

# **Infectious diseases in Finland 2000**

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## INTRODUCTION

This year the annual report 'Infectious Disease in Finland' has fewer comments than in the past. The report describes the epidemiologic situation, on the basis of the National Infectious Disease Register (NIDR) and other relevant sources. There are more disease-specific tables and figures than before.

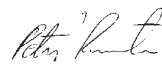
The regional experts in all hospital districts started to use remote access to the NIDR data base with www technology, employing user passwords and encrypted internet connection. Each hospital district has access to the data in the NIDR on all cases from their area. With this application, the exploitation of the data collected in NIDR is speedier, and the hospital districts can more effectively participate in recognising and revising possible errors or inconsistencies in the notifications. At the same time, the volume of paper notification forms and printouts is greatly reduced.

The data on microbiologically verified cases that are notified to NIDR constitute the backbone of infectious disease surveillance in Finland. Electronic notification of microbiological findings from the laboratories, constituting 63 per cent of all laboratory notifications in 2000, facilitates fast collection of data. For example, a finding on a respiratory virus by an antigen detection method arrived in NIDR in 2000 with a median delay of 9 days from the day of sampling, the delay having been 21 days in 1996. The delay can still be reduced when all laboratories start to apply fully the guidelines given regarding the time of notification. This would further increase the timeliness and the value of the data to the users.

The NIDR is complemented by other surveillance systems in order to acquire a broader epidemiologic picture. A sexually transmitted diseases sentinel network involving approximately 20 clinical units in various parts of Finland, which has been active for five years, collects more detailed information on the risk factors of STD cases than the NIDR. The notification system of suspected food or water borne outbreaks functions as a syndrome based surveillance scheme for outbreaks. The Finnish Resistance (FiRe) study group monitors the antimicrobial susceptibility of bacteria in Finland.

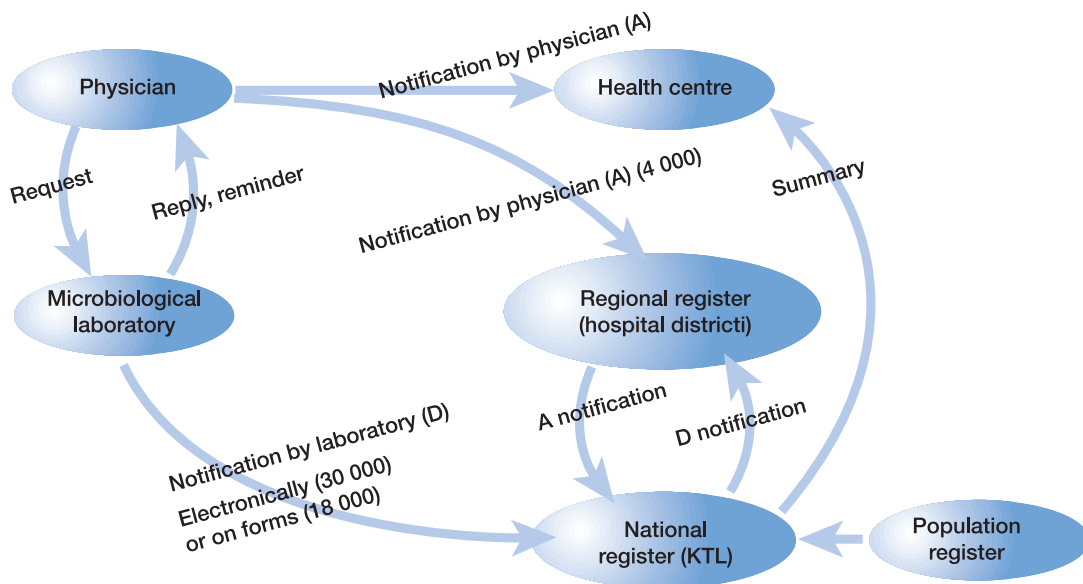
Even though the national surveillance functions reasonably well with the schemes mentioned above, there are important areas to develop. The development project for the national surveillance of nosocomial infections (SIRO) has created standardised surveillance methods for the most important types of nosocomial infections. Involvement of a significantly greater number of hospitals in the nosocomial infection surveillance scheme is anticipated in the near future. The need for

clinical and virological surveillance of acute respiratory infections, particularly for influenza and influenza-like illness, has been stressed in public repeatedly. In the surveillance activities for vaccine preventable diseases more information is required on the preceding vaccination status of cases. This may require the systematic collection of vaccination data from local registries. In a Finnish research project it was possible to correlate retrospectively the frequency of searches to a physicians' reference data base on specific diseases to epidemics of these infections, raising the possibility that this type of surveillance could have potential in the early detection of epidemics. In Finland, it is possible to achieve surveillance of high efficiency and quality in all the mentioned areas, but this would require additional resources both on the national and the regional level.



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Figure 1. Data and information flow in the National Infectious Disease Register 2000



## EPIDEMIOLOGIC REVIEW

### RESPIRATORY INFECTIONS

Figure 2.

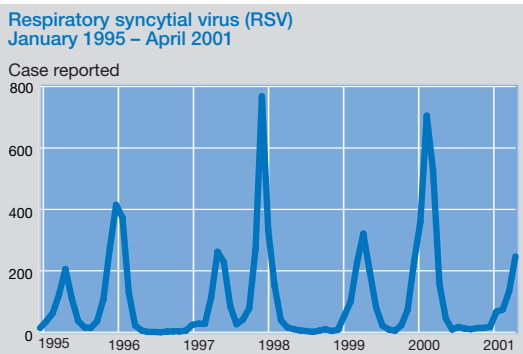
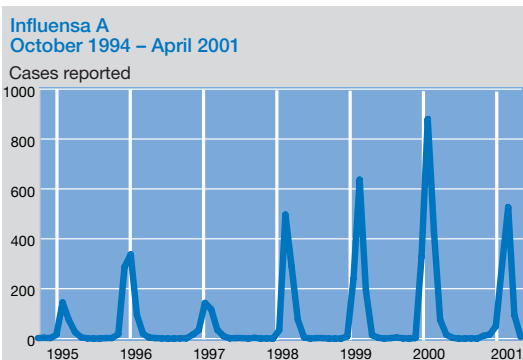


Figure 3.



### GASTROINTESTINAL INFECTIONS

#### Calicivirus outbreak in a rehabilitation centre

In December 1999, a calicivirus outbreak occurred in a rehabilitation centre in Southern Finland. About 50 visitors and employees fell ill with diarrhoea and/or vomiting within three days. A questionnaire study did not show any association with specific food or beverage items. Caliciviruses were not detected in food or water samples. In early January, the outbreak seemed to calm down, but on 25 January, suddenly more than 30 people fell ill with diarrhoea or vomiting. A new questionnaire study failed to show an association with specific food items or activities in the centre. However, calicivirus was detected in environmental samples (door knob, wash basin), and the strain was indistinguishable from the strain detected in patient samples. In conclusion, the prolonged outbreak was caused by calicivirus that spread mainly from person to person, but the virus was probably transmitted also through the environment.

