Big Things Come In Small Packages: MRSA In The NICU

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MRSA Identified in the NICU

In the summer of 2013, an outbreak of methicillin-resistant Staphylococcus aureus (MRSA) was identified in the Neonatal Intensive Care Unit (NICU). Previously, in 2010-2012, only one “hospital onset” MRSA invasive event was identified in the NICU. By the end of October 2013, the unit identified eleven MRSA invasive events. Responding to this surge in MRSA cases, Infection Prevention (IP) and NICU team leaders collaborated to form the “NICU MRSA Prevention Bundle.”

**Project**

The “MRSA Prevention Bundle” was created and implemented throughout all three of the NICU locations in the institution. The bundle is comprised of three parts: Surveillance, Process Improvement, and Personal Protection Equipment (PPE) and Hand Hygiene. Multiple actions for MRSA transmission reduction are categorized under one of these three headings.

After education and implementation of the MRSA bundle, NICU team leaders provided ongoing audits to ensure compliance. In addition, NICU personnel were tested for MRSA colonization, and all positive personnel were prescribed treatment of mupirocin and chlorhexidine.

**Results:**

- Overall Staphylococcus aureus colonization dropped from 47% to 21%
- MRSA colonization rates dropped 35% to 7%
- Newly acquired MRSA colonization dropped 21% to 4%
- Invasive cases of MRSA dwindled from 11 (June–October) to 2 (November-March)

**Lessons Learned**

- Constant Communication
  - Prep plan meeting prior to DNA typing results
  - Daily and weekly status meetings
  - Active multidisciplinary participation at meetings
- Process
  - Occupational Health Clinic (OHC) and Micro lab: flexible and acted quickly to mobilize
  - Mobile “swab stations” on site
  - Leadership by example
- Results
  - OHC follow up with staff
  - Daily lab results in status meetings

**OPPORTUNITIES:**

- Communicate the magnitude of situation
- Include management outside of NICU
- Identify “red points” and “thresholds” for staff surveillance
- Identify the ongoing NICU MRSA colonization rate

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