



MEASLES OUTBREAK

Since January 2011, Greater Copenhagen and East Zealand have witnessed a measles outbreak, EPI-NEWS 9/11. On 26 April the outbreak counted a total of 46 cases, [Figure 1](#), including 41 in the Capital Region.

Cases ranged in age from 1 to 59 years, and 15 (33%) were ≥ 18 years old. There were slightly more male than female cases, [Table 1](#).

Table 1. Measles cases, by age and gender, 2011

Age	M	F	Total
0-15 mts.	4	0	4
16 mts.-3 years	5	2	7
4-17 years	9	11	20
18-24 years	3	3	6
25-39 years	4	3	7
> 40 years	1	1	2
Total	26	20	46

Among the 41 cases from the Capital Region, 38 were laboratory-confirmed and three were clinically diagnosed with contact to a verified case.

Among the five cases from Zealand, four were laboratory-confirmed and one was clinically diagnosed with contact to a verified case. Overall, a total of five cases have not yet been notified on form 1515.

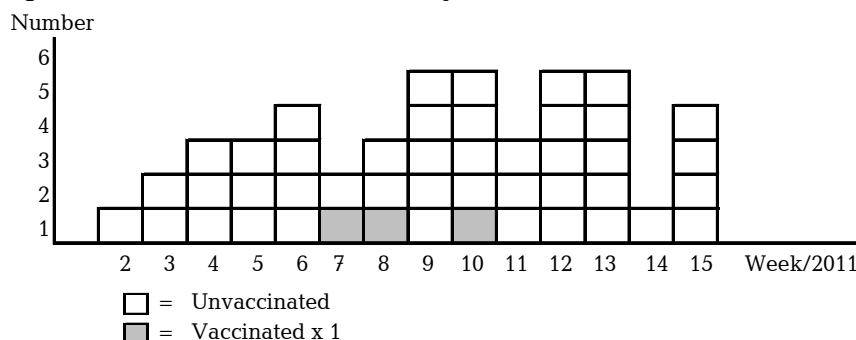
All cases were presumably infected in Denmark and genotyping of virus from the outbreak indicates that it may have been caused by a single virus introduction.

Four children were under 15 months and therefore below the MMR vaccination age. Seven children between 15 months and three years had not received the initial MMR vaccine.

A total of 20 children were 4-16 years old, and some of these should therefore have received two MMR vaccines; however, 17 were unvaccinated and three had received only a single MMR vaccine. Among 15 cases ≥ 18 years, one may have been vaccinated as a child in Pakistan, but this case was recorded as unvaccinated in line with the remaining cases of the age group.

The majority of the cases (63%) were from various parts of the Municipality of Copenhagen. Furthermore, cases were seen in the following municipalities: Fredensborg, Frederiksberg, Frederikssund, Gribskov, Herlev, Hundested-Frederiksværk, Næstved, Odsherred and Stevn. A total of 26 cases were admitted to hospital.

Figure 1. Measles cases in Denmark, by week of disease onset, 2011



Commentary

Since 2008, Denmark had not seen a single measles outbreak, EPI-NEWS 17/09, and the current outbreak is the largest recorded in the past 14 years. Measles is extremely infectious among susceptible persons, and cases are seen among adults as well as children. In some cases, the disease runs a serious course, as illustrated by the fact that more than half of the cases were admitted to hospital. Based on the geographical extension, the age-groups affected and the continuous recording of new cases with no known exposure, it is believed that the outbreak is not receding and that a risk of spreading to other parts of Denmark exists.

As expected, cases are particularly abundant among unvaccinated persons, and these are found among children < 15 months of age and adults born after 1975.

Measles is effectively and safely prevented via MMR vaccination which is offered at 15 months and four years of age (previously at 12 years, EPI-NEWS 9/08). Persons who were not vaccinated according to the mentioned plan may subsequently receive vaccination. The MMR vaccination is provided free of charge to persons below 18 years of age, but there is, in principle, no upper age limit for MMR vaccination.

In the light of the Danish outbreak and outbreaks currently observed in other countries, the parents of unvaccinated children are encouraged to have their children vaccinated. Furthermore, younger unvaccinated adults are also encouraged to receive the vaccination.

Several cases of infection in the waiting rooms at GPs, emergency call services and at hospitals/emergency rooms have been reported. On suspicion of measles, the following measures should be implemented:

Avoid seeing the patient in the practice/waiting room if possible, or be sure to make an appointment at a time when no one else is waiting.