#### Calicivirus outbreak in Nurmes

In March 2000, an outbreak of gastroenteritis occurred in the municipality of Nurmes in Eastern Finland. Two different strains of calicivirus were detected in patient samples. The municipal water supply was suspected to be the source of infection, but calicivirus was not detected in water samples. A questionnaire survey was conducted to determine the source of the outbreak. The municipalities of Nurmes, Juuka and Valtimo have started a pilot project in 1999 in the field of information society. The project provides access to internet to about 45% of households in the area. This "community computer network" was used for conducting the survey. The questionnaire was distributed through the internet, completed

on-line by the respondents and consequently routed directly to a database. The epidemiologic investigation confirmed that the outbreak was caused by municipal water.

### Campylobacter outbreak in Asikkala

In August, 2000, several hundred residents of Asikkala fell ill with gastroenteritis. *Campylobacter jejuni* was isolated from stool samples of several symptomatic patients. Interviews of individual patients suggested that tap water was the source of the outbreak. A boil-water notice was issued, and from the next day the water system was chlorinated. A case-control study was conducted to determine the source of the outbreak, and samples were collected from the water supply. *C. jejuni* was isolated from two different sites of the water system, and the strain was indistinguishable by pulse field gel electrophoresis (PFGE) from the patient strain. The case-control study showed a significant association between illness

and drinking unboiled tap water. The site of contamination could not be precisely identified, but assessment of the water system revealed several possible sites which were repaired during autumn 2000.

Table 1.

#### Salmonella infections acquired domestically or during travel, 2000

Five most common serotypes	
<b>Domestically acquired infections</b>	
S. Typhimurium	28
S. Enteritidis	11
S. Agona	7
S. Virchow	4
S. London	2
Others altogether	13
<b>Infections acquired abroad</b>	
S. Enteritidis	775
S. Typhimurium	153
S. Hadar	81
S. Braenderup	35
S. Stanley	32
Others altogether	530
<b>Country of transmission not notified</b>	
Total	953

Figure 4.

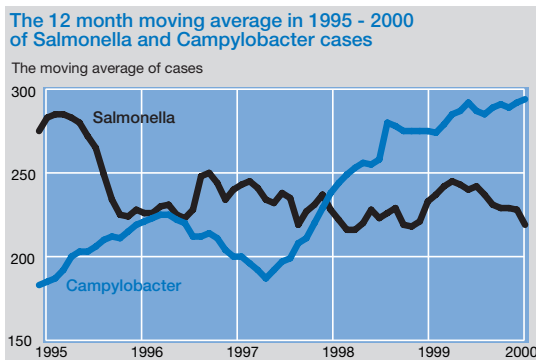


Table 2

#### Shigella infections acquired domestically or during travel, 2000

<b>Domestically acquired infections</b>	
Total	8
<b>Infections acquired abroad</b>	
Egypt	14
India	10
Others altogether	33
<b>Country of transmission not notified</b>	
Total	10

Figure 5.

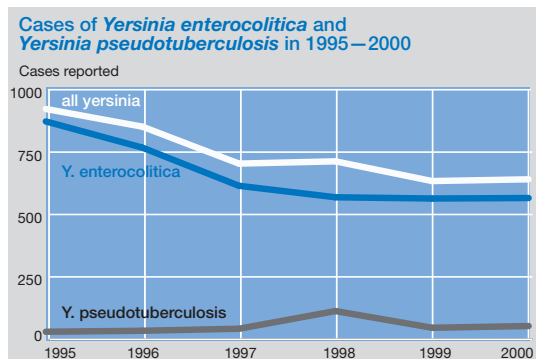
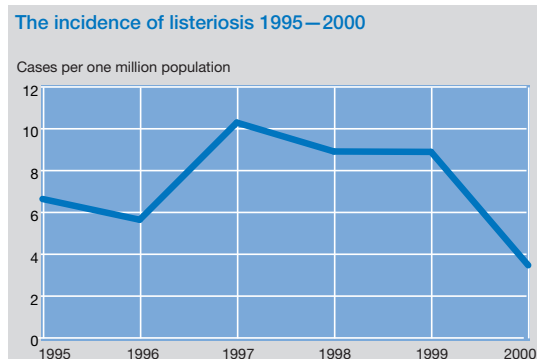


Figure 6.



## HEPATITIS

**Table 3**

*Hepatitis A infections acquired domestically or during travel, 2000*

Domestically acquired infections	
Total	23
Infections acquired abroad	
Russia	12
Others altogether	7
Country of transmission not notified	
Total	9

**Table 4**

*Age distribution of acute hepatitis B cases and of all hepatitis C cases, 2000*

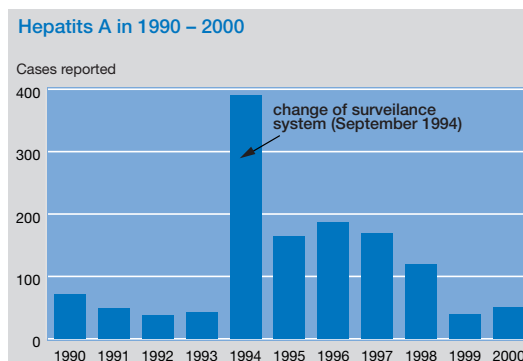
Age group	Acute hepatitis B		Hepatitis C	
	male	female	male	female
0-4	3	-	29	16
5-9	1	2	2	1
10-14	3	2	2	4
15-19	15	9	101	83
20-24	28	12	278	95
25-29	24	9	233	69
30-34	21	7	179	71
35-39	15	9	147	65
40-44	16	6	116	30
45-49	17	6	85	29
50-54	9	1	24	9
55-59	1	2	11	7
60-64	-	2	7	6
65-69	4	1	2	2
70-74	1	5	8	6
75-	1	6	6	16
Total	159	79	1230	509

**Table 5**

*Method of transmission of acute hepatitis B and of all hepatitis C cases, 2000*

Method of transmission	Acute hepatitis B	Hepatitis C
Injecting drug use	73	844
Sex	47	71
Perinatal	-	6
Blood products	1	23
Not known/not notified	117	795

**Figure 8.**





## SEXUALLY TRANSMITTED DISEASES

Notifications on all sexually transmitted diseases increased in 2000. Gonorrhoea cases totaled 287. The majority of reports were from the hospital districts of South and North Carelia. Of cases 77 per cent were men. Half of them had acquired the infection abroad. Of the infections acquired abroad, 48 per cent originated from Russia and 19 per cent from Thailand. The majority of cases in women were acquired in Finland.

A total of 212 cases of syphilis were notified, 62 per cent of them in males. Out of the total, 18 per cent were in persons older than 60 years. Some of them had a serologic marker from infection acquired much earlier. For the first time since the early 1980s a case of syphilis in a newborn was notified. Out of the infections in males 74 per cent had been acquired abroad, among these 85 per cent in Russia. Infections in females were usually

domestically acquired. The incidence of syphilis was highest in the vicinity of the eastern border.

There was a considerable increase in *Chlamydia trachomatis* notifications in 2000, reaching 11 731, an increase of 10% compared with 1999. Despite better diagnostics and the availability of simple one-dose treatment there has been a continuing increase in the number of cases. Particular attention should be focussed on partner notification and interruption of the transmission chain.

Figure 8.

