

REACH Notes

Recent Developments to Promote Judicious Antibiotic Prescribing

REACH Notes

Vol 2, No 1

September 18, 2002

Community-Acquired MRSA in Children: It's Here!

Methicillin-resistant *Staphylococcus aureus* (CA-MRSA) was once only the concern of infectious disease experts in hospitals and nursing homes. Now, though still rare, it is a threat to children in the community. Community-acquired methicillin-resistant *Staphylococcus aureus* (CA-MRSA) differs significantly from nosocomially acquired MRSA (NA-MRSA). In the 1980s, it was assumed that all CA-MRSA arose from recent hospital exposure. Later, it was shown that CA-MRSA could be found in patients exposed to antibiotics, intravenous drug use,² or family members who harbored nosocomially-acquired MRSA,¹

In the 1990s, reports of CA-MRSA began to appear in patients with no risk factors for acquisition of a nosocomial infection.

Reports of Pediatric CA-MRSA (cultured within 48 hours of admission, no risk factors):

- 10 of 14 CA-MRSA isolates in **Hawaii** were from adults and children with no known risk factors.³
- Herold et al.⁴ reported a 25-fold increase in CA-MRSA (without risk factors) from 1988 to 1995 at the University of **Chicago** Children's Hospital.
- In 1999, the Centers for Disease Control reported on 4 children in **Minnesota** and **North Dakota** who died from CA-MRSA.⁵
- In **Massachusetts** in November 2000, five adolescent males in a program for high-risk youth developed CA-MRSA.

Facts to Note:

GOOD NEWS: Difference in Susceptibility Profiles between CA-MRSA and NA-MRSA

- While CA-MRSA are, by definition, methicillin-resistant, they are generally more susceptible to non-beta-lactam antibiotics such as clindamycin, erythromycin, and fluoroquinolones than MRSA isolates circulating in hospitals. For this reason, some refer to these strains as **Multiply-Sensitive MRSA**.

BAD NEWS: Vancomycin-Resistant *Staphylococcus aureus* has been reported, 2002⁶

- The first clinical case of fully vancomycin-resistant *Staphylococcus aureus* (VRSA) was reported in June 2002, in an adult with a nosocomially acquired MRSA infection requiring prolonged vancomycin therapy.

Clinical Implications:

Community-acquired MRSA is still quite rare in Massachusetts. Recommendations for first-line treatment of staph infections have not changed. But if a patient is seriously ill, or not responding to treatment as expected, further investigation and broader antibiotic coverage are indicated. Clindamycin is one alternative.

¹ Hollis RJ, Barr JL, Doebbeling BN, Pfaller MA, Wenzel RP. Familial carriage of methicillin-resistant *Staphylococcus aureus* and subsequent infection in a premature neonate. Clin Infect Dis 1995; 21: 328-32.

² Saravolatz LD, Pohlod DJ, Arking LM. Community-acquired methicillin-resistant *Staphylococcus aureus* infections: a new source for nosocomial outbreaks. Ann Intern Med 1982; 97: 325-9.

³ Gorak EJ, Yamada SM, Brown JD. Community-acquired methicillin-resistant *Staphylococcus aureus* in hospitalized adults and children without known risk factors. Clin Infect Dis 1999; 29: 797-800.

⁴ Herold BC, Immergluck LC, Maranan MC, Lauderdale DS, Gaskin RE, Boyle-Vavra S, Leitch CD, Daum RS. Community-acquired methicillin-resistant *Staphylococcus aureus* in children with no identified predisposing risk. JAMA 1998; 279(8): 593-8.

⁵ CDC. Four pediatric deaths from community-acquired methicillin-resistant *Staphylococcus aureus* - Minnesota and North Dakota, 1997-1999. MMWR Morb Mortal Wkly Rep 1999; 48: 707-10.

⁶ CDC. *Staphylococcus aureus* resistant to vancomycin--United States, 2002. MMWR Morb Mortal Wkly Rep. 2002; 51(26): 565-7.