

Isolation of methicillin-resistant *Staphylococcus aureus* (MRSA) from swine in the Midwestern United States*

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Background: Over the past decade, the epidemiology of methicillin-resistant *Staphylococcus aureus* (MRSA) has undergone significant changes. Once primarily a hospital-based pathogen, MRSA is now found increasingly in the community, and this bacterium has caused serious infections in individuals with no history of hospitalization. Additionally, MRSA infections have been documented in horses, dogs, cats, and cattle, among other animals. Recent research has also shown that swine and swine farmers are colonized with MRSA at high levels in the Netherlands and Canada. However, to date no studies had investigated carriage of MRSA in swine and swine farmers in the United States. **Methods:** We collected samples from swine on 7 different farms in Iowa and Illinois. These farms are part of a single closed production system consisting of approximately 60,000 live animals at any given time. Nasal swabs were taken from 209 swine representing 7 different age groups. Isolates were typed by pulsed field gel electrophoresis (PFGE) using *Sma*I and *Eag*I restriction enzymes. **Results:** Overall MRSA prevalence was found to be 70% (147/209). Prevalence varied by age group and farm, ranging from 36% (11/30) in adult swine, to 100% (60/60) of all animals aged 9 and 12 weeks. Isolates were not typeable by PFGE using the *Sma*I enzyme, but were found to be clonal using *Eag*I, and were not related to common human types isolated in Iowa (USA100, USA300, and USA400). **Conclusions:** These results show that colonization of swine by MRSA is very common on the farm system we examined in the Midwestern U.S., adding to the concern about domestic animal species as a reservoir of this bacterium. Additional studies are ongoing to examine carriage rates on additional farms, to further investigate the molecular epidemiology of these isolates, and to determine carriage rates of MRSA among workers in contact with these colonized pigs.