



INFLUENZA SEASON 2006-2007

Influenza sentinel surveillance commenced in week 40, 2006. This season, an average of 120 GPs have reported weekly.

This very satisfactory level of reporting is at par with that of the previous four seasons. We would therefore like to take this opportunity to thank the participating doctors for their efforts.

The Danish influenza activity remained low up to week 4, 2007, after which it gradually increased until week 9 when it had reached a level corresponding to an incipient influenza epidemic. Next, influenza activity declined to the level expected for the season.

During the same period, the SSI influenza laboratory has tested secretion specimens for influenza virus. Among the specimens tested, 302 were submitted by the sentinel doctors. Positive findings with virus strain typing are shown in [Table 1](#).

Table 1. Confirmed influenza virus by sender and virus strain, 2006-2007 season

	Virus strain		
	A (H3N2)	A (H1N1)	B
Sentinel	141	9	0
Other	250	4	3
Total	391	13	3

In the 2006-2007 season, 141 influenza A H3N2 virus were diagnosed via the sentinel surveillance system. The following subtypes were identified: Wisconsin/67/2005 and California/7/2004. Furthermore, nine influenza A H1N1 virus were found. Two of the influenza A virus were not sub-typed. The influenza virus found were all covered by this year's influenza vaccine.

Vaccination coverage

The SSI has sold 680,000 doses of influenza vaccine. Data from the Danish Ministry of the Interior and Health show that 54% of persons over the age of 65 accepted free influenza vaccination in the autumn of 2006. In comparison, nearly 55% accepted free influenza vaccination in the autumn of 2005. Vaccination coverage was highest in Aarhus County (66%) and in the Copenhagen Municipality (62%). In the remaining Danish counties, coverage reached 50-57%.

Next season, the scheme currently providing free influenza vaccination to persons above the age of 65 years

will be extended to persons below the age of 65 years who are chronically ill or on early retirement.

Influenza vaccine 2007-2008

On the basis of the strains in circulation during the 2006-2007 season, the WHO decided, in March 2007, to change the vaccine composition for the coming season (2007-2008) to the following:

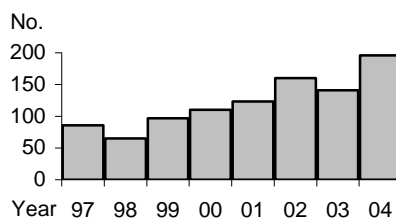
- A/Solomon Islands/3/2006(H1N1)-like virus
 - A/Wisconsin/67/2005(H3N2)-like virus
 - B/Malaysia/2506/2004-like virus.
- (S. Glismann, A.H. Christiansen, Department of Epidemiology, L.P. Nielsen, Influenza Laboratory)

CLOSTRIDIUM DIFFICILE

Clostridium difficile is a spore-forming bacterium which is generally not pathogenic. However, some strains produce toxins and these may cause diarrhoea. *Cl. difficile*-associated diarrhoea (CDAD) varies from mild to severe cases. The severe diarrhoea cases are frequently antibiotic or hospital associated, or pseudomembranous colitis found in already impaired patients.

In Denmark, the CDAD occurrence has increased in recent years, [Fig.1](#).

Figure 1. Discharges with DA 047 as primary diagnosis (Enterocolitis caused by *Cl. difficile*), National Patient Registry, 1997-2004



Reports from Europe and North America have drawn attention to a recently discovered strain of *Cl. difficile* that may be characterized as PCR ribotype 027, toxinotype III (CD027). This strain has an increased pathogenic capacity, possibly a higher infectious potential and a special resistance profile. The increased pathogenicity may be associated with an increased production of the well-known toxins caused by a change in a regulatory gene, and with the fact that the strain also produces a binary toxin CDT. Abroad, this strain has caused severe CDAD outbreaks in hospital environments, but has also been described as the cause of outbreaks and sporadic cases outside hospitals.

First detection of CD027 in Denmark

In connection with a retrospective survey of received *Cl. difficile* isolates, it has now been demonstrated that CD027 occurs in Denmark. In the period from November 2006 to March 2007, a total of seven CD027 cases were found: Six patients were admitted to a small hospital in Region South, while the final patient was admitted to another hospital in the same region. All patients were admitted with severe infection of the respiratory tract and the majority was administered a broad-spectrum antibiotic.

