



2009 saw 45 notified cases of acute hepatitis A infection; 21 males and 24 females. Due to a cluster, the largest share (20%) was notified from West Jutland, where the highest incidence was also recorded, [Table 1](#).

**Table 1. Notified hepatitis A cases, by area and incidence, per 10<sup>5</sup>, 2009**

Area	No.	Incidence
Copenhagen city	6	0.9
Copenhagen subs	6	1.2
North Zealand	3	0.7
Bornholm	0	0.00
East Zealand	3	1.3
W & S Zealand	4	0.7
Funen	2	0.4
South Jutland	5	0.7
West Jutland	9	2.1
East Jutland	5	0.6
North Jutland	1	0.2
Other/not stated	1	-
<b>Total</b>	<b>45</b>	<b>0.8</b>

A total of 17 cases with foreign origin (immigrants and descendants of immigrants) were recorded, including 12 (71%) < 20 years of age. Furthermore, 28 of Danish origin were reported, including four (14%) < 20 years of age.

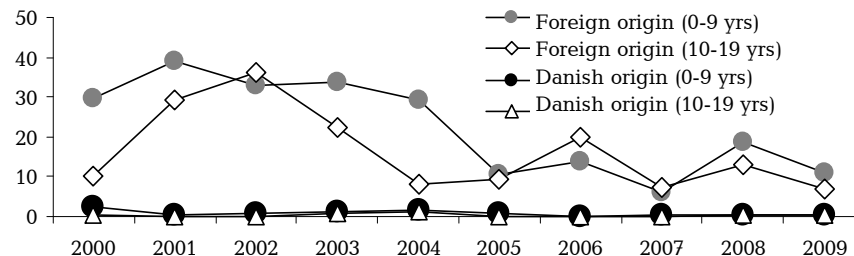
### Mode of transmission and place of infection

In 13 of the 16 notified persons infected in Denmark, the source of infection was stated as unknown. Two were infected via fruit and vegetables and one via another type of food. Among 22 of the 29 infected abroad, the source of infection was stated as unknown, four were reportedly infected by household members, one by shellfish and another two by other types of food. A total of 13 (46%) of the cases of Danish origin and 16 (94%) of foreign origin were infected abroad. Three infectees of Danish origin were reportedly infected in Egypt, three in Italy, two in Poland and one in each of the following countries: Greece, Croatia, Peru and South Africa. In one case, the country of infection was unknown. Six persons of foreign origin were infected in Lebanon, five in Pakistan, three in Morocco, one in Poland and one in Syria.

### Virus typing

Since 2006, hepatitis A virus (HAV) typing has been performed routinely, as positive HAV IgM serum specimens are forwarded to the Department of Virology, SSI, for PCR testing. PCR positive specimens are sequenced.

**HEPATITIS A 2009**  
**Figure 1. Incidence per 10<sup>5</sup> of notified hepatitis A in Denmark, among persons < 20 years, by origin and age, 2000-2009**



In 2009, specimens were received from 22 (49%) cases, among whom 21 tested positive by PCR. Furthermore, specimens were received from 25 non-notified cases of which seven tested positive by PCR. The detected virus types - IA (10), IB (10) and IIIA (1) - were in accordance with epidemiological information on country of infection.

### Outbreaks

A total of five outbreaks were reported: two siblings were infected following a family visit to Morocco, two siblings were infected following a family visit to Pakistan, three family members were infected following a tourist journey to Egypt, and for two members of the same family, the place of infection remained unknown.

HAV genotyping confirmed three of the notified outbreaks by detection of identical HAV in the patients. Identical genotypes raised suspicion of another two outbreaks counting a total of seven cases.

### Hepatitis A cases 2000-2009

In the ten-year period 2000-2009, a total of 747 cases of acute hepatitis A infection were notified. The majority of cases observed among persons of Danish origin occurred in 2004 (200/447 cases) due to a major outbreak among males who had sex with males, EPI-NEWS 52/04. A total of 300 (40%) of the notified patients occurred in persons of foreign origin. One quarter of the cases in persons of Danish origin and 3/4 of the cases in persons of foreign origin occurred abroad, [Table 2](#). Persons aged < 20 years comprised 17% of the cases occurring among persons of Danish origin, and 81% of the cases among persons of foreign origin, [Table 3](#).

The incidence among persons of foreign origin < 20 years of age decreased throughout the period, but, nevertheless, remains markedly higher than that of persons of Danish origin, [Figure 1](#).

