%)	83.9
1994	705	91 (12.9%)	44.0
1995	772	139 (18.0%)	42.1
1996	1002	218 (21.7%)	69.6
1997	786	203 (25.8%)	68.1
1998	686	187 (27.3%)	72.5

¹ PT 401 and PT 506 in Dutch phagetyping system

Figure NL 2



3. Epidemiologically investigated incidents

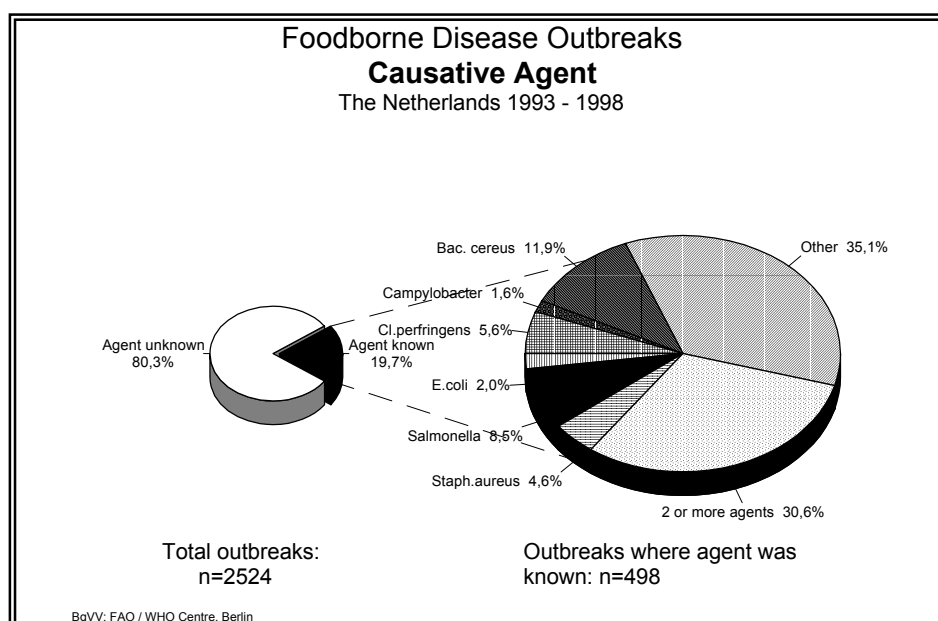
3.1 Causative agents

Table NL 4

**Foodborne disease outbreaks, cases in outbreaks and single cases
by causative agents, reported to the Food Inspection Services
THE NETHERLANDS 1993 - 1998**

Causative agent	Outbreaks		Cases in outbreaks	Single cases	Incidents, total	
	No.	%			No.	No.
<i>Bac. cereus</i>	59	2.3	537	30	89	2.0
<i>Campylobacter</i>	8	0.3	29	11	19	0.4
<i>Cl. perfringens</i>	28	1.1	190	10	38	0.8
<i>E. coli</i>	10	0.4	40	3	13	0.3
<i>Salmonella</i>	42	1.7	453	21	62	1.4
<i>Staph. aureus</i>	23	0.9	95	13	36	0.8
2 or more agents	152	6.0	1000	105	257	5.7
Others	174	6.9	941	131	305	6.8
Total known	496	19.7	3114	325	823	18.3
Unknown	2028	80.3	9263	1651	3677	81.7
Total	2524	100.0	12404	1976	4500	100.0

Figure NL 3



3.2 Incriminated food

Table NL 5

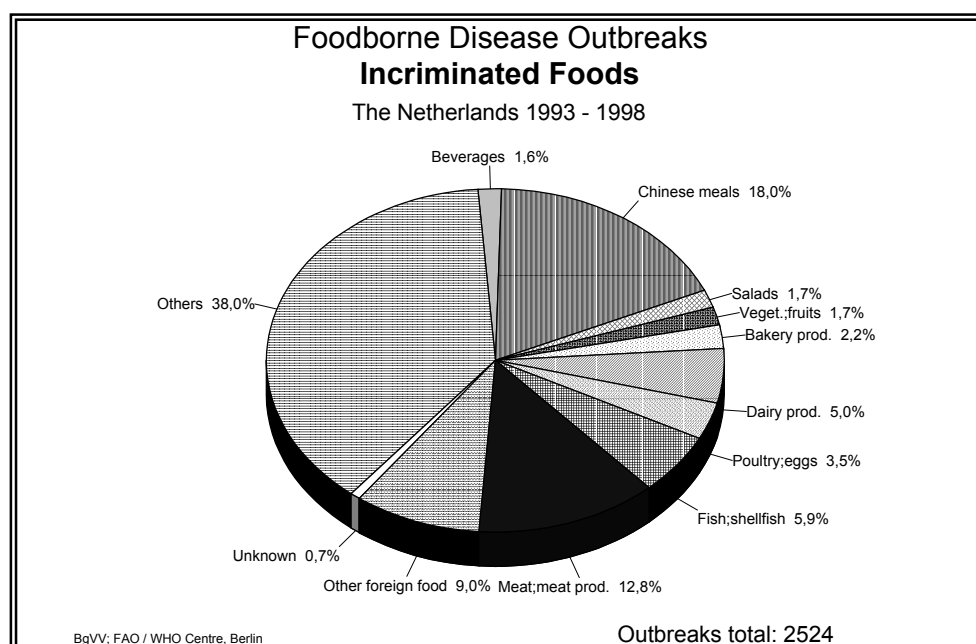
Foodborne disease outbreaks by incriminated food
THE NETHERLANDS 1993 - 1998

