



## MRSA OUTBREAKS AT NEONATAL DEPARTMENTS

No. 48, 2008

### Outbreak at Glostrup Hospital

An outbreak of methicillin-resistant *Staphylococcus aureus* (MRSA) in the period 25 June to 1 August 2008 comprised a total of 32 admitted children.

The index patient was presumably a child (triplet) who was transferred from the Copenhagen University Hospital (CUH) with no signs of infection. The MRSA infection was found in the index person by throat swab on 24 July and subsequently the other siblings also tested positive. A few days later, a swab from another child's navel pustule also tested positive for MRSA. In a screening comprising all admitted patients and implicated members of staff, a total of 14 children, two parents and two staff members tested positive for MRSA.

All patients who had been admitted in the presumed infection period were summoned for testing, and another 18 children and ten family members tested positive. A total of 25 families were involved. None of the MRSA positives presented with symptoms of MRSA-infection. All isolates were spa type t127. Screenings were performed by culture in selective medium with subsequent seeding on selective chromogenic agar (MRSA-ID agar). The detected MRSA was also fusidic-resistant.

The neonatal department was closed and disinfection performed with per-sulphate (Virkon®) and vaporized H<sub>2</sub>O<sub>2</sub>-silver ions (Sterinis®). After the disinfection, no further cases of MRSA have been detected and no new cases have occurred.

Since the outbreak at Glostrup Hospital all patients who are transferred between neonatal departments in the region are isolated and MRSA screened.

(J. O. Jarløv, DCM, Herlev Hospital)

### Outbreak at Hillerød Hospital

In October 2008, as part of the MRSA screening of infants in connection with transfers from other hospitals, MRSA was detected in a child who had been transferred from the CUH. The child was placed in the neonatal department's acute ward; consequently the other children in the ward and their families were isolated and swapped. MRSA was detected in five of six families in the acute ward. In the rest of the department, MRSA was found in one family where the child had been transferred in the same incubator as the index case;

another eight families were MRSA negative. In all, MRSA was detected in five infants, nine parents and one sibling. In 12 of the 15 positive cases MRSA was only isolated after cultivation in selective medium. All isolates were spa type t189 and resistant to methicillin (betalactams), gentamicin, erythromycin, clindamycin and moxifloxacin.

The acute ward was cleaned and disinfected with Virkon®.

(T. I. Pedersen, DCM, Hillerød Hospital)

### Outbreak at Hvidovre Hospital

On 7 November 2008 the first positive MRSA test was detected at the neonatal department at Hvidovre Hospital; currently MRSA has been detected in nine children and three parents comprising a total of eight families. Isolation of the MRSA positive children and screening of all other children, parents and staff was effected immediately. MRSA has not been found in any staff members. The department briefly stopped taking in patients, and the neonatal department has moved to another floor. The "old" department was disinfected with Sterinis® and subsequently cleaned.

All isolates were of spa type t015 and only resistant to methicillin and other penicillins.

(H. Westh, DCM, Hvidovre Hospital)

### Commentary

The above sections describe recent MRSA outbreaks at three hospitals and with three different spa types. MRSA spread in neonatal departments have not previously been an issue in Denmark, but the problem is well-known abroad. Outbreaks with spa type t127 (CC1: clonal complex1) have been described in Great Britain, while outbreaks of the types t0189 (CC1) and t015 (CC45) have not previously been described. A common denominator of the three Danish outbreaks is that most affected persons were only colonised and that the spread of the infection was considerable.

As stated previously, only three of the 15 cases at Hillerød Hospital tested positive without enrichment brod. This stresses the need to perform enrichment brod in screenings, a measure which is also recommended in the guideline from the Danish National Board of Health. The substantial spread of the infection underlines the importance of adherence to general hygiene pre-

cautions, in particular at a busy neonatal department. Studies have shown that staphylococci in neonates may originate from the child's parents or from staff, other parents or children. The risk of cross-contamination is therefore considerable and is mainly prevented through good hand hygiene among staff and parents.

The significance of the environment is not fully known. However, normal cleaning is not considered sufficient in connection with MRSA occurrence, and daily disinfection of contact points at the bed ward and especially final cleaning and disinfection are recommended. Use of Sterinis®, which can penetrate into any part of a room accessible to air will effectively disinfect larger areas in connection with outbreaks.

Information on MRSA-occurrence in infants is also of importance in connection with GP consultations and is provided by the hospital. Practical advice concerning handling may be found in the MRSA guideline. The Medical Officer of Health has issued specific information to visiting nurses concerning house calls.