The measles diagnosis should be made serologically by forwarding a blood sample for verification. A throat swab or urine sample may be used to detect the virus.

- Measles is a notifiable disease. When the diagnosis is made, this should be notified immediately using form 1515. Notification aids prevention and counselling as well as contact tracing.

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PSITTACOSIS 2010

In 2010 a total of 14 persons were notified with psittacosis which is caused by the zoonotic bacterium *Chlamydia psittaci*. This number is in line with that observed in previous years. Among the cases, seven were females and seven males, and the median age was 48 years (range 28-87 years). For clinical particulars and routes of infection, please see EPI-NEWS 5/08 and 19-20/10. Seven are believed to have been infected by contact to privately kept birds, including one tourist who was presumably infected in the country of origin.

Three are believed to have been infected in connection with occupational contact to birds or bird droppings, including one case associated with employment at an animal shop. However, all birds in the shop tested negative. In four cases, the source and mode of infection were unknown.

Diagnostics

Nine cases were diagnosed by PCR in airway secretions during admission to hospitals, and in eight of these cases patients were reported to have had pneumonia. The remaining patients were diagnosed by serology, one of whom was not admitted to hospital.

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Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2011 figures are preliminary)

Table 1	Week 16 2011	Cum. 2011 ¹⁾	Cum. 2010 ¹⁾
AIDS	0	20	17
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	2	24
Diphtheria	0	0	0
Food-borne diseases	1	45	73
of these, infected abroad	0	11	21
Gonorrhoea	1	100	159
Haemorrhagic fever	0	0	0
Hepatitis A	0	5	13
of these, infected abroad	0	0	0
Hepatitis B (acute)	0	2	10
Hepatitis B (chronic)	0	59	65
Hepatitis C (acute)	0	4	0
Hepatitis C (chronic)	0	73	154
HIV	0	89	79
Legionella pneumonia	0	23	33
of these, infected abroad	0	4	6
Leprosy	0	1	0
Leptospirosis	1	0	0
Measles	4	41	2
Meningococcal disease	5	46	23
of these, group B	0	9	13
of these, group C	0	18	6
of these, unspec. + other	5	19	4
Mumps	0	2	3
Neuroborreliosis	0	5	6
Ornithosis	0	2	6
Pertussis (children < 2 years)	2	21	29
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	1	0
Listeria monocytogenes	0	0	2
Streptococcus pneumoniae	1	32	34
Other aethiology	0	3	7
Unknown aethiology	0	1	8
Under registration	3	7	-
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	3	25	32
of these, infected abroad	0	16	24
Syphilis	3	138	103
Tetanus	0	0	0
Tuberculosis	4	129	103
Typhoid/paratyphoid fever	1	6	15
of these, infected abroad	1	6	13
Typhus exanthematicus	0	0	0
VTEC/HUS	0	33	43
of these, infected abroad	0	12	12

¹⁾ Cumulative number 2011 and in corresponding period 2010

Selected laboratory diagnosed infections

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

Table 2	Week 16 2011	Cum. 2011 ³⁾	Cum. 2010 ³⁾
Bordetella pertussis (all ages)	3	28	47
Gonococci	2	69	154
of these, females	0	12	44
of these, males	2	57	110
Listeria monocytogenes	0	7	16
Mycoplasma pneumoniae			
Resp. specimens ³⁾	5	192	35
Serum specimens ⁴⁾	2	158	80
Streptococci ⁵⁾			
Group A streptococci	7	79	63
Group B streptococci	5	47	37
Group C streptococci	2	17	13
Group G streptococci	4	49	47
S. pneumoniae	39	404	434
Table 3	Week 14 2011	Cum. 2011 ²⁾	Cum. 2010 ²⁾
MRSA	22	302	195
Pathogenic int. bacteria ⁶⁾			
Campylobacter	16	473	620
S. Enteritidis	1	55	80
S. Typhimurium	1	57	96
Other zoon. salmonella	9	150	152
Yersinia enterocolitica	5	49	43
Verocytotoxin- producing E. coli	2	32	44
Enteropathogenic E. coli	2	35	41
Enterotoxigenic E. coli	1	57	126

²⁾ Cumulative number 2010 and in corresponding period 2009

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