

HEALTHCARE-ASSOCIATED INFECTIONS IN MICHIGAN HOSPITALS

Quarterly Summary Report of Participating Hospitals January 1 – March 31, 2010

Michigan Department of Community Health Surveillance of Healthcare-Associated & Resistant Pathogens (SHARP) Unit

Introduction

The Surveillance of Healthcare-Associated & Resistant Pathogens (SHARP) Unit within the Bureau of Epidemiology at the Michigan Department of Community Health (MDCH) will quarterly provide an update on activities funded under the American Recovery and Reinvestment Act (ARRA) to address the surveillance and prevention of healthcare-associated infections (HAIs) in participating hospitals in Michigan. This report includes data that will be used to show trends in the incidence of specific multidrug-resistant organisms and organisms of interest in participating hospitals. As additional hospitals agree to participate in these activities, the information and data will vary from quarter to quarter. Also contained within this report are acronyms for frequently used terms.

Additional background information on HAIs, pertinent definitions related to HAIs, Michigan's HAI Surveillance and Prevention Plan, Michigan's HAI Prevention Advisory Group, and Michigan's collaborative initiatives funded under ARRA, can be found in the *September – December 2009 Quarterly Summary Report of Participating Hospitals*, posted at www.michigan.gov/hai. These materials will be updated as new information becomes available.

Acronyms

APIC	Association for Professionals in Infection Control & Epidemiology, Inc.
ARRA	American Recovery and Reinvestment Act
CAUTI	Catheter-Associated Urinary Tract Infection
CDC	Centers for Disease Control & Prevention
CDAD	<i>Clostridium difficile</i> -Associated Disease
CLABSI	Central Line-Associated Bloodstream Infection
HAI	Healthcare-Associated Infection
HHS	U.S. Department of Health & Human Services
MDCH	Michigan Department of Community Health
MDRO	Multidrug-Resistant Organism
MHA	Michigan Health & Hospital Association
MPRO	Michigan's Quality Improvement Organization
MRSA	Methicillin-Resistant <i>Staphylococcus aureus</i>
NHSN	National Healthcare Safety Network
SHARP	Surveillance of Healthcare-Associated & Resistant Pathogens Unit
SSI	Surgical Site Infection
VAP	Ventilator-Associated Pneumonia

Michigan Surveillance Initiative

Under ARRA funding, Michigan is currently recruiting acute care hospitals to voluntarily participate with SHARP on the surveillance of HAIs. Initial surveillance efforts are focusing on methicillin-resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile* (*C. difficile*) as identified by the hospital laboratory. Surveillance data is collected by hospitals using the National Healthcare Safety Network (NHSN), an online reporting system developed and implemented by the Centers for Disease Control and Prevention (CDC). Hospitals wishing to participate in this surveillance initiative can voluntarily agree to share their NHSN data with SHARP through use of a signed data use agreement and the ‘confer rights’ process within NHSN.

SHARP is asking participating hospitals to confer rights to their MRSA and *C. difficile* data by using the Multidrug-Resistant Organism/*Clostridium difficile*-Associated Disease (MDRO/CDAD) module, LabID Event reporting option of NHSN. The SHARP Unit’s goal is to have 30 hospitals sharing their data with MDCH by October 2010, and 50 hospitals by October 2011. NHSN data shared with SHARP will be de-identified by patient and hospital name. Reports of this data from participating hospitals will be published quarterly, and will provide a means to monitor HAI trends over time.

Summary Data

Between January 1 and March 31, 2010, six additional Michigan hospitals signed data use agreements with MDCH/SHARP to participate in SHARP’s HAI surveillance initiative; five of these have provided access to their hospitals’ data within NHSN for this quarter. This gives a total of 10 hospitals with signed Data Use Agreements and 9 hospitals that have conferred rights to NHSN data in Michigan since the beginning of the surveillance initiative. Six of these nine hospitals monitor MRSA, and five monitor *C. difficile*, using the LabID Event option of the MDRO/CDAD module. Areas of surveillance vary between the hospitals but include the intensive care unit, labor and delivery, and/or medical/surgical units of the hospital. Data from this quarter, as well as from the previous quarter, will be used to establish baselines of infection for MRSA and *C. difficile* in participating hospitals.

