IDENTIFICATION:
In November 2006, we initiated active surveillance testing (AST) in our medical/surgical ICU. This surveillance revealed patients that were colonized with MRSA that were being missed by relying on clinical specimens alone. These patients would then move from the ICU to other parts of the hospital and the need redundancy in timely notification was even more important. Staff phone calls increased especially from the ancillary areas that they were not receiving notification that a patient needed to be placed on Contact Precautions. Also with the rapid increase of community acquired MRSA, it was important to have a system in place as these patients were coming through the Emergency Room and then admitted to the hospital.

1. The problem that needed a solution was timely notification of staff that a patient needed to be placed on Contact Precautions for MRSA, VRE and other multidrug resistant organisms (MDROs). The timely notification would then allow for early implementation of the necessary precautions to remove the unidentified reservoir as a source for disease transmission.

2. Secondly, we realized that there were a number of patients being readmitted to the hospital with MRSA and VRE that were not being placed on precautions in a timely manner or were being missed during their initial admission. As the Infection Preventionist does not have a 24/7 schedule, we needed a method that would allow this process to continue during the evenings and on weekend when the Infection Preventionist was not on site.

Active Surveillance Testing (AST) – Baseline Data
Sinai Hospital of Baltimore implemented AST in three phases prior to the requirement by Maryland Healthcare Commission for public reporting of AST in critical care units. We began the AST in the medical/surgical ICU in November 2006.

In May 2007, the second phase of AST was implemented in the CCU, CICU, and our Pulmonary Infectious Disease unit. In July 2008, the last phase of AST was implemented in the PICU and NICU. All patients are screened on admission and weekly if negative on the admission screen, with the exception of the NICU where all patients are screened on admission and monthly if found to be negative. All previously known positive patients were excluded. AST data is extracted on a monthly basis from a Cerner Microbiology Statistic (MicroStat) program. The reporting of compliance was done on a monthly basis to the respective multi-disciplinary committees.

PROCESS:
The Infection Prevention and Control Department collaborated with Patient Care, Ancillary Departments, Information Systems, Performance Improvement/Risk Management to develop and implement a notification system to identify patients with MRSA and VRE. This system was designed to enhance the safety of staff and patients. Early notification allowed the removal of the unknown reservoir as a source of disease transmission.

As the systems were developed, testing was done to determine flaws before going live.

**SOLUTION:**

1. First and foremost, this work towards achieving a system change would not have been possible with out the emphasis on leadership vision, roles and responsibilities towards making progress to enhance patient safety. This leadership allowed for better positioning toward sustainable and successful future in managing multidrug resistant organisms.

2. The solution necessary was a system that would allow as developed to allow for early identification and notification of all patients with MRSA and VRE on admission and re-admission.

3. All patients with MRSA and VRE are entered into the MediPac - Admission, Discharge, and Transfer (ADT) system. The information is put into the MediPac system by the Infection Prevention and Control secretary. The presence of MRSA and/or VRE would then populate on the chief complaint line of the medical record face sheet on each admission and subsequent readmission. The system also provides a daily line list of all patients who are hospitalized with MRSA and VRE.

4. All patients with MRSA and VRE are flagged in the Cerner Power Chart by two methods.
   a. Cerner Problem list: Infection Prevention and Control enters on a Problem list that the patient has MRSA and/or VRE. When a patient’s medical record is opened, an alert fires, notifying that the patient has MRSA and/or VRE.
   b. A computer-generated alert also fires if at completion of the ER admission database that the patient has a history of MRSA and VRE on questioning by the staff. The alert remains in the system until inactivated by the Infection Preventionist.
   c. Cerner Quick Order: Infection Preventionist enters an order into the Cerner Quick Order tab that the patient needs to be placed on Contact Precautions and this task automatically fires to the Nurse PA.L (Patient Custom List).
   d. Awarix System: Once a Quick Order is entered, it then fires to the Awarix System. This system is especially helpful for the ancillary departments as the system provides real time hospital census information that keeps track of all patient movement throughout the hospital.
   e. Premier Safety Surveillor: The Infection Preventionist also has the ability through the Premier Safety Surveillor to set up real time alerts and single alert tags that sends an email of all new positive cases of MRSA and VRE and any readmissions.
   f. Contact Precaution stickers are placed on the outside of patients’ in-house medical record as a redundancy to the Cerner Power Chart alerts.

5. These systems have resulted in increase staff satisfaction. With the earlier notification, staff is able to be more compliant in placing patients on Contact Precautions and thereby reducing the risk of transmission. We also ensure that during Infection Preventionist
rounding on the units, that we monitor compliance for the presence of an isolation cart, signs posted on patients’ door and sticker placed on the patients’ medical record.