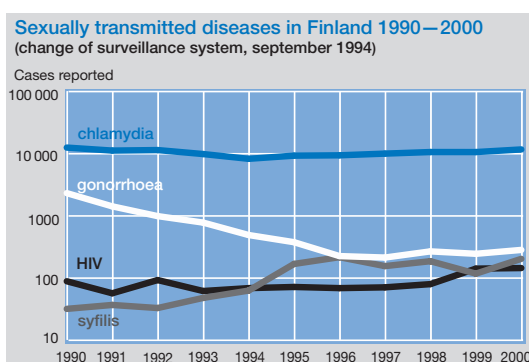


Table 6

### Gonorrhoea, chlamydia and syphilis cases by age and sex in 2000

Age group	Gonorrhoea		Chlamydia		Syphilis	
	male	female	male	female	male	female
0-4	-	-	6	9	-	2
5-9	-	-	-	-	-	-
10-14	-	-	3	42	-	-
15-19	4	3	595	2356	3	3
20-24	31	16	1932	2899	4	8
25-29	37	11	1014	1031	15	12
30-34	53	13	479	425	12	9
35-39	31	9	259	222	15	7
40-44	27	7	117	109	16	3
45-49	14	2	54	43	17	3
50-54	9	-	38	28	21	7
55-59	8	1	24	14	6	2
60-64	2	-	7	7	7	3
65-69	3	1	7	2	1	1
70-74	-	-	2	3	1	5
75-	1	1	2	2	11	10
Total	220	64	4539	7192	129	75

Table 7

<i>Country of transmission of gonorrhoea cases, 2000</i>	
<b>Domestically acquired infections</b>	
Total	136
<b>Infections acquired abroad</b>	
Russia	47
Thailand	18
Others altogether	33
<b>Country of transmission not notified</b>	
Total	50

Table 8

<i>Country of transmission of syphilis cases, 2000</i>	
<b>Domestically acquired infections</b>	
Total	59
<b>Infections acquired abroad</b>	
Russia	76
Polen	4
Others altogether	15
<b>Country of transmission not notified</b>	
Total	50

Table 9

*HIV infection in Finland 1990 – 2000*

Year	Cases notified		Foreigners	Method of transmission		Injecting drug use	Blood products*)	Perinatal	Not known
	Total	Female		Sex between male	Heterosex				
1990	89	13	25	44	37	-	1	-	7
1991	57	10	23	21	23	1	-	-	12
1992	93	21	29	34	38	5	-	-	16
1993	62	16	16	18	32	4	2	-	6
1994	69	14	14	34	25	2	1	1	6
1995	72	28	23	25	40	1	-	-	9
1996	69	20	29	23	36	1	-	-	9
1997	71	23	19	19	42	-	-	1	8
1998	81	32	20	13	32	20	-	-	16
1999	143	39	15	13	28	84	-	1	16
2000	145	51	36	22	43	56	1	2	19

\*) the last infection transmitted by blood products in Finland occurred in 1985.

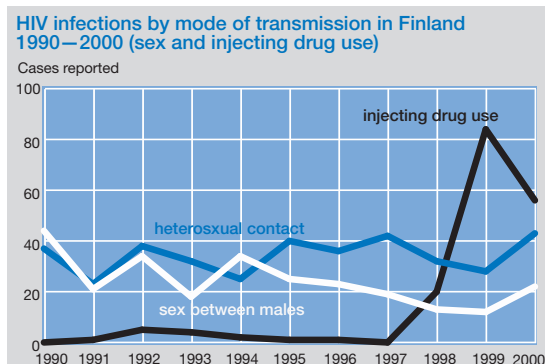
Table 10

*HIV screening results in pregnant women, 1993 – 2000*

Year	Women tested	HIV infections	Women refusing testing
1993*	66 170	5	
1994*	66 650	5	
1995*	63 315	7	
1996*	62 545	5	
1997*	59 855	6	
1998	59 638	5	417
1999	58 328	7	288
2000	58 881	8	231

\*The samples have been tested in pooled batches of five samples after removing identifiers. If the pool tested positive for HIV antibody, it was disassembled. After this the samples were tested individually in order to acquire the number of HIV positive individuals.

Figure 9.



## MYCOBACTERIAL DISEASES

### Tuberculosis

The registered cases include since 1995 all cases of tuberculosis verified by culture, as notified by the laboratories. In addition, both the patients notified by a physician only, in which the diagnosis was notified on basis of histological proof, and cases of pulmonary tuberculosis with positive sputum staining for tuberculosis bacilli were included, as in previous years.

In 2000, tuberculosis cases (537) decreased by five per cent from 1999, when there were 565 cases. The total in 2000 was the lowest since the NIDR started functioning in 1995. The number of cases with culture confirmation 451 was 5.7 per cent lower than in 1999 when it was 477. The overall incidence of tuberculosis was 10.4 cases per 100 000 population.

There were 370 cases of pulmonary tuberculosis (incidence 7.2 per 100 000), and 167 cases of non-pulmonary tuberculosis.

Among the pulmonary cases a positive sputum stain for TB was reported in 61.4 per cent. In 7.3 per cent of the pulmonary cases no sputum stain for TB was performed, or this information was missing.

Out of all cases 421 (78.4 %) were based on notifications sent by both a physician and a laboratory, 30 (5.6%) on laboratory notification only, and 86 (16 %) on physician notification only. The notifications made by physicians, which did not link to a laboratory notification with an *M. tuberculosis* finding, were linked to laboratory notifications on atypical mycobacteria. When linkage was found, the case was removed from the tuberculosis register, as had been done during the previous years.

In 2000, tuberculosis was registered in 47 (8.8.% of all cases) persons born abroad or with a nationality other than Finland. Among these, 39 (83 %) were below 50 years of age. Out of these cases, 31 were pulmonary and 16 non-pulmonary.

The antimicrobial susceptibility situation in Finland is good. In 2000, two strains with multiresistance (resistant at least to isoniazide and rifampicin) were detected.

Table 11

#### *The age and sex distribution of tuberculosis cases, 2000*

Age group	Pulmonary tbc male	Pulmonary tbc female	Other tbc male	Other tbc female	Total
0-4	-	-	-	-	-
5-9	-	-	-	-	-
10-14	-	-	2	-	2
15-19	1	1	1	1	4
20-24	2	1	3	2	8
25-29	3	5	1	3	12
30-34	10	3	2	2	17
35-39	15	1	1	1	18
40-44	16	5	1	1	23
45-49	21	5	1	2	29
50-54	17	3	5	5	30
55-59	22	8	6	6	42
60-64	24	8	1	10	43
65-69	31	9	8	8	56
70-74	26	16	10	14	66
75-	58	59	24	46	187
<b>Total</b>	<b>246</b>	<b>124</b>	<b>66</b>	<b>101</b>	<b>537</b>

## RESISTANT BACTERIA

**Table 12**

*All notified MRSA findings, and the proportion of MRSA in Staphylococcus aureus findings from blood, 1995-2000*