(R. Skov, E.T. Jensen, Department of Antibiotic Resistance and Hospital Hygiene)

### World AIDS DAY 2008

1 December is World Aids Day. The UNAIDS Global Report 2008 states that the HIV epidemic affects the African continent more than any other: 67% of the world's approx. 33 million HIV-infected live in Sub-Saharan Africa. The report points out that there is no epidemic among heterosexuals outside of Africa. The risk groups in other parts of the world are men who have sex with men (MSM), IV-drug addicts and sex workers. In Denmark, MSM remains the most severely affected group. It is estimated that one in twenty MSM in Denmark is infected with HIV. Approximately 1,000 persons in Denmark are assumed to have the infection without knowing so: this "dark figure" may, however, be considerably higher. By offering HIV tests to risk group persons, the "dark figure" may be reduced and more persons treated. Furthermore, the risk of further spreading of HIV could be reduced considerably. Consistent use of a condom remains the safest available preventive measure against sexually transmitted HIV.

(S. Cowan, Dept. of Epidemiology)

26 November 2008

## Individually notifiable diseases

Number of notifications received in the Department of Epidemiology, SSI (2008 figures are preliminary)

Table 1	Week 47 2008	Cum. 2008 <sup>1)</sup>	Cum. 2007 <sup>1)</sup>
AIDS	0	33	44
Anthrax	0	0	0
Botulism	0	0	0
Cholera	0	1	0
Creutzfeldt-Jakob	0	1	0
Diphtheria	0	0	0
Food-borne diseases	12	798	581
of these, infected abroad	0	127	108
Gonorrhoea	2	340	328
Haemorrhagic fever	0	0	0
Hepatitis A	0	46	24
of these, infected abroad	0	23	10
Hepatitis B (acute)	0	21	28
Hepatitis B (chronic)	0	154	292
Hepatitis C (acute)	0	6	7
Hepatitis C (chronic)	0	402	543
HIV	0	222	284
Legionella pneumonia	1	113	113
of these, infected abroad	0	41	31
Leprosy	0	0	0
Leptospirosis	1	6	12
Measles	0	10	2
Meningococcal disease	0	50	63
of these, group B	0	22	34
of these, group C	0	15	19
of these, unspec. + other	0	13	10
Mumps	2	26	9
Neuroborreliosis	0	54	92
Ornithosis	0	4	9
Pertussis (children < 2 years)	1	89	74
Plague	0	0	0
Polio	0	0	0
Purulent meningitis			
Haemophilus influenzae	0	4	2
Listeria monocytogenes	0	1	10
Streptococcus pneumoniae	0	75	93
Other aethiology	0	19	11
Unknown aethiology	0	19	15
Under registration	2	7	-
Rabies	0	0	0
Rubella (congenital)	0	2	0
Rubella (during pregnancy)	0	0	0
Shigellosis	2	76	209
of these, infected abroad	0	60	47
Syphilis	0	125	85
Tetanus	0	1	2
Tuberculosis	8	353	353
Typhoid/paratyphoid fever	0	32	21
of these, infected abroad	0	26	20
Typhus exanthematicus	0	0	2
VTEC/HUS	3	139	149
of these, infected abroad	1	48	49

<sup>1)</sup> Cumulative number 2008 and in corresponding period 2007

## Selected laboratory diagnosed infections

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

Table 2	Week 47 2008	Cum. 2008 <sup>2)</sup>	Cum. 2007 <sup>2)</sup>
Bordetella pertussis (all ages)	3	176	197
Gonococci	8	335	316
of these, females	2	69	54
of these, males	6	266	262
Listeria monocytogenes	1	45	52
Mycoplasma pneumoniae			
Resp. specimens <sup>3)</sup>	1	75	343
Serum specimens <sup>4)</sup>	5	80	383
Streptococci <sup>5)</sup>			
Group A streptococci	3	125	102
Group B streptococci	3	116	88
Group C streptococci	1	21	20
Group G streptococci	2	116	111
S. pneumoniae	22	825	925
Table 3	Week 45 2008	Cum. 2008 <sup>2)</sup>	Cum. 2007 <sup>2)</sup>
MRSA	27	657	591
Pathogenic int. bacteria <sup>6)</sup>			
Campylobacter	58	3096	3646
S. Enteritidis	8	590	511
S. Typhimurium	36	1829	315
Other zoon. salmonella	17	915	657
Yersinia enterocolitica	4	291	248
Verocytotoxin-producing E. coli	2	142	144
Enteropathogenic E. coli	9	194	161
Enterotoxigenic E. coli	5	367	274

<sup>2)</sup> Cumulative number 2008 and in corresponding period 2007

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

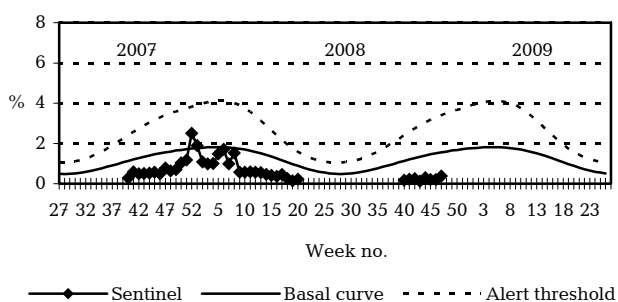
<sup>4)</sup> Serum specimens with pos. complement fixation test

<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, 2007/2008/2009



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

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