Summary Report of 2009 Mandatory Reporting MRSA Data from NJ Acute-Care Hospitals

Background

On August 2, 2007, Governor Jon Corzine signed Senate Bill 2580 into law. P.L. 2007 c.120, codified at *N.J.S.A.* 26:2H-12.35 *et seq.*, requiring that general hospitals implement an infection control program in their intensive care unit(s) or other "high-risk" settings. The specific MRSA-related activities mandated by the law include: the identification of persons with MRSA upon admission to, and transfer or discharge from, the unit where the active surveillance is being performed; institution of contact (isolation) precautions for MRSA-positive patients; and identification of patients known to be MRSA-positive upon readmission to the hospital. In addition, general hospitals are to facilitate strict adherence to hand hygiene, have a written infection control policy in place, and provide worker education that covers the following topics: how MRSA is transmitted, when and how personal protective equipment should be used, appropriate disinfection procedures, and other preventive measures. Finally, the law requires hospitals to report the number of hospital-acquired cases of MRSA that occur in their facility to the New Jersey Department of Health and Senior Services (NJDHSS). NJDHSS is responsible for reporting the law's impact on reducing MRSA infections in hospitals to the extent that funds permit.

In August 2007, NJDHSS convened a MRSA advisory group in an effort to assist hospitals with responding to the legislation. One of the identified needs was the provision of guidance to hospitals to implement infection control activities related to MRSA in a standard, evidence-based way. To this end, a working group was formed to develop this guidance. The working group was made up of over 40 members, including internal and external representatives from NJDHSS, NJ Association for Professionals in Infection Control and Epidemiology (APIC), various NJ Hospital Associations, and the Infectious Disease Society. On February 1, 2008, NJDHSS released the guidelines to the State's general hospitals via the New Jersey Local Information Network and Communication System (LINCS). Hospitals were to begin performing active surveillance testing in at least one unit within 30 days of the guidelines being released.

CDC National Healthcare Safety Network

The National Healthcare Safety Network (NHSN), managed by the federal Centers for Disease Control and Prevention (CDC), collects national data on healthcare-associated adverse events and their risk factors. NHSN is a web-based surveillance system that facilities enter facility-specific patient safety data for surveillance, prevention, or mandatory public reporting. NJ hospitals were being trained in using NHSN for other reporting requirements at the time the MRSA legislation was passed. The CDC NHSN Multidrug-Resistant Organism (MDRO) module was identified as the mechanism by which hospitals would report the above measures to NJDHSS. Due to the timing of passing NJ's legislation, reporting into the MDRO module needed to be "off-plan", not meeting CDC's data definitions, making NJ's data not comparable to any national data.

As of March 13, 2009, the MDRO module became available for use by hospitals enrolled in NHSN; however, hospitals had already begun collecting MRSA data in January 2009, in anticipation of the MDRO launch. In September 2009, NJDHSS recognized that only a small number of hospitals had appropriately conferred to NJDHSS viewing rights necessary for NJDHSS to view the MRSA-related measures reported via the MDRO module. In October 2009, NJDHSS began ongoing follow-up with hospitals to ensure MRSA data were reported correctly. Through various communications with each hospital, by the end of 2009, over 90% of hospitals were reporting some MRSA data into NHSN.

Methods

Hospital MRSA reporting

Beginning in March 2009, hospitals were required to submit to NJDHSS via the CDC NHSN MDRO: (1) the number of cases of hospital-onset MRSA bloodstream infections per 1000 patient days that have occurred in the facility, specified by hospital unit where active surveillance testing (AST) for MRSA is being performed (laboratory-identified events, or LabID events), and (2) the percentage of eligible patients who have a MRSA surveillance test performed on admission to a hospital unit where active surveillance testing for MRSA is being performed (AST compliance).

Data confirmation

Hospitals report their respective facility's data directly into NHSN. There are currently no resources for NJDHSS to perform data validation on either of the MRSA measurements hospitals are required to report. In August 2010, each hospital was sent a report via e-mail and postal mail that contained their facility-specific NHSN data for both MRSA LabID events and AST compliance for review. Hospitals were to confirm the data in their report was accurate. Non-responses from hospitals were considered confirmation of their data.

