



In January and February 2006, three unrelated cases of measles were diagnosed in Copenhagen. There is therefore a risk that the measles virus now in circulation may lead to further cases and spread to other parts of Denmark. Measles is a rare disease in Denmark and physicians are therefore currently encouraged to pay particular attention to symptoms consistent with measles in children and young adults. Suspected measles cases may be reported by phone to the Medical Office of Health and/or to the Department of Epidemiology, SSI. Laboratory-confirmed measles cases must be notified using form 1515.

Symptoms

Disease onset is characterized by fever, malaise, cold, cough and red, irritated eyes during a period of three to four days. Subsequently, the temperature may drop to normal levels followed by another temperature increase reaching 39-41°C. Koplik's spots, small white papules resembling grains of salt, may occur. They are most often found on the posterior part of the buccal mucous membrane before rash occurs. The rash typically starts on the fourth day as pink spots on the hairline around the ears and spreads during the following days to cover the face, neck, trunk, arms and legs. Over time the spots increase in size and become confluent while their colour intensifies.

Incubation time & infectious period

The time from infection to the initial stage is 8-11 days, and the time from infection to the rash is 13-14 days. The infectious period is from one day before the initial stage to five days after the appearance of rash.

Prophylaxis

MMR vaccination may be given to children within 72 hours following exposure to measles infection. In the event of measles outbreaks, vaccination of children ≥ 12 months of age is recommended. Human normal immunoglobulin may be used as prophylaxis or to weaken the disease in susceptible patients aged >4 months who have been exposed within six days. Dosage in accordance with instructions enclosed for the used preparation. MMR vaccination is performed no earlier than three months after immunoglobulin administration.

MEASLES IN DENMARK

Diagnostics

On suspicion of measles, blood samples are drawn and analysed to detect IgM and IgG measles virus antibodies. By request to the department of Epidemiology, samples may be forwarded directly for virus detection:

- pharyngeal swabs in virus transport medium, and
- urine (undiluted).

(A.H. Christiansen, S. Glismann, Dept. of Epidemiology, B. Böttiger, Dept. of Virology)

MEASLES IN COPENHAGEN, 2006

Case no. 1

A 29-year-old MMR-unvaccinated man was admitted in January 2006 following five days with fever, muscle pains and symptoms in the upper respiratory airways. Two days prior to admission, the patient had developed a barking dry cough and a bright-red rash with large spots on the upper part of arms and chest.

On admission the patient was warm, flushing, slightly short of breath and had a cold. Koplik's spots were observed. IgM measles virus antibodies were detected and virus was also demonstrated in throat and urine. The patient was discharged, fully recovered, three days later. The source of infection was unknown.

Case no. 2

An eight-month-old infant was admitted in February 2006 following four days with fever, cough, one case of vomiting and five-six loose motions a day. On admission, the infant had a severe cold, red and irritated eyes and a rash on scalp, face and body. Koplik's spots were not observed. Over a period of three days the rash spread over the trunk, arms and legs. The spots grew in size and became confluent. The blood sample drawn was positive for IgM measles virus antibodies. Virus was also found in oropharyngeal secretions, urine and blood. The patient still had a cough when discharged after four days, but was clearly recovering. The source of infection was unknown.

Case no. 3

After running a high fever for five days, a nearly two-year-old MMR unvaccinated child was examined in the admission room at the paediatric department in February 2006. The child had been receiving antibiotic treatment for otitis media since the

first day of illness. On the third day, a rash had developed and the antibiotics treatment was adjusted. The paediatric department observed red ear drums, weak general condition and a small-spotted rash on face, trunk and arms. After paracetamol treatment, the child regained clarity and was discharged following observation at the department. Two days later, the child returned to the paediatric department due to persistent high fever and a universal rash. The child now had a dry cough, irritated red eyes, photophobia, malaise and was weak and wailing. The rash was almost universal, small-spotted, red-dish-brown and confluent. A blood sample was positive for IgM measles virus antibodies. The source of infection was unknown.

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MEASLES IN NORTH JUTLAND, 2005

In April 2005, a fifteen-year-old MMR unvaccinated woman developed a headache and light fever during a period of three days. After one day's recovery, she developed a confluent, small-spotted rash on head and neck, while experiencing a high fever and sore throat. On suspicion of throat inflammation, antibiotics treatment was initiated. Over the following days, the rash spread and became universal. The patient was admitted after a total of six days of illness. The first blood sample drawn was borderline positive for IgM measles virus antibodies, but follow-up samples indicated IgM reactivity as well as seroconversion for IgG antibodies. The woman's 17-year-old brother, who had also not been MMR vaccinated, fell ill displaying an identical disease pattern 11 days after the onset of his sister's symptoms. Measles virus was detected in a urine sample taken one month after symptom onset. Sequential typing showed type D6 measles virus. Comparison with gene sequences from other European outbreaks disclosed that the virus type found had circulated in Switzerland and South Germany in 2005 and Russia and Belarus during 2003 and 2004. No source of infection was found for the woman's case.

