



2005 saw a total of 129 notified cases of children with whooping cough: 59 boys and 70 girls. Reminders were sent out for 37% of the notifications. Whooping cough is notifiable in children < 2 years of age, when the case is laboratory confirmed. The annual incidence for children < 2 years was 99 per 10<sup>5</sup>. At county level, the incidence varied considerably, [Table 1](#).

**Table 1. Notified cases of whooping cough and incidence per 10<sup>5</sup> in children < 2 years, by county, 2005**

County	No.	Incidence per 10 <sup>5</sup>
Cph. Municipality	14	97
Frb. Municipality	4	146
Copenhagen	9	61
Frederiksborg	12	134
Roskilde	3	52
West Zealand	6	88
Storstrøm	5	97
Bornholm	2	264
Funen	18	169
South Jutland	3	54
Ribe	3	58
Vejle	7	77
Ringkøbing	15	220
Aarhus	19	114
Viborg	3	54
North Jutland	6	54
<b>Total</b>	<b>129</b>	<b>99</b>

Most notifications (42%) were made in the period January to March. The age distribution was as follows: 51 children (40%) were < 3 months, 30 (23%) were 3-4 months, 34 (26%) were 5-11 months and 14 (11%) were 12-24 months. Most of the notified cases were detected by PCR alone. Since its introduction as a routine diagnostic method in 1998, the proportion of notified cases confirmed by this method has increased from 32% in 1998 to 88% in 2005.

### Sources of infection

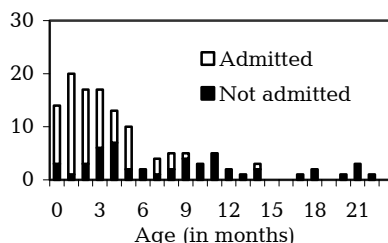
The source of infection was unknown for nearly half (48%) of the notified cases among children. Siblings constituted 30%, other family members 12%, other known persons 5%, infection in child-care institutions 3%, and whooping cough in the environment 2%.

### Admission and sequelae

The proportion of children under 6 months who were admitted because of whooping cough equalled the 2004 level (76%). Eight children < 6 months were admitted to hospital, [Figure 1](#). A five-week-old child died as a consequence of whooping cough infection, EPI-NEWS 33/05.

## WHOOPIING COUGH 2005

**Figure 1. Notified cases of whooping cough in children < 2 years, by age and hospital admission, 2005**



### Vaccination status

Vaccination was shown to prevent hospital admission, [Table 2](#). In a supplementary analysis, admission risk was found not to depend on age.

**Table 2. Notified cases of whooping cough in children < 2 years, by vaccination status and hospital admission, 2005**

Vaccination status	Total No.	Admitted	
		No.	%
0 times	64	52	81
1 time	26	16	62
2 times	28	8	29
3 times	10	0	0
Unknown	1	1	100
<b>Total</b>	<b>129</b>	<b>77</b>	<b>60</b>

### Commentary

In 2005, the whooping cough incidence in children < 2 years was considerably lower than in 2004 (228 cases). The incidence continued to be low in 2006 where 34 cases have been notified compared with 113 at the same time in 2005. Whooping cough normally occurs cyclically, with epidemics occurring every 3-5 years. The latest whooping cough epidemic occurred in 2002. The current low incidence may reflect this variation, but the possible effect of a whooping cough booster introduced in the autumn of 2003 is also currently being assessed.

(A.H. Christiansen, P.H. Andersen, Department of Epidemiology)

## TWO TETANUS CASES

In the first half of 2006, two tetanus cases were notified:

### Patient 1.

A male born in 1919 had fallen three weeks prior to admission and had a large wound on his right hand. No tetanus prophylaxis was given when the wound was treated initially. For five-six days prior to admission, the patient had progressive trismus. On admission, the patient was awake, alert and oriented but had severe trismus as he was only able to open

his mouth 2/3 with difficulty. The muscles of the jaw and shoulder yoke were sore and the abdominal wall muscles taut.

The patient was treated with tetanus immunoglobulin and frequent doses of diazepam intravenously. He was discharged after 20 days' admission. The patient could not recall having received tetanus vaccination previously.

### Patient 2.

A female born in 1948 had her foot injured by a trailer causing a deep wound across the instep of one foot five days prior to admission. The wound was primarily revised and sutured, and a tetanus vaccine was given, but no tetanus immunoglobulin was administered. In spite of the antibiotic treatment, the wound deteriorated. The patient presented with trismus five days after the accident and immediately after administration of tetanus immunoglobulin the patient was transferred to an infectious diseases ward, where she was awake, alert and orientated, but had total trismus. Only a slight stiffness of the shoulder yoke was found, and the abdominal wall muscles were soft. Tetanus immunoglobulin and diazepam were administered intravenously. Over a course of two days, the patient developed opisthotonus in connection with minimal provocation and an elevated heart rhythm reaching 140/min. Subsequently, the patient was treated on a ventilator. Over the course of the first two days, arrhythmia was observed in the form of nodal bradycardia and episodes of premature ventricular beats which were treated with magnesium infusions. After six weeks on the ventilator, the patient was discharged from the intensive care unit for continued rehabilitation. In childhood, the patient had been vaccinated against diphtheria, but had not previously been vaccinated against tetanus.

