



2007 saw 28 notified cases of acute hepatitis A infection; 15 females and 13 males. This marks an all time low since surveillance was initiated in 1980, EPI-NEWS 40/07.

Occurrence

The majority of cases (61%) were notified in the Copenhagen Region, [Table 1](#).

Table 1. Notified hepatitis A cases by area, and incidence per 10⁵, 2007

Area	No.	Incidence
Copenhagen city	9	1.4
Copenhagen subs	5	1.0
Northern Zealand	3	0.7
Bornholm	0	0.0
Eastern Zealand	1	0.4
W & S Zealand	2	0.3
Funen	1	0.2
Southern Jutland	1	0.1
Western Jutland	0	0.0
Eastern Jutland	3	0.4
Northern Jutland	2	0.3
Other/not stated	1	-
Total	28	0.5

Of all the patients, 12 (43%) were immigrants, and among these, nine (75%) were < 20 years old. Among the 16 Danish-born patients, three (19%) were < 20 years old. The age distribution is shown in [Table 2](#).

Table 2. Notified hepatitis A cases by age and origin, and incidence per 10⁵, 2007

Age (yrs)	Danish born	Immigrants	Total	Incidence
0-9	2	4	6	0.9
10-19	1	5	6	0.9
20-29	4	2	6	0.9
30-39	2	1	3	0.4
40-49	3	0	3	0.4
50-59	1	0	1	0.1
60+	3	0	3	0.3
Total	16	12	28	0.5

Mode of infection

A total of 16 persons were infected in Denmark, including four by a household member, one by a non-household family member, one by a child in an institution, one by an IV drug abuser, one by other personal contact and one possibly through ingestion of mussels. In seven cases, the source of infection was unknown. A total of 11 cases were infected abroad, [Table 3](#).

HEPATITIS A 2007

Table 3. Notified hepatitis A cases in Denmark by origin and place of infection, 2007

	Place of infection			Total
	DK	Abroad	Unkn	
Danes	12	4	0	16
Immigrants	4	7	1	12
Total	16	11	1	28

Two Danish-born cases were infected in Turkey, one in Uzbekistan and one in Gambia. The seven immigrants who were infected abroad were from six countries (Iran, Morocco, Pakistan, Syria, Turkey and Germany).

Outbreaks

Four outbreaks each counting two to three cases were recorded.

Two family members were infected by the daughter of the family, which was verified by identical virus genotyping. The source of infection for the daughter remains unknown.

A boy who was infected in Iraq infected his younger brother after returning to Denmark. Another boy, who was infected in Pakistan, infected his cousin after returning. The cousin occasionally lived at the boy's family. One woman, who was infected in Denmark, infected her husband.

Virus typing

Since the end of 2006, virus typing of patients diagnosed with hepatitis A has been performed routinely. Hepatitis A IgM-positive serum tests from Danish laboratories are sent to the Department of Virology, Statens Serum Institut and examined by PCR. Positive findings are genotyped by sequential typing. In 2007, typing results for 21 cases were available; 14 notified and 7 not notified. They detected types 1A (3), 1B (11) and 3A (7) match epidemiological information on the country of infection. The finding of completely identical sequences in several patients facilitated confirmation of a common source or chain of infection in several cases.

Commentary

The decrease in the number of notification observed in 2007 mainly occurred among immigrants and immigrant children. Considerably fewer were infected during visits to their countries of origin.

This is possible the effect of increased attention in many immigrant families to the expediency of vaccinating (particularly) children in Denmark before travelling to endemic areas.

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HEPATITIS E

In the 2002-2007 period, one to eight cases of acute hepatitis E infection have been detected annually. During the first seven months of 2008, a total of 10 cases of acute hepatitis E have been detected in Denmark. In six of these cases relevant travel history was found: Nepal, India, Peru, Pakistan and one case of travels to the Arabic peninsula and the Far East. Four of the cases were presumably infected in Denmark.

