EPI-NEWS

NATIONAL SURVEILLANCE OF COMMUNICABLE DISEASES

Editor: Peter Henrik Andersen
Dept. of Epidemiology
Statens Serum Institut • 5 Artillerivej • DK 2300 Copenhagen S

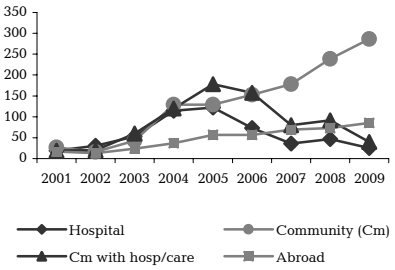
Tel.: +45 3268 3268 • Fax: +45 3268 3874
www.ssi.dk • epinews@ssi.dk • ISSN: 1396-4798

MRSA 2009

In 2009, the Department of Epidemiology received a total of 722 notifications of new MRSA cases in 712 persons. In the same period, the Staphylococcus Laboratory received a total of 811 isolates, and consequently 89 (11%) notifications are currently outstanding. Reminders will be sent out to secure the remaining statutory notifications.

In comparison with 2008, the number of MRSA isolates decreased from 854 to 811. The majority are community-acquired infections and these display an increasing trend, Figure 1.

Figure 1. Total number of MRSA cases, 2001-2009



The median age was 43 years (range 0 to 100), and 372 (52%) were males. In 436 (60%) cases, the indication for sampling was clinical infection, 199 (28%) were asymptomatic carriers detected by screening, and in 87 (12%) cases the indication was "other" or no indication was stated.

Among the infections, MRSA was most frequently detected from skin and ulcers, a total of 319 (44%) cases.

In 23 cases, MRSA was isolated from blood, including six persons who were known with MRSA from previous years.

In 208 cases, information on predisposing factors was provided. The most frequent among such factors were ulcers (125), foreign objects, e.g. drains, urinary and intravenous catheters (37) and chronic skin conditions (30).

Outbreaks

2009 saw eight outbreaks comprising a total of 34 cases, including two outbreaks at the neonatal departments at Hvidovre Hospital (12) and Copenhagen University Hospital (4).

Epidemiological classification

The cases were classified with regard to presumed mode of infection on the basis of epidemiological and microbiological information, Table 1.

The majority of MRSA cases were acquired in Denmark; infection abroad was stated in 140 cases (19%).

Community-acquired cases comprised a total of 450 (55%), including 164 with known exposure, 80% of these were household infections or infection by a close contact. In 26 cases (16%), infection from contact with swine was suspected. To this figure should be added an additional 13 cases which were not notified clinically but was of the CC398 type which is associated with swine contact.

Table 1. Epidemiological classification of notified MRSA cases and no. (%) with clinical infection, 2009

Classification	Total	Clin. inf.	(%)
Acquired abroad	140	85	(61
Acquired in hospital	44	25	(57
Known exposure in hospital/nursing home	25	12	(48
Contact to hospital/ nurs. home (12 mths)	42	24	(57
Occ. hosp/nurs. home	17	4	(24
Community			
- Exposure	164	35	(21
- No exposure	286	248	(87
Not classified	4	3	(75
No notification received	89	-	
Total	811	436	(54

Typing and resistance

The 811 isolates represented 140 spa types from 16 different clonal complexes (CC groups). The two primary groups, CC8 (n = 206) and CC5 (n = 144) comprised more than 43% of the isolates and represented 22 and 21 different spa types, respectively. The ten most frequent spa types comprised 55% of the isolates, among these the two most frequently observed types were t008 (n = 90; CC8) and t002 (n = 87; CC5). Among the imported isolates, CC8 and CC30 comprised 44% of cases. CC22 and CC5 comprised 61% of the isolates acquired in hospitals. CC22 was observed in connection with outbreaks at neonatal departments. The resistance pattern was closely associated with the MRSA spa type. A total of 15 (1.8%) MRSA isolates were resistant to mupirocin.

Commentary

In 2009, as in previous years, quite a few MRSA notifications were not made. It should be stressed that any physician receiving an MRSA notification from a Department of Clinical Microbiology is obliged to submit the notification after filling in the clinical information.

Due to the lacking notifications, results are currently only tentative, but the proportion of infections acquired at hospitals or associated with contact to other health care services is stagnating/decreasing, which was the objective of the MRSA guideline published by the National Board of Health, EPI-NEWS 44/06. The latest developments thus confirm the previous year's trend that MRSA is primarily seen in primary health care, EPI-NEWS 34/09.

Typing has shown that the MRSA population continues to be very heterogeneous, comprising many spa types. As the pattern of resistance is linked to spa types and therefore epidemiology (hospital versus community-acquired cases) the incidence of resistance to the various antibiotics changes from one year to the next. The epidemiology as well as the heterogeneity of the MRSA population indicates that MRSA is increasingly imported via contact to other countries. This is also true for cases classified as "community-acquired, no exposure". The CC398 clone is still primarialy seen in persons with direct contact to swine.

(M. Malling, K. Mølbak, Dept. of Epidemiol., A. Petersen, M. Smørum, R. Skov, Staphylococcus Laboratory)

CLOSTRIDIUM DIFFICILE INCREASE

Laboratory-based monitoring has revealed an increase in Clostridium difficile PCR ribotype 027.