**Table 2. Notified Hepatitis A cases in Denmark by origin and place of infection, 2000-2009**

Origin	Place of infection		
	DK	Abroad	Total
Danish	340	107	447
Foreign	75	225	300
<b>Total</b>	<b>415</b>	<b>332</b>	<b>747</b>

**Table 3. Cases notified with hepatitis A infection, by origin, age and incidence per 10<sup>5</sup> inhabitants in (), 2000-2009**

Age (yrs)	DK	Abroad	Total
0-9	52 (0.8)	147 (22.5)	199 (2.9)
10-19	23 (0.4)	96 (16.3)	119 (1.9)
20-29	57 (1.0)	28 (3.4)	85 (1.3)
30-39	92 (1.3)	21 (2.5)	113 (1.4)
40-49	89 (1.3)	6 (0.9)	95 (1.2)
50-59	78 (1.1)	2 (0.5)	80 (1.1)
60+	56 (0.5)	0 (0.0)	56 (0.5)
<b>Total</b>	<b>447</b>	<b>300</b>	<b>747</b>

### Commentary

The number of notified cases has remained unchanged since 2008 (43 cases), EPI-NEWS 42/09, and the incidence continues at a historically low level. Among the notified cases, the primary group was children and adolescents of foreign origin. In most cases, immigrant children raised in Denmark will not have been exposed to HAV infection and are therefore susceptible to infection. Later years have seen a decrease in the number of infections observed among persons of foreign origin, a trend which is probably the result of the decrease in hepatitis A occurrence seen in a number of other countries. Increased focus on hepatitis A vaccination prior to relevant travels may also have contributed to the observed decrease.

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### MYCOPLASMA PNEUMONIAE

The current increase: See next page.

## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2010 figures are preliminary)

Table 1	Week 39 2010	Cum. 2010 <sup>1)</sup>	Cum. 2009 <sup>1)</sup>
AIDS	1	39	29
Anthrax	0	0	0
Botulism	0	1	0
Cholera	0	0	0
Creutzfeldt-Jakob	1	14	7
Diphtheria	0	0	0
Food-borne diseases	9	312	419
of these, infected abroad	1	71	77
Gonorrhoea	13	374	426
Haemorrhagic fever	0	0	0
Hepatitis A	1	45	29
of these, infected abroad	0	24	22
Hepatitis B (acute)	3	22	21
Hepatitis B (chronic)	4	149	124
Hepatitis C (acute)	0	2	4
Hepatitis C (chronic)	3	310	235
HIV	5	211	196
Legionella pneumonia	2	93	98
of these, infected abroad	0	22	20
Leprosy	0	0	0
Leptospirosis	0	4	0
Measles	0	4	9
Meningococcal disease	0	53	62
of these, group B	0	22	36
of these, group C	0	16	21
of these, unspec. + other	0	15	5
Mumps	0	27	11
Neuroborreliosis	1	28	33
Ornithosis	0	12	10
Pertussis (children < 2 years)	1	71	88
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	5
Listeria monocytogenes	0	5	4
Streptococcus pneumoniae	1	57	65
Other aethiology	0	14	10
Unknown aethiology	0	18	20
Under registration	1	6	0
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	70	85
of these, infected abroad	1	53	68
Syphilis	11	309	188
Tetanus	0	0	0
Tuberculosis	9	299	270
Typhoid/paratyphoid fever	0	30	20
of these, infected abroad	0	28	18
Typhus exanthematicus	0	0	0
VTEC/HUS	2	117	114
of these, infected abroad	0	29	23

<sup>1)</sup> Cumulative number 2010 and in corresponding period 2009

## Selected laboratory diagnosed infections

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

Table 2	Week 39 2010	Cum. 2010 <sup>3)</sup>	Cum. 2009 <sup>3)</sup>
Bordetella pertussis (all ages)	3	160	168
Gonococci	9	311	328
of these, females	5	81	91
of these, males	4	230	237
Listeria monocytogenes	2	39	63
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	47	184	50
Serum specimens <sup>4)</sup>	12	176	86
Streptococci <sup>5)</sup>			
Group A streptococci	4	130	113
Group B streptococci	5	85	88
Group C streptococci	0	47	29
Group G streptococci	1	133	134
S. pneumoniae	13	763	784
Table 3	Week 37 2010	Cum. 2010 <sup>2)</sup>	Cum. 2009 <sup>2)</sup>
MRSA	85	721	529
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	111	2783	2422
S. Enteritidis	13	270	439
S. Typhimurium	10	437	657
Other zoon. salmonella	8	490	538
Yersinia enterocolitica	2	143	174
Verocytotoxin- producing E. coli	3	141	114
Enteropathogenic E. coli	7	148	152
Enterotoxigenic E. coli	4	324	243

<sup>2)</sup> Cumulative number 2010 and in corresponding period 2009

<sup>3)</sup> Resp. specimens with positive PCR

<sup>4)</sup> Serum specimens with pos. complement fixation test

<sup>5)</sup> Isolated in blood or spinal fluid

<sup>6)</sup> See also [www.germ.dk](http://www.germ.dk)

### Mycoplasma pneumoniae cases: Increase

The number of specimens that test positive for Mycoplasma pneumoniae by PCR has increased considerably as from the month of August 2010. In Week 39 alone, Statens Serum Institut detected a total of 47 positives among 295 tested specimens (16%), see Table 2 above. This is the highest number of positive specimens recorded since December 2005.

It has been six years since the last epidemic in Denmark (EPI-NEWS 42-43/04, 51/04 and 10/05), and in the 2007-2009, period the incidence has been very low.

The SSI primarily receives specimens from the Capital Region and to some extent from Zealand and Central Jutland; we therefore cannot currently de-termined with any certainty if we are on the brink of a national epidemic, but developments are being followed closely.

Symptoms, diagnosis and treatment will be described further in EPI-NEWS in week 41.

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