Commentary

Hepatitis E infection cannot be distinguished from other types of viral hepatitis. The mode of infection is faecal-oral and incubation time ranges from 15 to 64 days. Hepatitis E is endemic in parts of Asia, Africa and Central America and major outbreaks are not uncommon. This is probably due to contaminated water supply.

In Denmark, hepatitis E is considered a rare, imported condition.

However, some cases of hepatitis E with no relevant travel history have recently been reported from several western countries. Characterisation of virus from these cases has shown a different type (type 3) than the imported cases, which are most frequently of type 1.

Until 2006 only patients with a relevant travel history to endemic areas were tested for hepatitis E.

Following findings of hepatitis E cases in European countries, the procedures at Statens Serum Institut were changed and now all samples sent for "Acute hepatitis testing" are tested for hepatitis E. The finding of hepatitis E virus in Danish patients with no relevant travel history, underlines that hepatitis E should be considered when investigating patients with symptoms of acute hepatitis, regardless of travel history. (H.H. Larsen, B. Böttiger, Department of Virology)

Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 39 2008	Cum. 2008 ¹⁾	Cum. 2007 ¹⁾
AIDS	0	28	42
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	1	0
Creutzfeldt-Jakob	0	2	9
Diphtheria	0	0	0
Food-borne diseases	25	631	485
of these, infected abroad	2	106	93
Gonorrhoea	5	294	279
Haemorrhagic fever	0	0	0
Hepatitis A	5	35	19
of these, infected abroad	1	13	9
Hepatitis B (acute)	0	18	22
Hepatitis B (chronic)	0	140	255
Hepatitis C (acute)	0	6	5
Hepatitis C (chronic)	31	351	482
HIV	6	180	219
Legionella pneumonia	5	94	82
of these, infected abroad	0	31	21
Leprosy	0	0	0
Leptospirosis	0	2	10
Measles	0	10	2
Meningococcal disease	1	41	57
of these, group B	1	17	32
of these, group C	0	12	18
of these, unspec. + other	0	12	7
Mumps	1	22	5
Neuroborreliosis	1	40	71
Ornithosis	0	2	7
Pertussis (children < 2 years)	1	81	59
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	2	2
Listeria monocytogenes	0	1	8
Streptococcus pneumoniae	0	68	83
Other aethiology	0	17	12
Unknown aethiology	0	16	12
Under registration	0	8	-
Rabies	0	0	0
Rubella (congenital)	0	2	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	62	163
of these, infected abroad	2	51	33
Syphilis	3	102	73
Tetanus	0	1	2
Tuberculosis	10	305	300
Typhoid/paratyphoid fever	0	27	17
of these, infected abroad	0	21	16
Typhus exanthematicus	0	0	2
VTEC/HUS	4	114	121
of these, infected abroad	2	37	38

¹⁾ Cumulative number 2008 and in corresponding period 2007

Selected laboratory diagnosed infections

Number of specimens, isolates, and/or notifications received in SSI laboratories

Table 2	Week 39 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
Bordetella pertussis (all ages)	2	150	149
Gonococci	7	277	271
of these, females	2	57	41
of these, males	5	220	230
Listeria monocytogenes	1	37	41
Mycoplasma pneumoniae			
Resp. specimens ³⁾	1	61	279
Serum specimens ⁴⁾	0	65	333
Streptococci ⁵⁾			
Group A streptococci	0	112	89
Group B streptococci	0	93	73
Group C streptococci	0	14	16
Group G streptococci	0	100	90
S. pneumoniae	17	699	776
Table 3	Week 37 2008	Cum. 2008 ²⁾	Cum. 2007 ²⁾
MRSA	16	492	436
Pathogenic int. bacteria ⁶⁾			
Campylobacter	26	2164	2986
S. Enteritidis	18	441	400
S. Typhimurium	58	1475	250
Other zoon. salmonella	22	733	551
Yersinia enterocolitica			
Verocytotoxin- producing E. coli	0	205	206
Enteropathogenic E. coli	4	111	120
Enterotoxigenic E. coli	10	159	140
Enterotoxigenic E. coli	10	256	213

²⁾ Cumulative number 2008 and in corresponding period 2007

³⁾ Resp. 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