### Commentary

The two case stories stress the importance of ensuring tetanus immunity in patients with wound injury. Particularly patients born before 1950 may not have received a primary tetanus vaccination series. For a detailed presentation of tetanus prophylaxis in connection with wound injury, see EPI-NEWS 07/04. (E. Petersen, Aarhus University Hospital, L. Kristensen, J. Prag, Viborg Hospital, A. H. Christiansen, Department of Epidemiology)

## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2006 figures are preliminary)

Table 1	Week 46 2006	Cum. 2006 <sup>1)</sup>	Cum. 2005 <sup>1)</sup>
AIDS	1	39	52
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	22	2
Diphtheria	0	0	0
Food-borne diseases	11	508	513
of these, infected abroad	3	127	122
Gonorrhoea	8	381	445
Haemorrhagic fever	0	0	0
Hepatitis A	1	37	59
of these, infected abroad	0	19	21
Hepatitis B (acute)	0	18	31
Hepatitis B (chronic)	4	279	130
Hepatitis C (acute)	0	7	1
Hepatitis C (chronic)	3	421	283
HIV	5	214	237
Legionella pneumonia	2	112	101
of these, infected abroad	0	29	43
Leprosy	0	0	0
Leptospirosis	0	8	10
Measles	0	27	2
Meningococcal disease	1	63	82
of these, group B	1	31	38
of these, group C	0	12	22
of these, unspec. + other	0	20	20
Mumps	0	17	7
Neuroborreliosis	9	78	83
Ornithosis	1	11	19
Pertussis (children < 2 years)	0	44	136
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	3	2
Listeria monocytogenes	0	7	2
Streptococcus pneumoniae	0	70	102
Other aethiology	0	8	16
Unknown aethiology	0	17	17
Under registration	2	26	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	58	98
of these, infected abroad	3	48	78
Syphilis	3	63	114
Tetanus	0	2	2
Tuberculosis	16	359	378
Typhoid/paratyphoid fever	0	26	32
of these, infected abroad	0	24	30
Typhus exanthematicus	0	0	1
VTEC/HUS	3	127	138
of these, infected abroad	1	43	47

<sup>1)</sup> Cumulative number 2006 and in corresponding period 2005

## Selected laboratory diagnosed infections

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

Table 2	Week 46 2006	Cum. 2006 <sup>2)</sup>	Cum. 2005 <sup>2)</sup>
Bordetella pertussis (all ages)	4	193	446
Gonococci	4	373	400
of these, females	0	65	43
of these, males	4	308	357
Listeria monocytogenes	4	49	35
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	19	416	886
Serum specimens <sup>4)</sup>	14	342	699
Streptococci <sup>5)</sup>			
Group A streptococci	0	124	92
Group B streptococci	0	85	72
Group C streptococci	0	20	24
Group G streptococci	0	130	106
S. pneumoniae	12	837	955

Table 3	Week 44 2006	Cum. 2006 <sup>2)</sup>	Cum. 2005 <sup>2)</sup>
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	50	2665	3302
S. Enteritidis	6	515	578
S. Typhimurium	8	358	488
Other zoon. salmonella	8	605	504
Yersinia enterocolitica	4	165	210
Verocytotoxin-producing E. coli	2	130	135
Enteropathogenic E. coli	2	252	241
Enterotoxigenic E. coli	0	205	333

<sup>2)</sup> Cumulative number 2006 and in corresponding period 2005

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

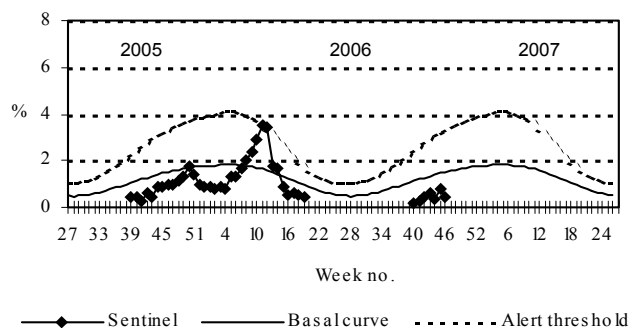
<sup>4)</sup> Serum specimens with pos. complement fixation test

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

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

## 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