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ABSTRACT

Population-based surveillance for methicillin-resistant *Staphylococcus aureus* infections among high school football and wrestling participants—Nebraska, 2008–2010

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Objectives
The Nebraska Department of Heath and Human Services (NDHHS) Office of Epidemiology conducted ongoing surveillance to monitor statewide incidence of physician-diagnosed methicillin-resistant *Staphylococcus aureus* (MRSA) infections among high school football and wrestling participants during school years 2008–09 and 2009–10.

Introduction
MRSA, which had been known primarily as a cause of healthcare-associated infections, increasingly has been recognized as a cause of skin infections among persons of all ages who have little or no contact with healthcare settings. Such infections are the most common cause of skin and soft-tissue infections among patients presenting to emergency departments.[1] Community-associated MRSA infections among high school, college, and professional athletes, and outbreaks within teams have established otherwise healthy athletes as a population at risk.[2–5] To monitor the occurrence of such infections among Nebraska high school athletes, the NDHHS Office of Epidemiology first initiated population-based surveillance to determine incidence during the 2006–07 and 2007–08 school years. Findings of this surveillance established MRSA as an emerging cause of infections among Nebraska high school athletes, particularly football and wrestling participants; from 2006–07 to 2007–08, physician-diagnosed MRSA incidence per 10,000 wrestlers increased from 19.6 to 60.1, and incidence per 10,000 football players increased from 5.0 to 25.1.[6] In response to this finding, surveillance conducted at regular intervals has since been continued to monitor trends.

Methods
To facilitate ongoing surveillance, a list of official contacts in each of Nebraska's 312 high schools has been maintained and regularly updated. To foster collaboration and enhance response rates, MRSA prevention and control resources and surveillance findings are regularly provided to the targeted officials in each school.

During both the 2008–09 and 2009–10 school years, we developed four Internet-based questionnaires to survey delegated officials in all 312 Nebraska high schools, following the completion of the respective football and wrestling seasons. Each school's administration has delegated responsibility for completing the survey to an appropriate official associated with that school's athletic programs and having knowledge of procedures for prevention, identification, and control of infections among athletes. We collected number of participants for both football and wrestling in each school and number of athletes with physician-diagnosed MRSA infections to calculate statewide attack rates per 10,000 participants.

Results
Of 312 Nebraska schools, 239 (76.6%) and 251 (80.4%) responded to 2008–09 and 2009–10 football surveys, respectively. Of respondents, 97.5% (233/239) and 98.4% (247/251) had football programs of which 6.4% (15/233) and 3.6% (9/247) reported $\geqslant$1 physician-diagnosed MRSA-affected participant. Similarly, of 312 schools, 177 (56.7%), and 251 (80.4%) responded to 2008–09 and 2009–10 wrestling surveys, respectively. Of respondents, 78.0% (138/177) and 75.3% (189/251) had wrestling programs of which 7.2% (10/138) and 7.4% (14/189) reported $\geqslant$1 physician-diagnosed MRSA-affected participant. Incidence per 10,000 football players decreased from 19.0 to 11.5, and incidence per 10,000 wrestlers decreased from 60.8 to 50.0 from 2008–09 to 2009–10, respectively.

Conclusions

Estimated incidence of physician-diagnosed MRSA infections among Nebraska high school football and wrestling participants decreased substantially during 2009–10 compared with 2008–09, demonstrating that the apparent increasing incidence has not continued. By maintaining updated contact information of at least one official in each Nebraska high school and communicating regularly, we have continued surveillance with high rates of participation to monitor MRSA incidence among high school athletes over four consecutive school years.

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