Food	Year						Total	
	1993	1994	1995	1996	1997	1998	1993-1998	
	No. of outbreaks						No.	%
Meat; meat products	31	47	45	64	98	38	323	12.8
Fish; shellfish	10	22	33	32	42	10	149	5.9
Poultry; eggs; egg prod.	6	16	12	8	30	16	88	3.5
Dairy products	19	23	18	20	30	15	125	5.0
Bakery products	4	11	16	5	13	6	55	2.2
Vegetables; fruits	9	6	6	4	15	3	43	1.7
Salads	10	15	9	8	*	*	42	1.7
Chinese food	88	101	114	151	**	**	454	18.0
Other foreign food	24	57	69	77	**	**	227	9.0
Beverages	5	7	15	4	4	5	40	1.6
Other foods	90	189	164	150	288	79	960	38.0
Total known	296	494	501	523	520	172	2506	99.3
Unknown	7	5	4	2	0	0	18	0.7
Total	303	499	505	525	520	172	2524	100.0

* not included as separate category anymore (included in Vegetables, fruits)

** not included as separate category anymore; nationality of kitchen has been a separate item from incriminated food since 1997.

Figure NL 4



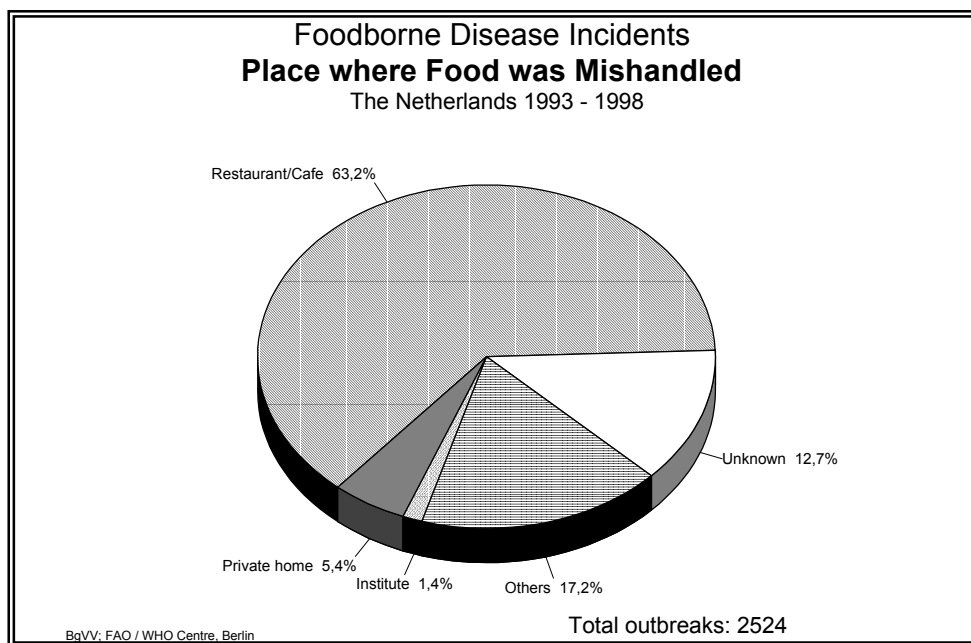
3.3 Place where food was (probably) mishandled

Table NL 6

Foodborne disease incidents by place where food was (probably) mishandled
THE NETHERLANDS 1993 - 1998

Place	Year						Total	
	1993	1994	1995	1996	1997	1998	1993-1998	
No. of outbreaks								
Restaurant/Cafeteria	163	142	321	341	358	118	1443	57.2
Private household	12	21	36	26	39	10	144	5.7
Institute	3	6	11	10	6	1	37	1.5
Other places	32	75	110	117	103	23	460	18.2
Total known	210	344	478	494	506	152	2184	86.5
Unknown	93	155	27	31	14	20	340	13.5
Total	303	499	505	525	520	172	2524	100.0

Figure NL 5



4. Additional information

The National Institute for Public Health and Environment (RIVM) publishes a monthly bulletin on infectious diseases which can be found at: http://www.isis.rivm.nl/inf_bul/home_bul.html.

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