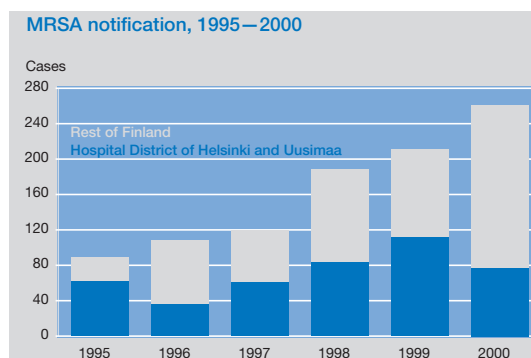
Year	All MRSA findings	<i>S. aureus</i> findings in blood	MRSA findings in blood, Proportion of <i>S. aureus</i> from blood with methicillin resistance (%)
1995	89	627	2 (0,3)
1996	108	667	- (0)
1997	120	746	4 (0,5)
1998	189	717	5 (0,7)
1999	211	812	8 (1,0)
2000	261	849	4 (0,5)
Total	978	4418	23 (0,5)

**Table 13**

*All notified S. pneumoniae findings with resistance (PRP) or reduced susceptibility to penicillin (PIP), and the proportion of S. pneumoniae findings in blood with PRP or PIP, 1995-2000*

Year	All PIP/PRP findings	<i>S. pneumoniae</i> findings blood	<i>S. pneumoniae</i> findings CSF	PIP/PRP findings blood	PIP/PRP findings CSF	Reduced susceptibility to penicillin of <i>S. pneumoniae</i> in blood (%)
1995	43	478	34	4	-	0,8
1996	93	524	33	4	-	0,7
1997	146	577	29	6	-	1,0
1998	142/62	543	35	10/4	1/-	2,6
1999	171/60	548	33	11/4	1/-	2,8
2000	236/64	592	25	16/5	1/-	3,7
Total	1017	3262	189	37/27	3/-	

During 1995-1997 only *S. pneumoniae* findings with resistance to penicillin (PRP) were notifiable. From 1998 also findings with reduced susceptibility to penicillin (PIP) have been notified.

**Figure 10.**


## OTHER BACTERIAL INFECTIONS

### Borreliosis

The number of *Borrelia* cases was exceptionally high, 895, in contrast to the range of 346-538 cases per year between 1995-1999. As previously, the incidence in 2000 was by far highest in the Åland area, more than 1 400 cases per 100 000 population.

### Meningococcal infection (*Neisseria meningitidis*)

The number of invasive meningococcal infections remained low. During 1999, infections caused by serogroup Y (N=8) increased compared with the preceding years, but only two cases were caused by this serogroup in 2000. Between March-April 2000 2 cases of invasive meningococcal disease associated with the Hajj pilgrimage to Mecca were identified in Helsinki area. Infections were caused by serogroup W135

### Tularemia

In 2000, Finland experienced the largest recorded number of cases of tularemia. From July 1 to October 31, 2000, a total of 890 microbiologically confirmed cases were reported to the National Infectious Disease Registry. Cases ranged in age from 0 to 85 years (median 46 years; 59% were men). Usually, about 100 microbiologically confirmed cases are reported annually (annual incidence, 1-2/100 000 population). Previous large outbreaks occurred in 1995 and 1996. The disease is endemic in the north western region of Finland, where it has a distinct seasonal pattern, with cases occurring from July to October. Two population based case-control studies were conducted to identify risk factors associated with pulmonary and ulceroglandular forms of tularaemia to enable development of guidelines for preventive measures.

Table 14

#### Cases of invasive meningococcal infection by serogroup in 1995 – 2000

Serogroup	1995	1996	1997	1998	1999	2000
A	-	-	-	-	-	-
B	50	59	36	44	35	30
C	22	15	5	7	9	11
Y	-	3	3	2	8	2
W 135	-	-	-	-	1	3
Not known	6	2	2	1	4	2
Total	78	79	46	54	57	48

### Hib

Two cases of meningitis caused by *Haemophilus influenzae* type b, were notified. Both were children aged less than five years old. They had received the appropriate Hib vaccinations for their age, one case two doses and the other three doses. In these cases vaccination did not give sufficient protection to the children.

## OTHER PARASITIC INFECTIONS

---

### Malaria

In 2000 38 patients with malaria were notified. *Plasmodium falciparum* was the causative agent in 25 cases, *P. vivax* in eight, *P. ovale* in three and *P. malariae* in two cases. In two cases two different species of Plasmodia causing malaria were detected. The determination of the species of Plasmodium could not be done in two cases. Most of the patients (33) had acquired the infection in Africa: 16 in Western Africa, nine in Eastern Africa and eight in Central or Southern Africa. Two cases originated from the Indian subcontinent, three from Indonesia and two from South America. All *P. falciparum* infections were from Africa except for two infections acquired in the Sumba island belonging to Indonesia. Out of the patients, 28 were Finns and 10 foreigners. Most of the patients (24) either never had used malaria drug prophylaxis or had taken it irregularly. Vivax and Ovale malaria may become symptomatic months after the journey, and this was the case for eight patients. Only for the four patients who had used appropriate malaria drug prophylaxis there was reason to suspect the presence of *P. falciparum* resistant to prophylactic drugs.

## MICROBIAL FINDINGS IN BLOOD AND CEREBROSPINAL FLUID

Table 15

### *Blood culture findings in 1995 – 2000*

Adults (≥ 15 years)

Microbe/microbe group	1995	1996	1997	1998	1999	2000
<b>Bacteria</b>						
Escherichia coli	1264	1374	1496	1462	1559	1565
Staphylococcus aureus	556	610	671	637	727	790
Staphylococcus, other than aureus	518	576	549	573	653	785
Streptococcus pneumoniae	386	426	489	466	471	494
Streptococcus viridans -group (S. milleri, S. bovis)	218	235	268	267	293	305
Enterococcus	226	250	261	280	286	321
Klebsiella spp.	235	248	274	283	281	316
Pseudomonas spp.	225	197	197	180	198	209
Bacteroides spp.	137	132	170	153	184	174
Enterobacter spp.	94	130	152	159	137	154
Streptococcus agalactiae	65	82	97	101	111	116
Streptococcus pyogenes	54	52	77	94	103	106
Streptococcus, other beta-hemolytic (C and G)	91	125	151	132	161	146
Clostridium spp.	79	66	83	68	68	77
Diphtheroids and propionibacteria	29	49	54	76	63	89
Salmonella spp.	41	26	20	29	46	24
Listeria monocytogenes	23	23	41	38	37	16
Fusobacterium spp.	23	22	23	34	28	23
Haemophilus spp.	10	19	19	29	30	32
Neisseria meningitidis	27	30	10	13	22	18
Acinetobacter spp.	28	33	24	18	24	31
Bacillus	14	17	13	18	15	36
Stenotrophomonas maltophilia	20	27	18	8	12	15
Campylobacter spp.	12	14	10	11	10	14
Yersinia enterocolitica and pseudotuberculosis	3	8	4	9	8	4
Mycobacteria	15	11	1	8	-	6
Capnocytophaga canimorsus	4	5	10	3	8	6
Other enterobacteria	130	127	147	137	138	180
Other gram-positive bacilli	26	23	22	29	28	39
Other gram-positive cocci	60	58	44	62	58	62
Other gram-negative bacteria	43	48	41	48	50	48
Other undefinable bacteria	-	1	3	5	1	4
<b>Fungi</b>						
Candida albicans	46	63	63	59	70	82
Other yeasts	28	17	23	31	35	42
Other fungi	2	-	2	7	1	-

