

Zoonoses are diseases transmitted from animals to humans. Zoonotic intestinal infections arise after ingestion of contaminated foodstuffs or water, or after contact with infected animals or humans.

Overall trends

Bacterial enteropathogens are monitored via the laboratory notification system. The development from 1980 and onwards is presented in Figure 1.

In 2006, a total of 3242 (60 per 10⁵) Campylobacter jejuni/coli infections were reported. This constitutes a 12% decrease compared with the previous year.

2006 also saw a 7% decrease in the number of salmonella cases relative to the previous year, with a total of 1658 cases (31 per 10⁵). In comparison with 2005, a 12% increase was seen for S. Enteritidis (562 cases), a 27% increase was observed for S. Typhimurium (411 cases), while the group named other serotypes showed a 20% increase (687 cases). These serotypes accounted for a higher number of infections than each of the traditionally predominant types; S. Enteritidis, which is primarily transmitted from eggs, and S. Typhimurium, which is primarily transmitted from pork and poultry. The most frequent serotypes are shown in Table 1.

Table 1. Salmonella cases (episodes) by serotype, 2006

Serotype	Number	(%)
S. Enteritidis	562	(34)
S. Typhimurium	411	(25)
S. Braenderup	57	(3)
S. Newport	57	(3)
S. Stanley	49	(3)
S. O:4,5,12; H:i:-	33	(2)
S. Virchow	33	(2)
S. Infantis	32	(2)
S. Java	30	(2)
S. Dublin	27	(2)
Other serotypes	369	(22)
Total	1660	(100)

The group named other serotypes comprised a total of 108 serotypes. A number of different foodstuffs were included among the sources of infection, and many patients are thought to have been infected during stays abroad.

There were 215 notifications of Yersinia enterocolitica (4.0 per 10⁵), a decrease of 11% relative to 2005. It is assumed that these infections were

Figure 1. Number of recorded infections caused by Salmonella, Campylobacter and Yersinia enterocolitica, 1980-2006

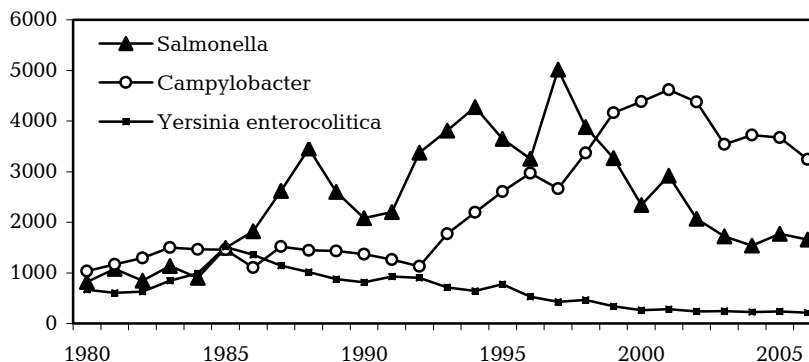


Table 2. Zoonotic intestinal infections 2006, age-specific incidence per 10⁵

Age (yrs)	Campylobacter	S. Enteritidis	S. Typhimurium	Other salmonella	Yersinia enterocolitica	VTEC
< 1	64	17	16	61	14	14
1-4	91	23	23	25	25	18
5-14	38	11	7	7	5	3
15-24	108	12	10	21	3	5
25-44	76	7	5	13	2	2
45-64	44	11	7	9	2	1
65+	30	8	8	9	3	1
Total	60	10	8	13	4	3

mostly derived from pork. A total of 146 cases of verocytotoxin-producing E. coli (VTEC) (2.7 per 10⁵) were registered, which is a 6% decrease compared with 2005. As in previous years, the case distribution by county was uneven. This variation is presumed to reflect differences in diagnostic practices. In 2006, 19 (14%) of the VTEC cases were caused by serogroup O157. No cases of haemolytic uraemic syndrome (HUS) were notified in 2006, but three HUS patients were tested for antibodies against common VTEC types and one tested positive. The age-specific incidence, Table 2, follows the pattern from previous years, EPI-NEWS 9/06. No general outbreaks of neither VTEC nor Yersinia enterocolitica were recorded in 2006, but the year saw several salmonella outbreaks caused by S. Typhimurium and one major campylobacter outbreak.

Commentary

Food safety in Denmark has improved markedly in recent years, which have seen a steady decrease in the number of salmonella and to some degree also the number of

campylobacter infections. The Danish salmonella control programmes are very comprehensive and have led to a morbidity decrease in the period from 1997 and onwards. Furthermore, the number of campylobacter infections has followed a moderately decreasing trend since 2001. However, campylobacter remains the most frequent bacterial zoonosis in Denmark, causing approximately twice as many cases as salmonella. Fresh poultry is the primary source of infection in Denmark. The proportion of fresh Danish poultry containing campylobacter has been more than halved in recent years. It remains important, however, to avoid cross contamination of foodstuffs when handling raw poultry and it is also essential to roast poultry thoroughly. The number of notified VTEC infections has remained at roughly the same level during the past three years. Particular attention is paid to VTEC infections because of the HUS risk. Contrary to the other zoonotic bacterial infections, VTEC infection as well as HUS is notifiable on form 1515.

