Canadian Agency for Drugs and Technologies in Health

RAPID RESPONSE REPORT: SUMMARY OF ABSTRACTS

TITLE: Methicillin-Resistant *Staphylococcus aureus* (MRSA) Screening and Discontinuation of Precautions in Hospitals: Clinical Effectiveness and Guidelines

DATE: 23 June 2011

RESEARCH QUESTIONS

1. What is the clinical effectiveness of screening for MRSA upon hospital admission?

2. What are the evidence-based guidelines regarding screening patients for MRSA upon hospital admission?

3. What are the evidence-based guidelines regarding the discontinuation of precautions for adult and elderly patients admitted to the hospital who have previously been diagnosed with MRSA?

KEY MESSAGE

Evidence suggests that universal screening or screening of high risk patients is effective for the control of MRSA infection in hospitals, although the evidence is considered to be weak overall. Recommendations could not be made on the discontinuation of contact precautions.

METHODS

A limited literature search was conducted on key resources including PubMed In Process, Ovid MEDLINE, The Cochrane Library (2011, Issue 5), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2006 and June 10, 2011. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports (HTAs), systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

The literature search identified two HTAs, two systematic reviews, fourteen non-randomized studies, and five evidence-based guidelines regarding screening and discontinuation of precautions for MRSA in hospitals. No randomized controlled trials were identified. One additional guideline, that did not provide a methodology, is included in the appendix.

OVERALL SUMMARY OF FINDINGS

Two HTAs[1,2] and two systematic reviews[3,4] addressed screening for MRSA. The HTAs indicated that selective screening programs for high risk patients would help to reduce the risk of MRSA colonization and infection. Both HTAs noted that the included studies were methodologically weak. One systematic review[3] concluded that screening for MRSA resulted in a decreased risk for MRSA bloodstream infections, but not surgical-site infections. The second systematic review[4] concluded that use of active surveillance or targeted screening of patients admitted to hospital was useful, but poor quality of evidence did not allow for definitive recommendations.

Fourteen non-randomized studies[5-18] addressed screening for MRSA. Eleven studies[5-8,10,11,14-18] found screening of high-risk patients admitted to hospital effective in decreasing the spread of MRSA infection. The remaining three studies[9,12,13] reported results on universal screening of patients admitted to hospital. One study[9] found that universal screening of patients at hospital admission did not significantly affect the rate of MRSA infection in a surgical department with already relatively low rates of MRSA infection. Universal admission surveillance resulted in a large reduction in MRSA infections in a second study,[12] and a third study[13] concluded that universal screening of patients admitted to the emergency department might reduce the spread of MRSA colonization and bacteremia.

Five guidelines addressed screening for MRSA.[19-23]

- The Provincial Infectious Disease Advisory Committee (PIDAC) of Ontario recommends screening of high risk patients upon admission to hospital.[19]
- The US Agency for Healthcare Research and Quality (AHRQ) recommends that hospitals with unacceptably high MRSA rates perform active surveillance of all patients admitted to hospital.[20]
- UK guidelines, published jointly by three healthcare societies, recommend active screening of patients for MRSA upon admission to hospital.[21]
- The UK's National Health Service (NHS) recommends pre-operative screening for patients in certain surgical specialties (orthopedic, cardiothoracic, and neurosurgery), and also recommends that the most appropriate approach to prevention of spread of MRSA would be the universal screening of all admissions.[22]

- The US Centers for Disease Control and Prevention (CDC) recommends active screening of patients admitted to high-risk areas (e.g., intensive care units).[23]

Two of the guidelines[20,23] commented on discontinuation of contact precautions. Both were unable to make recommendations regarding this process, due to a lack of evidence.

Most included studies and guidelines concluded that universal screening or screening of high risk patients is effective for the control of MRSA infection in hospitals, although evidence is considered to be weak overall. Recommendations could not be made on the discontinuation of contact precautions.

REFERENCES SUMMARIZED

Health technology assessments

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Systematic reviews and meta-analyses

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Randomized controlled trials

No literature identified

Non-randomized studies

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Guidelines and recommendations

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APPENDIX – FURTHER INFORMATION:

Guidelines and recommendations (methodology not specified)

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