Table 16

*Blood culture findings in 1995 – 2000*

Children (0-14 years)

Microbe/microbe group	1995	1996	1997	1998	1999	2000
<b>Bacteria</b>						
Staphylococcus, other than aureus	114	92	102	102	141	141
Staphylococcus aureus	71	57	76	81	85	59
Streptococcus pneumoniae	92	98	88	77	77	98
Escherichia coli	63	49	59	61	53	63
Streptococcus agalactiae	46	52	43	48	42	39
Streptococcus viridans -group (S. milleri, S. bovis)	35	35	36	32	33	27
Neisseria meningitidis	6	17	10	14	16	17
Klebsiella spp.	9	13	15	11	14	11
Streptococcus pyogenes	4	8	3	11	13	10
Enterococcus	21	19	12	14	12	10
Enterobacter spp.	13	10	10	10	12	8
Acinetobacter spp.	7	5	4	6	7	6
Salmonella spp.	3	2	1	3	6	1
Diphtheroids and propionibacteria	2	-	4	4	6	4
Haemophilus influenzae	2	5	2	4	5	4
Fusobacterium spp.	1	6	4	2	5	4
Bacillus	5	6	5	2	4	10
Pseudomonas spp.	4	8	10	11	2	7
Stenotrophomonas maltophilia	1	-	6	6	2	2
Campylobacter spp.	-	-	-	-	2	2
Bacteroides spp.	1	2	1	3	2	5
Streptococcus, other beta-hemolytic (C and G)	3	-	1	6	1	2
Clostridium spp.	4	1	2	4	1	1
Other Haemophilus spp.	-	1	1	1	1	-
Listeria monocytogenes	1	2	2	2	-	1
Yersinia enterocolitica	2	-	-	-	-	-
Other enterobacteria	6	3	5	4	8	10
Other gram-positive bacilli	1	2	2	2	3	2
Other gram-positive cocci	4	7	5	7	15	12
Other gram-negative bacteria	2	5	5	8	4	3
Other undefinable bacteria	-	1	-	-	-	-
<b>Fungi</b>						
Candida albicans	11	4	3	3	13	7
Other yeasts	4	3	1	2	9	10
Other fungi	-	-	3	1	1	-



Tabell 17

*Cerebrospinal fluid culture findings in 1995 – 2000*

Adults (≥ 15 year)

Microbe/microbe group	1995	1996	1997	1998	1999	2000
<b>Bacteria</b>						
Streptococcus pneumoniae	22	25	25	28	22	22
Other streptococci	2	13	3	6	6	9
Neisseria meningitidis	35	39	21	20	19	13
Staphylococcus aureus	1	13	9	14	15	12
Other staphylococci	7	15	13	31	36	34
Pseudomonas ssp.	-	-	4	3	5	5
Enterococcus	1	1	4	5	4	4
Escherichia coli	2	1	4	1	4	3
Diphtheroids and propionibacteria	-	1	1	8	3	5
Listeria monocytogenes	9	4	7	10	3	4
Haemophilus ssp.	-	2	5	3	3	3
Klebsiella ssp.	-	2	4	1	2	2
Enterobacter ssp.	1	-	2	2	1	1
Bacillus	-	-	1	2	1	3
Yersinia enterocolitica	-	-	-	-	1	-
Acinetobacter ssp.	-	-	3	2	1	-
Bacteroides ssp.	-	-	-	-	1	-
Fusobacterium ssp.	-	1	-	-	1	1
Salmonella ssp.	-	-	-	2	-	-
Mykobacteria	2	1	1	1	-	4
Stenotrophomonas maltophilia	1	-	-	-	-	-
Campylobacter ssp.	-	-	-	1	-	-
Capnocytophaga canimorsus	-	1	-	1	-	-
Other enterobacteria	1	-	1	-	1	2
Other gram-positive bacilli	2	1	-	-	-	-
Other gram-positive cocci	-	2	1	2	2	1
Other gram-negative bacteria	-	1	-	1	-	2
Other undefinable bacteria	-	-	-	-	-	-
<b>Fungi</b>						
Candida albicans	-	1	-	1	2	2
Other yeasts	1	1	-	-	2	1
Other fungi	-	-	-	1	-	-

Tabell 18

*Cerebrospinal fluid culture findings in 1995 – 2000*

Children (0-14 year)

<b>Microbe/microbe group</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Bacteria</b>						
<i>Neisseria meningitidis</i>	10	9	12	16	11	11
<i>Streptococcus pneumoniae</i>	12	8	4	7	11	3
Other streptococci	6	8	4	11	6	6
<i>Staphylococcus aureus</i>	3	2	7	3	2	2
Other staphylococci	2	8	6	8	14	12
<i>Enterococcus</i>	-	1	4	1	2	1
<i>Haemophilus influenzae</i>	3	-	-	3	2	2
Other <i>Haemophilus</i> spp.	-	1	-	-	-	-
<i>Escherichia coli</i>	-	1	2	3	1	1
<i>Salmonella</i> spp.	-	-	-	-	1	-
<i>Acinetobacter</i> spp.	-	-	2	-	1	-
<i>Bacteroides</i> spp.	-	-	-	-	1	-
<i>Listeria monocytogenes</i>	-	1	-	1	-	-
<i>Bacillus</i>	-	-	-	-	-	1
<i>Corynebacterium</i> spp.	-	-	-	-	-	1
<i>Klebsiella</i> spp.	-	-	-	-	-	1
<i>Citrobacter</i> spp.	-	-	1	2	-	-
<i>Pseudomonas</i> spp.	-	-	-	1	-	-
<i>Stenotrophomonas maltophilia</i>	-	1	-	-	-	-
Other gram-positive cocci	-	2	2	-	1	-
Other gram-negative bacteria	-	1	-	-	-	-
<b>Fungi</b>						
Other fungi	-	-	-	1	-	-

## **TABLES IN ANNEX**

Table in annex 1

**Cases notified to the Infectious Diseases Register by month in 2000**

Notifications by physicians and laboratories have been combined (\*) for category 1 and 2 infections, data for other microbes is based on laboratory notifications only.

