

HEALTHCARE-ASSOCIATED INFECTIONS IN MICHIGAN HOSPITALS

Quarterly Summary Report of Participating Hospitals July 1 –Sept 30, 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) which addresses the surveillance and prevention of healthcare-associated infections (HAIs) in participating hospitals in Michigan. This report will include data that can be used to show trends in the incidence of specific multidrug-resistant organisms. As additional hospitals agree to participate in these activities, the information and data will vary from quarter to quarter. The report also contains 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. All quarterly and annual reports will be posted at this website.

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

Surveillance Initiative Statistics

Between July 1 and September 30, 2010, seventeen (17) Michigan hospitals were participating in SHARP's HAI surveillance initiative. Ten (10) of these hospitals were monitoring MRSA, and nine (9) were monitoring *C. difficile*, using the LabID Event option of the MDRO/CDAD module. Areas of surveillance varied between the participating hospitals but could include the intensive care unit (ICU), labor and delivery, and/or medical/surgical units dependent upon individual hospital choice. Data from this quarter, as well as from the previous three quarters, are being used to help establish baselines rates of positive laboratory tests for MRSA and *C. difficile* in participating hospitals.

Of the seventeen participating hospitals during this quarter, most are also collecting data from other modules within NHSN: Central Line-Associated Bloodstream Infection (CLABSI – 13 hospitals), Ventilator-Associated Pneumonia (VAP – 13 hospitals), Surgical Site Infection (SSI – 9 hospitals), and Catheter-Associated Urinary Tract Infection (CAUTI – 5 hospitals). As additional hospitals participate with the SHARP Unit and confer rights to these modules, summaries of these data may be included in future quarterly reports if sufficient numbers of hospitals begin sharing these types of data.

MRSA Data

Between July 1 and September 30, 2010, 230 isolates of MRSA were reported from nine (9) of ten (10) participating hospitals who use the LabID Event option of the MDRO/CDAD module. One of the ten hospitals did not report any MRSA during this quarter. 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. Note that within the MDRO/CDAD module of NHSN there is no determination of whether a MRSA isolate represents patient colonization or infection.

Data for this quarter indicate that wounds (113 isolates or 49% of all MRSA specimens) and sputum (46 isolates or 20% of all MRSA specimens) were the predominant overall sites for all MRSA isolates this quarter, followed by abscesses (6 isolates or 3%) and urinary specimens (12 isolates or 5% of all MRSA specimens), blood (9 isolates or 4%), and other (44 isolates or 19% of all MRSA isolates).

Thirty-five (35) of the 230 total MRSA isolates for this quarter were reported to be healthcare-onset (15%), and the remainder (195 isolates or 85%) 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 again accounted for the majority of MRSA **healthcare-onset** isolates (23 of 35 isolates or 66%), blood (1 isolate or 3%), wound (3 isolates or 9%), and other (8 isolates or 23%) of all healthcare-onset isolates. Twenty-nine (83%) of the 35 healthcare-onset MRSA isolates were from patients in intensive care units, and six (17%) were from patients in medical/surgical units. The majority of **community-onset** isolates were from wounds (110 of 195 isolates, or 56%), followed by sputum (23 isolates or 12%), abscess (6 or 3%) and urinary (12 isolates or 6%), blood (8 isolates or 4%), and other (36 isolates or 18%). Thirty four (17%)

of the community-onset MRSA isolates were from patients in intensive care units, 38 (19%) were from patients in medical/surgical units, 117 (60%) were from outpatients, and 6 (3%) were from other locations of the hospital.

C. difficile Data

For this quarter, there were 140 reports of *C. difficile* identified in eight of the nine hospitals which used the LabID Event option of the MDRO/CDAD module. One of the nine hospitals did not report any *C. difficile* for this quarter. Forty-nine (49) of the reports were considered to be **healthcare-onset** (35%), 29 (21%) were considered to be **community-onset healthcare-facility associated**, and 62 (44%) were reported to be **community-onset**. *Community-onset healthcare facility-associated* is defined as a 'community-onset LabID Event collected from a patient who was discharged from the facility \leq 4 weeks prior to date stool specimen collected.' Ten (63%) of the 16 healthcare-onset cases were in ICU patients, and six (37%) were in Med/Surg patients.

Summary of Quarterly Data

A summary of quarterly data collected from participating hospitals since September 2009 is attached to this report. Note that data from previous quarters has not been updated when additional hospitals are added each quarter, even though these additional hospitals may have provided back data to the SHARP Unit. At the end of 2010, a final cumulative report will be provided with data collected from all participating hospitals for the entire year. This final report will include updated data for each quarter.

MRSA Data from Participating Hospitals – FY 2010

	Sept – Dec 2009 MRSA Data	Jan – March 2010 MRSA Data	Apr – June 2010 MRSA Data	July - Sept 2010 MRSA Data
Total # of Hospitals Who have Conferred Rights	4	10	14	17
Total # of Hospitals with Complete Data for Quarter	4	9	14	17
# Using MDRO/CDAD Lab ID Event for MRSA	3 of 4	6 of 9	7 of 14	10 of 17
# Aggregated MRSA Isolates	71	91	148	230
Overall Healthcare- Onset	11%	32%	(19) 13%	(35) 15%
Overall Community- Onset	89%	68%	(129) 87%	(195) 85%
Wound Isolates	73%	42%	(47) 32%	(113) 49%
% Healthcare-Onset	--	14%	(2) 11%	(3) 6%
Sputum Isolates	20%	42%	(39) 27%	(46) 20%
% Healthcare-Onset	--	66%	(10) 53%	(23) 50%
Blood Isolates	7%	13%	(8) 5%	(9) 4%
% Healthcare-Onset	--	14%	(3) 16%	(1) 11%
Abscess Isolates			(13) 9%	(6) 3%
% Healthcare-Onset			(0) 0%	(0) 0%
Urinary Specimen			(13) 9%	(12) 5%
% Healthcare-Onset			(0) 0%	(0) 0%
Other Isolates	--	3%	(28) 19%	(44) 19%
% Healthcare-Onset	--	7%	(4) 21%	(8) 18%
ICU Patients	Unable to calculate	76%	(16) 84%	(29) 83%
Med/Surg Pts	Unable to calculate	10%	(1) 5%	(6) 17%
Other Location			(0) 0%	(0) 0%
Unknown Location	Unable to calculate	14%	(2) 11%	--

C. difficile Data from Participating Hospitals -- FY 2010

	Sept – Dec 2009 <i>C. difficile</i> Data	Jan – March 2010 <i>C. difficile</i>	Apr – June 2010 <i>C. difficile</i>	July – Sept 2010 <i>C. difficile</i>
Total # of Hospitals Who have Conferred Rights	4	10	14	17
Total # of Hospitals with Complete Data for Quarter	4	8	14	17
# Using MDRO/CDAD Lab ID Event for <i>C. difficile</i>	3 of 4	4 of 8	7 of 14	9 of 17
# Aggregated <i>C. difficile</i> reports	18	14	57	140
Healthcare-Onset	0%	64%	(18) 32%	(49) 35%
Comm-Onset Healthcare- Assoc			(15) 26%	(29) 21%
Community-Onset	100%	36%	(24) 42%	(62) 44%
ICU Patients	Unable to calculate	11%	(10) 56%	(10) 63%
Med/Surg Pts	Unable to calculate	89%	(7) 39%	(6) 37%
Other Location/Unknown	Unable to calculate	--	(1) 6%	--