Participating hospitals are also using Central Line-Associated Bloodstream Infection (CLABSI), Ventilator-Associated Pneumonia (VAP), Surgical Site Infection (SSI), and Catheter-Associated Urinary Tract Infection (CAUTI) Events within the Device-Associated module of NHSN. As additional hospitals participate with the SHARP Unit and confer rights to these modules, these data may be included in future quarterly reports if sufficient numbers of hospitals begin sharing these types of data.

For this quarter (January – March 2010), 91 isolates of MRSA were reported from six hospitals who use the LabID Event option of the MDRO/CDAD module. LabID Events for MRSA are defined by NHSN as all first positive MRSA clinical isolates for each calendar month for each unique patient regardless of specimen source. Specimens must be collected for clinical purposes and not for the purpose of active surveillance testing or screening. Moreover, there is no determination of whether each MRSA isolate represents patient colonization or infection.

Data for this quarter indicate that wounds (38 isolates or 42%) and sputum (38 isolates or 42%) were the predominant overall sites for all MRSA isolates, followed by blood (12 isolates or 13%), and other (3 isolates or 3%). Twenty-nine (29) of the 91 total MRSA isolates for this quarter were reported to be healthcare-onset (32%), and the remainder (62 isolates or 68%) were reported to be community-onset. NHSN defines ‘healthcare-onset’ as a ‘LabID Event specimen collected

>3 days after admission to the facility (i.e., on or after day 4).’ ‘Community-onset’ is defined by NHSN as a ‘LabID Event specimen collected as an outpatient or an inpatient < 3 days after admission to the facility (i.e., days 1, 2, or 3 of admission).’

For this quarter, sputum accounted for the majority of healthcare-onset isolates (19 of 29 isolates or 66%), followed by wound (4 isolates or 14%), blood (4 isolates or 14%), and other (2 isolates or 7%). Twenty-two of the 29 healthcare-onset MRSA isolates were from patients in intensive care units (76%), three were from medical/surgical patients (10%), and the location of four patients was not identified (14%). The majority of community-onset isolates were from wounds (35 of 62 isolates, or 56%), followed by sputum (17 isolates or 27%), blood (9 isolates or 15%), and other (1 isolate or 2%).

Also for this quarter, there were fourteen (14) reports of *C. difficile* identified in four of five hospitals who use the LabID Event option of the MDRO/CDAD module. (One of these five hospitals had not conferred rights to *C. difficile* data for Jan – March.) Nine (9) of the 14 reports were considered to be healthcare-onset (64%) and five (36%) were reported to be community-onset. Eight of the nine healthcare-onset cases were in medical/surgical patients (89%) and one was in a special intensive care unit patient (11%).

As additional hospitals agree to participate in this surveillance initiative, additional detail on aggregated data will be provided, as well as comparison with national data. At the end of 2010, a final cumulative report will be provided for data collected for the year.

Quarterly MRSA Statistics from Participating Hospitals

	Sept – Dec 2009 MRSA Data	Jan – March 2010 MRSA Data
Total # of Hospitals Who have Conferred Rights	4	10
Total # of Hospitals with Complete Data for Quarter	4	9
# Using MDRO/CDAD Lab ID Event for MRSA	3 of 4	6 of 9
# Aggregated MRSA Isolates	71*	91*
Overall Healthcare-Onset	11%	32%
Overall Community-Onset	89%	68%
Wound Isolates	73%	42%
% Healthcare-Onset	--	14%
Sputum Isolates	20%	42%
% Healthcare-Onset	--	66%
Blood Isolates	7%	13%
% Healthcare-Onset	--	14%
Other Isolates	--	3%
% Healthcare-Onset	--	7%
ICU Patients	Unable to calculate	76%
Med/Surg Pts	Unable to calculate	10%
Unknown Location	Unable to calculate	14%

*These counts include MRSA isolates from ER patients who were **not** admitted to the hospital during these 2 quarters. All of these isolates were considered community-onset.

Quarterly *C. difficile* Statistics from Participating Hospitals

	Sept – Dec 2009 <i>C. difficile</i> Data	Jan – March 2010 <i>C. difficile</i> Data
Total # of Hospitals Who have Conferred Rights	4	10
Total # of Hospitals with Complete Data for Quarter	4	8
# Using MDRO/CDAD Lab ID Event for <i>C. difficile</i>	3 of 4	4 of 8
# Aggregated <i>C. difficile</i> reports	18	14
Healthcare-Onset	0%	64%
Community-Onset	100%	36%
ICU Patients	Unable to calculate	11%
Med/Surg Pts	Unable to calculate	89%
Other Location	Unable to calculate	--