	Total	January	February	March	April	May	June	July	August	September	October	November	December
<b>Respiratory pathogens</b>													
Adenovirus	451	35	53	58	51	46	20	26	24	15	37	55	31
Bordetella pertussis	839	62	75	50	74	110	97	80	68	60	40	63	60
Chlamydia pneumoniae	291	22	36	33	33	18	16	20	32	17	19	33	12
Influenza A virus	1471	880	430	75	16	3			1		1	16	49
Influenza B virus	41	8	2	10	12	4	3				1	1	1
Legionella*	7			2		1			1		1	1	1
Mycoplasma pneumoniae	740	37	38	46	33	50	36	41	61	86	95	107	110
Parainfluenza virus	263	22	14	16	29	30	27	28	5	18	21	24	29
Respiratory syncytial virus	1889	360	705	527	158	45	9	17	12	10	14	14	18
<b>Gastrointestinal pathogens</b>													
Calicivirus	367	40	72	80	60	39	43	2	4	13	1	7	6
Campylobacter	3527	191	191	243	197	240	204	737	477	246	275	285	241
Cryptosporidium	4							1	1	1			
Entamoeba histolytica	97	9	14	9	7	10	10	3	7	5	6	11	6
Escherichia coli EHEC*	17			2	1			4	6	1	3		
Giardia lamblia	221	14	21	28	13	15	23	10	28	14	22	13	20
Rotavirus	1437	63	195	296	352	245	134	57	19	10	10	17	39
Salmonella Paratyphi*	3	1	1		1								
Salmonella Typhi*	0												
Salmonella, others	2624	183	187	231	146	177	187	242	321	239	242	258	211
Shigella*	75	6	4	4	5	8	2	2	8	5	10	12	9
Yersinia	641	39	43	52	52	79	69	63	60	44	51	49	40
<b>Hepatitis pathogens</b>													
Hepatitis A virus*	51	2	4	4	3	5	2	5	8	5	3	5	5
Hepatitis B virus, acute*	238	24	27	13	20	32	21	18	16	18	24	13	12
Hepatitis B virus, chronic*	381	54	34	44	37	27	38	30	34	24	19	20	20
Hepatitis C virus, acute*	109	5	10	9	6	13	7	9	14	6	9	12	9
Hepatitis C virus, chronic*	1630	157	152	160	132	144	98	142	144	132	128	134	107
Hepatitis D virus	3								2				
Hepatitis E virus	1			1									
<b>STD pathogens</b>													
Chlamydia trachomatis	11731	888	923	969	767	967	880	973	1146	1159	1100	1085	874
HIV*	145	18	18	11	10	12	9	16	11	6	13	9	12
Neisseria gonorrhoeae*	284	23	24	27	25	27	32	16	22	19	19	25	25
Treponema pallidum*	204	14	16	13	11	21	17	16	26	25	21	10	14
<b>Mycobacteria</b>													
M. tuberculosis, pulmonary*	370	34	33	33	31	29	38	31	31	33	31	26	20
M. tuberculosis, non-pulmonary*	167	7	12	17	9	9	10	19	25	14	15	16	14
Mycobacterium, atypical*	434	35	39	38	32	29	37	30	39	36	39	43	3

	Total	January	February	March	April	May	June	July	August	September	October	November	December
<b>Resistant bacteria</b>													
Enterococcus, VRE	38	6	14	6	4	2	2	1	1	1	1	1	8
S. pneumoniae, Pen-R	64	10	4	12	8	6	5	1	4	4	4	2	2
Staphylococcus aureus, MRSA	261	22	11	18	15	11	43	27	30	19	18	36	11
<b>Other bacteria</b>													
Borrelia burgdorferi	895	28	25	15	22	51	72	77	139	161	136	114	55
Corynebacterium diphtheriae*	0												
Francisella tularensis	926		1					79	443	313	70	13	7
Haemophilus influenzae b	2	1	1					1					
Listeria*	18	2	2	1	1	2		1	1	1	4	4	
Neisseria meningitidis*	48	5	5	10	4	2	3	3	3	2	3	4	4
Streptococcus pyogenes, blood/CSF	116	14	12	10	11	11	7	7	10	10	7	8	9
<b>Other viruses</b>													
Coxsackie A	2							1					1
Coxsackie B	5					1			3		1		
Echovirus	11	1							5	4			1
Enterovirus	260	4	2	6	7	7	4	6	23	22	144	29	6
Parvovirus	224	16	9	29	21	35	38	15	15	7	13	18	8
Poliovirus*	0												
Puumalavirus	774	116	87	69	58	44	40	56	58	41	79	61	65
Mumps virus*	0												
Sindbisvirus	123		1			1	1	1	57	51	7	2	2
Tick-born encephalitis virus	41						4	8	11	9	4	5	
Morbillivirus*	2						1						1
Rubella virus*	0												
<b>Other parasites</b>													
Echinococcus*	0												
Plasmodium spp.*	38	5	3	5	2	1	2	7	2	2	2	3	4

Table in annex 2

Cases notified to the Infectious Diseases Register by healthcare district in 2000

Notifications by physicians and laboratories have been combined (\*) for category 1 and 2 infections, data for other microbes is based on laboratory notifications only.

	Total	HUS	VAR	SAT	KHÄ	PIR	PHÄ	KYM	EKA	ESA	ISA	PKA	PSA	KSU	EPO	VAA	KPO	PPO	KAI	LPO	LAP	AHV
<b>Respiratory pathogens</b>																						
Adenovirus	451	63	74	28	20	35	9	13	60	13	1	7	15	29	22	10	6	10	11	2	14	9
Bordetella pertussis	839	286	61	22	16	76	23	35	55	36	15	30	40	33	15	10	21	29	24	7	4	1
Chlamydia pneumoniae	291	25	35	13	8	17	2	1	2	2	9	13	106	4	22	8	17	3	4	2		
Influenza A virus	1471	223	252	91	118	148	5	109	167	80	87	21	23	15	12	7	8	32	40			
Influenza B virus	41	9	13																			
Legionella*	7	4	1																			
Mycoplasma pneumoniae	740	177	78	48	12	19	11	11	10	8	12	19	10	71	13	18	14	129	25	11	44	
Parainfluenza virus	263	47	73	12	4	13	5	4	1	10	1	4	38	2	7	2	3	26	5	4	2	
Respiratory syncytial virus	1889	693	154	100	74	151	51	76	47	20	18	40	71	50	77	19	28	119	34	10	52	5
<b>Gastrointestinal pathogens</b>																						
Calicivirus	367	149	69	9	6	28		13	16	1		10	6	8	12	3	4	1	2	21	9	
Campylobacter	3527	1550	295	129	75	322	129	96	72	34	28	61	156	134	88	69	30	168	26	19	30	16
Cryptosporidium	4	3						1														
Entamoeba histolytica	97	39	26		2	14	2		2	2		3	2		1	1	1	2	1	1	1	
Escherichia coli EHEC*	17	4	2					5					1	1		2	2					
Giardia lamblia	221	102	37	2	2	17	2	2	2	3	2	7	11	8	1	7	2	5	5	3	1	
Rotavirus	1437	240	56	92	78	264	79	72	37	23	27	29	38	119	117	20	50	3	39	15	33	6
Salmonella Paratyphi*	3	2	1																			
Salmonella Typhi*	0																					
Salmonella, others	2624	916	203	103	75	227	82	67	86	58	46	103	134	109	65	47	17	134	49	24	66	13
Shigella*	75	50	3	4	5						1	1	3	2				1	1	3	1	
Yersinia	641	269	43	26	11	38	16	23	9	2	3	17	25	34	13	22	12	43	11	5	13	6
<b>Hepatitis pathogens</b>																						
Hepatitis A virus*	51	26	3	1	3	3	1	3	2	1		1	4	2	1	2	1	2				
Hepatitis B virus, acute*	238	99	19	10	13	10	13	9	4	2	12	7	3	1	10	15	6	1	4			
Hepatitis B virus, chronic*	381	99	64	4	6	20	3	11	13	8	13	15	16	13	18	28	35	3	11	1		
Hepatitis C virus, acute*	109	35	16	3	4	4	3	5	5	1	2	3	13		3	1	6	3	2			
Hepatitis C virus, chronic*	1630	717	194	52	48	77	67	52	32	21	5	37	93	63	12	30	10	67	10	18	25	
Hepatitis D virus	3	2																				
Hepatitis E virus	1																					
<b>STD pathogens</b>																						
Chlamydia trachomatis	11731	3232	1068	487	325	1077	498	322	252	271	82	399	576	758	311	314	137	752	159	206	466	39
HIV*	145	95	5	2	4	13	1	2	3	1	1	2	5		2	1	4	3				
Neisseria gonorrhoeae*	284	115	31	5	1	20	13	10	19	3	1	22	15	6	1	2	11	5	1	3		
Treponema pallidum*	204	56	8	1	15	6	8	8	22	8	8	41	14	1	3	4		3	3			
<b>Mycobacteria</b>																						
M. tuberculosis, pulmonary*	370	105	44	17	11	25	12	13	10	8	9	9	19	12	16	12	3	25	11	2	6	1
M. tuberculosis, non-pulmonary*	167	40	19	9	9	12	8	4	4		1	9	11	6	6	9	2	12	3			
Mycobacterium, atypical*	434	130	60	23	6	29	11	10	15	12	3	9	35	22	17	7	1	30	4	4	4	2