Commentary

It is not known with certainty why the number of patients discharged after having CDAD is increasing, and the cases diagnosed probably only comprise a modest fraction of the real number of cases. The changes in the strains' pathogenicity, including the arrival of CD027, may be contributing factors. Other circumstances may also be of importance e.g., the increased use of broad-spectrum antibiotics, the lower priority given to hospital cleaning, the changes observed in the composition of the population and increased focus on the issue. As *Cl. difficile* spores may survive for considerable periods of time in hospital environments and are not inactivated by hand disinfectants, etc., CDAD represents a challenge to hospital hygienic standards.

To monitor the situation in Denmark, the SSI has asked Danish departments of clinical microbiology to continuously report *Cl. difficile* findings and to forward isolates for typing on suspicion of an outbreak or severe disease. To prevent spreading, it is essential to focus on hospital hygiene and promote rational antibiotic policies, including the limitation of unnecessary use of broad-spectrum antibiotics such as fluoroquinolones and cephalosporines, EPI-NEWS 43/05.

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Summer holidays

Unless special circumstances arise, EPI-NEWS will not be published during weeks 27-32.

The Department of Epidemiology wishes readers a pleasant summer.

Individually notifiable diseases

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

Table 1	Week 25 2007	Cum. 2007 ¹⁾	Cum. 2006 ¹⁾
AIDS	1	28	25
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	1	5	6
Diphtheria	0	0	0
Food-borne diseases	7	239	180
of these, infected abroad	0	39	46
Gonorrhoea	12	178	216
Haemorrhagic fever	0	0	0
Hepatitis A	0	14	10
of these, infected abroad	0	6	3
Hepatitis B (acute)	0	13	10
Hepatitis B (chronic)	7	137	201
Hepatitis C (acute)	0	2	6
Hepatitis C (chronic)	4	163	303
HIV	7	135	100
Legionella pneumonia	4	43	44
of these, infected abroad	3	9	10
Leprosy	0	0	0
Leptospirosis	0	6	5
Measles	0	1	24
Meningococcal disease	3	42	49
of these, group B	0	22	25
of these, group C	3	14	8
of these, unspec. + other	0	6	16
Mumps	0	4	8
Neuroborreliosis	0	32	16
Ornithosis	1	4	8
Pertussis (children < 2 years)	0	33	26
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	1
Listeria monocytogenes	0	6	4
Streptococcus pneumoniae	2	68	51
Other aethiology	2	9	2
Unknown aethiology	0	8	13
Under registration	2	7	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	1	28	26
of these, infected abroad	1	18	22
Syphilis	2	51	36
Tetanus	0	0	1
Tuberculosis	13	195	182
Typhoid/paratyphoid fever	0	6	14
of these, infected abroad	0	6	14
Typhus exanthematicus	0	2	0
VTEC/HUS	4	71	55
of these, infected abroad	0	22	13

¹⁾ Cumulative number 2007 and in corresponding period 2006

Selected laboratory diagnosed infections

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

Table 2	Week 25 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Bordetella pertussis (all ages)	7	77	119
Gonococci	8	169	217
of these, females	1	22	41
of these, males	7	147	176
Listeria monocytogenes	0	23	17
Mycoplasma pneumoniae			
Resp. specimens ³⁾	2	237	235
Serum specimens ⁴⁾	4	281	212
Streptococci ⁵⁾			
Group A streptococci	2	68	91
Group B streptococci	4	49	49
Group C streptococci	0	10	13
Group G streptococci	3	60	66
S. pneumoniae	10	624	622
Table 3	Week 23 2007	Cum. 2007 ²⁾	Cum. 2006 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	85	1159	807
S. Enteritidis	4	164	142
S. Typhimurium	7	124	108
Other zoon. salmonella	14	286	213
Yersinia enterocolitica	4	127	74
Verocytotoxin- producing E. coli	0	67	49
Enteropathogenic E. coli	8	67	83
Enterotoxigenic E. coli	1	82	85

²⁾ Cumulative number 2007 and in corresponding period 2006

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

27 June 2007