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Individually notifiable diseases

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

Table 1	Week 7 2006	Cum. 2006 ¹⁾	Cum. 2005 ¹⁾
AIDS	0	6	16
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	3	0
Diphtheria	0	0	0
Foodborne diseases	10	58	42
of these, infected abroad	2	12	8
Gonorrhoea	5	54	116
Haemorrhagic fever	0	0	0
Hepatitis A	1	3	20
of these, infected abroad	0	0	4
Hepatitis B (acute)	1	4	10
Hepatitis B (chronic)	5	30	18
Hepatitis C (acute)	0	0	1
Hepatitis C (chronic)	3	26	47
HIV	2	25	49
Legionella pneumonia	0	12	13
of these, infected abroad	0	2	2
Leprosy	0	0	0
Leptospirosis	0	3	5
Measles	1	1	0
Meningococcal disease	0	4	17
of these, group B	0	3	11
of these, group C	0	0	2
of these, unspec. + other	0	1	4
Mumps	0	4	1
Neuroborreliosis	2	11	11
Ornithosis	1	4	2
Pertussis (children < 2 years)	1	11	45
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	0
Listeria monocytogenes	0	0	0
Streptococcus pneumoniae	0	2	26
Other aethiology	0	0	0
Unknown aethiology	0	2	2
Under registration	3	29	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	15	19
of these, infected abroad	1	12	18
Syphilis	0	12	13
Tetanus	0	0	2
Tuberculosis	8	53	60
Typhoid/paratyphoid fever	0	6	3
of these, infected abroad	0	6	3
Typhus exanthematicus	0	0	0
VTEC/HUS	2	14	19
of these, infected abroad	0	4	12

¹⁾ 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 7 2006	Cum. 2006 ²⁾	Cum. 2005 ²⁾
Bordetella pertussis (all ages)	4	40	128
Gonococci	8	49	59
of these, females	2	10	8
of these, males	6	39	51
Listeria monocytogenes	0	4	4
Mycoplasma pneumoniae			
Resp. specimens ³⁾	16	134	434
Serum specimens ⁴⁾	15	100	274
Streptococci ⁵⁾			
Group A streptococci	1	16	23
Group B streptococci	2	14	5
Group C streptococci	0	5	4
Group G streptococci	3	17	24
S. pneumoniae	21	204	212
Table 3	Week 5 2006	Cum. 2006 ²⁾	Cum. 2005 ²⁾
Pathogenic int. bacteria ⁶⁾			
Campylobacter	37	172	239
S. Enteritidis	9	22	28
S. Typhimurium	5	32	45
Other zoon. salmonella	6	43	34
Yersinia enterocolitica	3	16	24
Verocytotoxin- producing E. coli	3	10	9
Enteropathogenic E. coli	4	21	25
Enterotoxigenic E. coli	3	17	18

²⁾ Cumulative number 2006 and in corresponding period 2005

³⁾ Resp. specimens with positive PCR

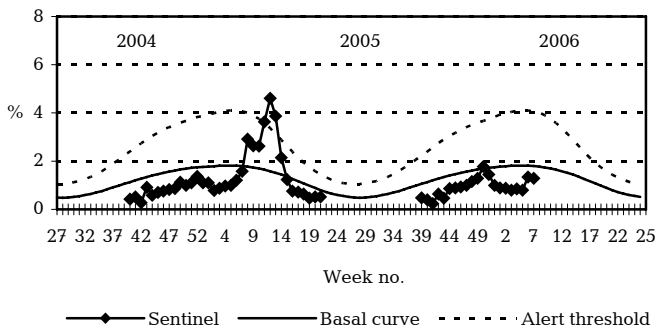
⁴⁾ Serum specimens with pos. complement fixation test

⁵⁾ Isolated in blood or spinal fluid

⁶⁾ See also www.germ.dk

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2004/2005/2006



Sentinel: Influenza consultations
(as percentage of total consultations)

Basal curve: Expected frequency of consultations
under non-epidemic conditions

Alert threshold: Possible incipient epidemic

22 February 2006