Total HUS VAR SAT KHÄ PIR PHÄ KYM EKA ESA ISA PKA PSA KSU EPO VAA KPO PPO KAI LPO LAP AHV

	HUS	VAR	SAT	KHÄ	PIR	PHÄ	KYM	EKA	ESA	ISA	PKA	PSA	KSU	EPO	VAA	KPO	PPO	KAI	LPO	LAP	AHV
<b>Resistant bacteria</b>																					
Enterococcus, VRE	38	35	2												1						
S. pneumoniae, Pen-R	64	24	1	5	6		1	4	2	1						1	10	1	4	4	
Staphylococcus aureus, MRSA	261	77	16	2	18	6	1	5	28	10	19	10	3	3	3	5	6	21	31		
<b>Other bacteria</b>																					
Borrelia burgdorferi	895	252	90	18	8	3	5	29	4	10	9	4	53	4	9	19	10	1			367
Corynebacterium diphtheriae*	0																				
Francisella tularensis	926	47	7	45	8	17	1	11	1	1	1	9	134	167	22	40	409	1	3	2	
Haemophilus influenzae b	2	1													1						
Listeria*	18	7	1	2	1	2	1	2	1	1	1	1	1	1							1
Neisseria meningitidis*	48	11	3	1	2	10	3	2	1	1	3	1	2	1	2	1	4	1	4	1	1
Streptococcus pyogenes, blood/CSF	116	42	6	1	5	19	6	4	2	3	4	3	2	1	3	4	3	2	4	3	2
<b>Other viruses</b>																					
Coxsackie A	2	1																			
Coxsackie B	5	1																			3
Echovirus	11	6	1									4									
Enterovirus	260	9	201	11	1	16	5	2	1	1	1	1	1	1	3					4	4
Parvovirus	224	85	34	8	2	5	3	8	5	5	1	1	8	11	5	1	1	31	3	7	
Poliovirus*	0																				
Puumalavirus	774	69	13	14	19	81	22	5	9	23	34	36	39	92	24	21	24	138	35	26	49
Mumps virus*	0																				
Sindbisvirus	123	5	1	6	8	3	2	2	2	29	23	9	4							4	1
Tick-born encephalitis virus	41	5	4	1	1					1										2	1
Morbillivirus*	2	1	1																		23
Rubella virus*	0																				
<b>Other parasites</b>																					
Echinococcus*	0																				
Plasmodium spp. *	38	23	6		1				1	3					1						2

Abbrev.	Healthcare district	Population 31.12.2000	Abbrev	Healthcare district	Population 31.12.2000
HUS	Helsingin- and Uudenmaan hcd	1 389 270	VAR	Varsinais-Suomen hcd	452 622
SAT	Satakunnan hcd	230 793	KHÄ	Kanta-Hämeen hcd	165 307
PIR	Pirkanmaan hcd	448 400	PHÄ	Päijät-Hämeen hcd	206 833
KYM	Kymenlaakson hcd	182 948	EKA	Etelä-Karjalan hcd	129 646
ESA	Etelä-Savon hcd	106 628	ISA	Itä-Savon hcd	66 537
PKA	Pohjois-Karjalan hcd	173 316	PSA	Pohjois-Savon hcd	252 115
KSU	Keski-Suomen hcd	263 886	EPO	Etelä-Pohjanmaan hcd	195 992
VAA	Vaasan hcd	166 005	KPO	Keski-Pohjanmaan hcd	78 138
PPO	Pohjois-Pohjanmaan hcd	369 399	KAI	Kainuun hcd	85 736
LPO	Länsi-Pohjan hcd	68 557	LAP	Lapin hcd	123 211
AHV	Ahvenanmaa	25 776	<b>Total</b>		<b>5 181 115</b>

Population: Official Statistics of Finland 2001

## Table in annex 3

## Cases notified to the Infectious Diseases Register by province in 2000

Notifications by physicians and laboratories have been combined (\*) for category 1 and 2 infections, data for other microbes is based on laboratory notifications only.

District	Total	Etelä-Suomen	Länsi-Suomen	Itä-Suomen	Oulun	I-Lapin	Ahvenanmaa
Population 31.12.2000	5 181 115	2 081 507	1 835 836	591 093	455 135	191 768	25 776
<b>Respiratory pathogens</b>							
Adenovirus	451	165	204	36	21	16	9
Bordetella pertussis	839	415	238	121	53	11	1
Chlamydia pneumoniae	291	38	205	22	20	6	
Influenza A virus	1471	622	533	211	72	33	
Influenza B virus	41	15	14	7	4	1	
Legionella*	7	5	2				
Mycoplasma pneumoniae	740	222	261	48	154	55	
Parainfluenza virus	263	61	112	53	31	4	2
Respiratory syncytial virus	1889	941	579	149	153	62	5
<b>Gastrointestinal pathogens</b>							
Calicivirus	367	184	133	17	3	21	9
Campylobacter	3527	1924	1067	277	194	49	16
Cryptosporidium	4	4					
Entamoeba histolytica	97	43	42	7	3	1	1
Escherichia coli EHEC*	17	9	5	1	2		
Giardia lamblia	221	112	74	21	10	4	
Rotavirus	1437	506	718	117	42	48	6
Salmonella Paratyphi*	3	2	1				
Salmonella Typhi*	0						
Salmonella, others	2624	1232	771	335	183	90	13
Shigella*	75	50	15	5	1	4	
Yersinia	641	328	188	47	54	18	6
<b>Hepatitis pathogens</b>							
Hepatitis A virus*	51	32	14	2	2	1	
Hepatitis B virus, acute*	238	138	53	21	21	5	
Hepatitis B virus, chronic*	381	132	135	36	63	14	1
Hepatitis C virus, acute*	109	52	27	19	6	5	
Hepatitis C virus, chronic*	1630	916	438	156	77	43	
Hepatitis D virus	3	2	1				
Hepatitis E virus	1			1			
<b>STD pathogens</b>							
Chlamydia trachomatis	11731	4634	4152	1323	911	672	39
HV*	145	105	28	4	7	1	
Neisseria gonorrhoeae*	284	158	65	41	16	4	
Treponema pallidum*	204	95	31	69	6	3	
<b>Mycobacteria</b>							
M. tuberculosis, pulmonary*	370	151	129	45	36	8	1
M. tuberculosis, non-pulmonary*	167	65	63	21	15	3	
Mycobacterium, atypical*	434	172	159	59	34	8	2