In the first three months of 2010, a total of 238 cases have been detected, an increase from the 134 cases observed in the first months of 2009 and the 596 cases found in all of 2009. The cases were primarily found in the Copenhagen Region, where a total of 204 of 238 were recorded.

C. difficile, and PCR ribotype 027 in particular, comprise a growing problem at several of the Copenhagen Region's hospitals serviced by the clinical microbiology departments at Hillerød, Herlev and Hvidovre hospitals. Recently, several departments of pulmonary medicine have been affected. Efforts to counter the observed tendency have been focused on physicians' attention to diagnosis and treatment of C. difficile and on prudent use of antibiotics. Furthermore, regional C. difficile 027 monitoring has been implemented. Additionally, infection hygiene initiatives have been focused on isolation and disinfecting cleaning measures, EPI-NEWS 12/09.

(K.E.P. Olsen, Dept. of Microbiol. Surv. & Research, I. Panum, Hillerød Hospital, J.O. Jarløv, Herlev Hospital, B. Lundgren, Hvidovre Hospital)

Individually notifiable diseases

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

Table 1	Week 17 2010	Cum. 2010 [1]	Cum. 2009 [1]
AIDS	1	18	10
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	0	0
Creutzfeldt-Jakob	0	4	3
Diphtheria	0	0	0
Food-borne diseases	5	79	133
of these, infected abroad	1	22	21
Gonorrhoea	4	163	181
Haemorrhagic fever			
Hepatitis A	0	13	9
of these, infected abroad	0	5	5
Hepatitis B (acute)	0	12	12
Hepatitis B (chronic)	0	66	73
Hepatitis C (acute)	0	0	2
Hepatitis C (chronic)	2	157	122
HIV	1	81	96
Legionella pneumonia	1	39	36
of these, infected abroad	0	5	4
Leprosy	0	0	0
Leptospirosis	0	0	0
Measles	0	3	9
Meningococcal disease	1	26	34
of these, group B	0	3	9
of these, group C	0	6	4
of these, unspec. + other	0	6	0
Mumps	0	3	6
Neuroborreliosis	0	6	4
Ornithosis	0	6	0
Pertussis (children < 2 years)	3	33	42
Plague	0	0	0
Polio	0	0	0
Pneum. disease, invasive (IPD) [2]	3	57	50
Purulent meningitis			
Haemophilus influenzae	0	0	3
Listeria monocytogenes	0	2	2
Other aethiology	0	6	6
Unknown aethiology	0	0	1
Under registration	2	3	0
Rabies	0	0	0
Rubella (congenital)	0	0	0
Rubella (during pregnancy)	0	0	0
Shigellosis	0	32	35
of these, infected abroad	0	21	31
Syphilis	0	106	94
Tetanus	0	0	0
Tuberculosis	2	115	131
Typhoid/paratyphoid fever	1	16	7
of these, infected abroad	0	12	6
Typhus exanthematicus	0	0	0
VTEC/HUS	2	44	34
of these, infected abroad	0	10	7

[1] *Cumulative number 2010 and in corresponding period 2009*

[2] *Meningitis, all age groups, invasive pneumococcal disease < 5 years*

Selected laboratory diagnosed infections

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

Table 2	Week 17 2010	Cum. 2010 [3]	Cum. 2009 [3]
Bordetella pertussis (all ages)	0	47	47
Gonococci	11	165	135
of these, females	4	48	31
of these, males	7	117	104
Listeria monocytogenes	1	15	17
Mycoplasma pneumoniae			
Resp. specimens [3]	2	37	26
Serum specimens [4]	3	83	54
Streptococci [5]			
Group A streptococci	2	65	71
Group B streptococci	3	40	35
Group C streptococci	4	17	11
Group G streptococci	4	51	56
S. pneumoniae	24	458	539
Table 3	**Week 15 2010**	**Cum. 2009 [3]**	**Cum. 2008 [3]**
MRSA	16	227	199
Pathogenic int. bacteria [6]			
Campylobacter	31	640	459
S. Enteritidis	0	80	67
S. Typhimurium	21	117	271
Other zoon. salmonella	20	171	184
Yersinia enterocolitica	3	44	57
Verocytotoxin-producing E. coli	4	48	32
Enteropathogenic E. coli	4	48	36
Enterotoxigenic E. coli	10	137	64

[3] *Cumulative number 2010 and in corresponding period 2009*

[4] *Resp. specimens with positive PCR*

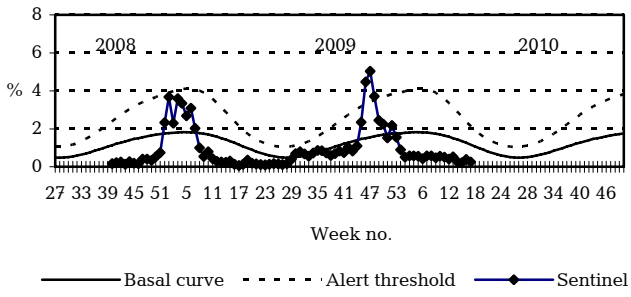
[5] *Serum specimens with pos. complement fixation test*

[6] *Isolated in blood or spinal fluid*

[7] *See also www.germ.dk*

Sentinel surveillance of the influenza activity

Weekly percentage of consultations, 2008/2009/2010



Sentinel:	Influenza consultations (as percentage of total consultations)
Basal curve:	Expected frequency of consultations under non-epidemic conditions
Alert threshold:	Possible incipient epidemic