Results

The 2009 MRSA data in this report are aggregated from all 72 NJ acute-care hospitals. Altogether, 56 (82%) of 72 hospitals responded to NJDHSS with data confirmation or edits on both MRSA LabID events and AST compliance, and therefore the data provided in this summary report have been confirmed to be accurate by most of the hospitals.

The number of hospital-onset MRSA bloodstream infections per 1,000 patient days, monitored within a hospital unit where AST for MRSA is being performed using the LabID Event reporting, which is based on laboratory data only.

- A pooled rate calculation was done across all units at all hospitals in NJ for 2009.
- There were 71 laboratory-identified hospital-onset MRSA blood specimens reported for 500,165 patient days, for an incidence rate: (71/500165) *1000 = 0.142 MRSA infections per 1000 patient days.

The percentage of eligible patients who are screened for MRSA upon admission to a hospital unit where AST for MRSA is being done (i.e., adherence to MRSA admission AST).

- For 2009, an overall monthly AST compliance percentage was calculated across all units where AST was completed in NJ hospitals. The overall average monthly compliance is 94.4% (range: 93.6-95.8%), and the median monthly compliance rate is 98.0% (range: 97.1-98.7%).
- These values are based on self-reported AST compliance rates, where hospitals report the number of patients who received AST and the total number of AST-eligible patients.

Limitations

Per CDC, LabID events are proxies for infection measures of MRSA, healthcare acquisition, exposure burden, and infection burden by using primarily laboratory data. Laboratory testing results can be used without clinical evaluation of the patient, allowing for much less labor-intensive means to track MRSA in hospitals. Some data elements, such as date admitted to the patient care location, may require other data sources. Laboratory and admission data elements can be used to calculate MRSA bloodstream infection incidence rates (measure of infection burden).

In consultation with the CDC regarding interpretation of NHSN data, analyses of unpublished data for several states yielded a pooled rate for actual MRSA healthcare-acquired infections (HAIs) of 0.9 infections per 1,000 patient days, much higher than the rate calculated for NJ. LabID events would be expected to be higher than clinically diagnosed MRSA infections, since these serve only as a proxy to MRSA bloodstream infections. The CDC also looked exclusively at lower-risk units for MRSA and found an incidence rate MRSA of 0.33, also

higher than the rate reported for NJ in 2009.

For the 2009 and 2010 reporting years, NJ hospitals have only been reporting MRSA bloodstream infections in units where they performed their AST, i.e., New Jersey hospitals have been using NHSN "out of plan" for 2009-2010 because they were only reporting on a minimum of one unit. The data captured from these two years of reporting are measuring unit-onset for these MRSA bloodstream infections and are possibly missing other hospital-onset cases that occurred in non-reporting units. These missing data may be the main reason why the MRSA rates reported for 2009-2010 are so low.

Finally, since NJ's MRSA legislation was passed prior to the CDC MDRO's development, NJ had to develop its own MRSA data reporting rules. Subsequently, when the CDC's MRSA data definitions were developed, NJ's data reporting into the MDRO module was "off-plan", i.e., since NJ's data did not follow CDC's reporting definitions, NJ's data for 2009 are not comparable to any national data.

Future plans

To address the data limitations outlined previously, beginning in January 2011, MRSA reporting will be modified. Hospitals will now be required to report MRSA bloodstream infections hospital-wide for all in-patient units. Second, hospitals will now have to report all positive LabID-events which include both community-onset and hospital-onset events.

Of note, in October 2010, NJ acute-care hospital infection preventionists were trained in-person by an NHSN expert from CDC. The training, to ensure that hospitals understand the MDRO reporting definitions and use of the MDRO, was well-attended, with over 93% of the hospitals represented. With these additional reporting requirements, NJ will now be contributing to the national NHSN data on MRSA and will now be comparable with other states who are embarking on MRSA reporting. In following CDC's reporting requirements, NJ will be able to compare hospital-onset rates of MRSA with future benchmarks that will be developed for MRSA reporting. Currently, these national benchmarks are still in their early phases of development by CDC.