Methicillin-Resistant Staphylococcus Aureus (MRSA) Prevalence among Higher-Risk Populations

Prevalence Study Protocol

December 11, 2009

Purpose: Prospective active surveillance cultures of population group members admitted to Maine hospitals to determine prevalence of MRSA colonization in these population groups.

Action: Perform an Active Surveillance Culture (ASC) on patients who meet the inclusion criteria and who are not excluded by the exclusion criteria within 24 hours of hospital admission. The admission time is defined as the admission time on the face sheet of the chart.

- **Inclusion Criteria**
    - Patients admitted (not transferred) to intensive care and coronary intensive care units (including "overflow" admissions to ICU when other units full and telemetry patients in ICU)
    - Hemodialysis patients
    - Patients with prior hospitalizations (overnight stay) in the past 6 months (including interhospital transfer patients)
    - Patients with an overnight stay in a skilled nursing facility or nursing facility in the previous six months
    - Patients transferred from prison or jail

- **Exclusion Criteria**
    - Patient refusal
    - Patients who died, or were discharged or transferred within 24 hours whose specimen was not obtained within the 24 hour time period
    - Patients previously MRSA positive (may be rescreened at the discretion of the hospital)

- **Sampling Method**

Procedure for Culturing Anterior Nares

Anterior nares specimens should be obtained with a commercially prepared sterile swab. Below is an example of a method that could be used
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1. Label swab container with either the patient name or patient code.

2. Explain to the patient that you will only be touching the inside of the nostril (1-2 cm or the length of fingernail from cuticle to tip of finger). Inform the patient that it may make their nose itch, eyes water, or sneeze, but it shouldn't hurt.

3. Have participant tilt head back.

4. Carefully remove swab from packaging making sure not to touch any object with the swab tip.

5. Insert swab into each nostril (about 2 cm on an adult e.g., only swab tip disappears in nostril) without touching anything but the inside or anterior part of the nostril.

6. While rotating swab contact all surfaces of the anterior, or forward, internal part of the nasal mucosa for about 3 seconds and remove.

7. Immediately return swab into its transport container, taking care not to touch anything else with it; ensure that the swab is properly labeled and secured in the transport container according to the manufacturer's instructions; and send to laboratory for processing.

- Samples will be processed in the clinical laboratory of the hospital's choice (there will be no "central laboratory"). Culture or polymerase chain reaction (PCR) methods may be used for sample processing, depending on local hospital methods.

- Samples will be collected from hospitalized patients (including "observation" patients) within 24 hours of admission (but still reported if screened after 24 hours)

Reporting and Analysis

- Surveillance will begin January 4, 2010

- Hospitals will report results via a standardized spreadsheet as follows:

    - The number of patients admitted in each of the above categories
        - If patients are members of more than one risk group, they should be counted in each

- The number of patients in each category who had ASC ("number of patients screened in each category") within 24 hours of hospital admission
- The number of patients in each category who had ASC after the first 24 hours after hospital admission
- The number of patients testing positive for MRSA in each category
- Exclusions (and reason)
- MQF will calculate the rate of MRSA colonization as the number of patients testing positive (numerator) divided by the number of patients screened (denominator).
- In addition, information collected on each individual screened patient will include designation of each risk group the patient belongs to and whether the patient had been previously identified as infected or colonized by MRSA.
- For hospitals electing not to screen previously identified MRSA carriers, these patients will be considered screened (added to denominator) and positive (added to numerator) for each of the five risk categories which applies.

- Categories will be deemed high risk if one of the following conditions is met:

  - Category positive screening rates equal to or greater than 7% providing there are at least three positive screens, **or**

  - A category with a screening rate less than 50%

- The first hospital report on information above will cover the period of January 4, 2010 – June 30, 2010, and is due at the Maine Health Data Organization no later than September 1, 2010.

- MQF will confirm and report back to the hospital the high risk classification determination based on review of the submitted data, by December 1, 2010.

- ASC will continue for the above "potential high risk" groups pending this analysis

- After analysis and reporting, groups that fall into one of the "high risk" categories above will continue to be screened.

- Groups not meeting one of the above criteria will be considered not high risk for MRSA colonization and will not require further mandated ASC, unless subsequently implicated in a local outbreak or identified in subsequent prevalence studies.