Population 31.12.2000	Total	Etelä-Suomen	Länsi-Suomen	Itä-Suomen	Oulun	Lapin	Ahvenanmaa
	5 181 115	2 081 507	1 835 836	591 093	455 135	191 768	25 776
<b>Resistant bacteria</b>							
Enterococcus, VRE	38	35	3				
S. pneumoniae, Pen-R	64	25	13	7	11	8	
Staphylococcus aureus, MRSA	261	84	52	62	11	52	
<b>Other bacteria</b>							
Borrelia burgdorferi	895	299	143	75	11		367
Corynebacterium diphtheriae*	0						
Francisella tularensis	926	67	432	12	410	5	
Haemophilus influenzae b	2	1	1				
Listeria*	18	12	2	2	2		
Neisseria meningitidis*	48	19	18	5	5	1	
Streptococcus pyogenes, blood/CSF	116	59	32	12	7	6	
<b>Other viruses</b>							
Coxsackie A	2	1	1				
Coxsackie B	5	1	3	1			
Echovirus	11	11					
Enterovirus	260	18	232	2	4	4	
Parvovirus	224	103	65	15	34	7	
Poliovirus*	0						
Puumalavirus	774	128	269	128	173	75	1
Mumps virus*	0						
Sindbisvirus	123	10	33	54	25	1	
Tiek-born encephalitis virus	41	6	8	2	1	1	23
Morbilivirus*	2	1	1				
Rubella virus*	0						
<b>Other parasites</b>							
Echinococcus*	0						
Plasmodium spp.*	38	24	8	4	2		

**Table in annex 4**  
**Microbial findings notified by laboratories by month in 2000**

	Total	January	February	March	April	May	June	July	August	September	October	November	December
<b>Respiratory pathogens</b>													
Adenovirus	451	35	53	58	51	46	20	26	24	15	37	55	31
Bordetella pertussis	839	62	75	50	74	110	97	80	68	60	40	63	60
Chlamydia pneumoniae	291	22	36	33	33	18	16	20	32	17	19	33	12
Influenza A virus	1471	880	430	75	16	3			1			16	49
Influenza B virus	41	8	2	10	12	4	3					1	1
Legionella	7			2		1			1		1	1	1
Mycoplasma pneumoniae	740	37	38	46	33	50	36	41	61	86	95	107	110
Parainfluenzavirus	263	22	14	16	29	30	27	28	5	18	21	24	29
Respiratory syncytial virus	1889	360	705	527	158	45	9	17	12	10	14	14	18
<b>Gastrointestinal pathogens</b>													
Calicivirus	367	40	72	80	60	39	43	2	4	13	1	7	6
Campylobacter	3527	191	191	243	197	240	204	737	477	246	275	285	241
Cryptosporidium	4							1	1	1		1	
Entamoeba histolytica	97	9	14	9	7	10	10	3	7	5	6	11	6
Escherichia coli EHEC	17			2	1			4	6	1	3		
Giardia lamblia	221	14	21	28	13	15	23	10	28	14	22	13	20
Rotavirus	1437	63	195	296	352	245	134	57	19	10	10	17	39
Salmonella Paratyphi	3	1	1		1								
Salmonella Typhi	0												
Salmonella, others	2624	183	187	231	146	177	187	242	321	239	242	258	211
Shigella	75	6	4	4	5	8	2	2	8	5	10	12	9
Vibrio cholerae	0												
Yersinia	641	39	43	52	52	79	69	63	60	44	51	49	40
<b>Hepatitis pathogens</b>													
Hepatitis A virus	51	2	4	4	3	5	2	5	8	5	3	5	5
Hepatitis B virus	529	55	57	48	47	52	51	42	44	38	40	27	28
Hepatitis C virus	1699	155	159	167	135	156	103	144	155	134	135	144	112
Hepatitis D virus	3								2				
Hepatitis E virus	1			1									1
<b>STD pathogens</b>													
Chlamydia trachomatis	11731	888	923	969	767	967	880	973	1146	1159	1100	1085	874
HIV	145	18	18	11	10	12	9	16	11	6	13	9	12
Neisseria gonorrhoeae	271	23	23	27	24	27	32	13	21	17	18	23	23
Treponema pallidum	198	14	15	13	11	21	15	16	26	25	20	10	12
<b>Mycobacteria</b>													
Mycobacterium tuberculosis	450	34	39	45	31	36	38	41	47	41	34	38	26
Mycobacterium, atypical	409	33	39	35	30	27	34	30	36	34	36	41	34
<b>Resistant bacteria</b>													
Enterococcus, VRE	38	6	14	6	4	2	2	1	1	1	1	1	1
S. pneumoniae (Pen I)	236	19	23	35	15	25	21	6	7	13	32	14	26
S. pneumoniae (Pen R)	64	10	4	12	8	6	5	1	4	4	4	2	8
Staphylococcus aureus, MRSA	261	22	11	18	15	11	43	27	30	19	18	36	11

	Total	January	February	March	April	May	June	July	August	September	October	November	December
<b>Other bacteria</b>													
<i>Borrelia burgdorferi</i>	895	28	25	15	22	51	72	77	139	161	136	114	55
<i>Corynebacterium diphtheriae</i>	0												
<i>Francisella tularensis</i>	926		1				79	443	313	70	13	7	
<i>Haemophilus influenzae</i> b	2		1				1						
<i>Listeria monocytogenes</i>	17	2	1	1	1	2		1	1	4	4	4	
<i>Neisseria meningitidis</i>	48	5	5	10	4	2	3	3	3	2	3	4	4
<i>Streptococcus pyogenes</i> , blood/CSF	116	14	12	10	11	11	7	7	10	10	7	8	9
<b>Other viruses</b>													
Coxsackie A	2							1					1
Coxsackie B	5					1			3		1		
Echovirus	11	1							5	4			1
Enterovirus	260	4	2	6	7	7	4	6	23	22	144	29	6
Parvovirus	224	16	9	29	21	35	38	15	15	7	13	18	8
Poliovirus	0												
Puumalavirus	774	116	87	69	58	44	40	56	58	41	79	61	65
Mumps virus	0												
Sindbisvirus	123		1			1	1	1	57	51	7	2	2
Tick-born encephalitis virus	41						4	8	11	9	4	5	
Morbillivirus	2						1						1
Rubella virus	0												
<b>Other parasites</b>													
Echinococcus	0												
Plasmodium spp.	38	5	3	5	2	1	2	7	2	2	2	3	4