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2007 figures are preliminary)

Table 1	Week 11 2007	Cum. 2007 ¹⁾	Cum. 2006 ¹⁾
AIDS	1	9	10
Creutzfeldt-Jakob	0	4	4
Food-borne diseases	4	118	86
of these, infected abroad	2	18	21
Gonorrhoea	4	82	100
Hepatitis A	0	9	3
of these, infected abroad	0	3	0
Hepatitis B (acute)	1	6	5
Hepatitis B (chronic)	7	55	131
Hepatitis C (acute)	0	2	1
Hepatitis C (chronic)	6	71	198
HIV	8	63	47
Legionella pneumonia	2	25	15
of these, infected abroad	0	1	2
Leptospirosis	0	4	3
Meningococcal disease	0	5	26
of these, group B	0	0	15
of these, group C	0	4	4
of these, unspec. + other	0	1	7
Mumps	0	3	8
Neuroborreliosis	1	21	11
Ornithosis	0	1	4
Pertussis (children < 2 yrs)	2	20	17
Purulent meningitis			
Haemophilus influenzae	0	0	1
Listeria monocytogenes	0	2	3
Streptococcus pneumoniae	0	13	20
Other aethiology	0	1	1
Unknown aethiology	0	0	6
Under registration	6	25	-
Shigellosis	0	11	18
of these, infected abroad	0	5	16
Syphilis	1	23	17
Tetanus	0	0	0
Tuberculosis	7	80	71
Typhoid/paratyphoid fever	0	1	8
of these, infected abroad	0	1	8
VTEC/HUS	10	39	24
of these, infected abroad	5	11	8

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received at Statens Serum Institut

Table 2	Week 11 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Bordetella pertussis (all ages)	3	35	62
Gonococci	5	73	90
of these, females	0	10	20
of these, males	5	63	70
Listeria monocytogenes	0	13	6
Mycoplasma pneumoniae			
Resp. specimens 3)	17	200	184
Serum specimens 4)	15	198	137
Streptococci 5)			
Group A streptococci	1	32	36
Group B streptococci	2	20	24
Group C streptococci	2	4	6
Group G streptococci	3	27	28
S. pneumoniae	24	310	312
Table 3	Week 9 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Pathogenic int. bacteria 6)	36	402	304
Campylobacter	7	39	52
S. Enteritidis	7	46	53
S. Typhimurium	12	101	88
Other zoon. salmonella	2	46	29
Yersinia enterocolitica			
Verocytotoxin-prod. E.coli	11	42	13
Enteropathogenic E. coli	4	36	42
Enterotoxigenic E. coli	5	27	36

Table 1, notes

In 2007, none of the following cases have been reported: Anthrax, botulism, cholera, diphtheria, haemorrhagic fever, leprosy, plague, polio, rabies, rubella, and typhus exanthematicus.

1) Cumulative no. 2007 and corresponding period 2006

Tables 2 & 3, notes

2) Cumulative no. 2007 and corresponding period 2006

3) Respiratory specimens with positive PCR

4) Serum specimens with pos. complement fixation test

5) Isolated in blood or spinal fluid

6) See also www.germ.dk

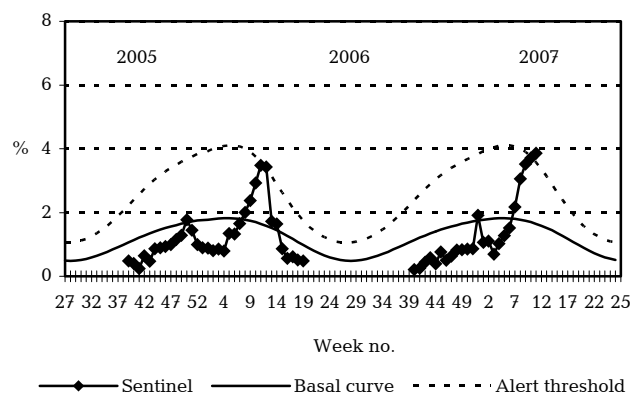
Patients with laboratory diagnosed chlamydia by gender and county, 4th quarter 2006

County	2006			2005
	M	F	Total	Total
Cph. & Frb. Municipalities	459	670	1,132 *	1,151
Copenhagen	230	394	625 *	640
Frederiksborg	120	215	335	308
Roskilde	64	130	194	235
West Zealand	112	220	332	331
Storstrøm	98	173	271	256
Bornholm	27	34	61	38
Funen	239	401	640	564
South Jutland	95	165	260	257
Ribe	108	143	251	264
Vejle	144	305	449	389
Ringkøbing	95	188	283	274
Aarhus	333	580	913	868
Viborg	80	167	247	218
North Jutland	222	444	666	594
Whole country	2,426	4,229	6,659 *	6,384

*) Gender unknown in a few cases

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2005/2006/2007



Sentinel: Influenza consultations (as percentage of total consultations)
 Basal curve: Expected frequency of consultations under non-epidemic conditions
 Alert threshold: Possible incipient epidemic