

Healthcare Associated Infection Prevention Plan Montana Department of Public Health and Human Services Communicable Disease Epidemiology Program

Healthcare associated infections (HAI) are infections that occur during or as a consequence of the provision of healthcare. It is estimated that approximately 5% of all admissions to hospitals acquire an HAI nationwide resulting in 1.7 million infections, 99,000 associated deaths and \$26-33 billion in excess costs. Although the exact impact of HAIs in Montana is not known, it can be construed from national information that there is a similar impact in the 54 acute care hospitals in the state.

There are no state specific legislative mandates for reporting, preventing or controlling HAIs in Montana and there has been no activity on this topic during the last two legislative sessions. However, there are general administrative rules that provide for control of communicable diseases “with a frequency in excess of normal expectancy” in any community setting (ARM 37.114.204). These rules have supported the Montana Department of Public Health and Human Services (MTDPHHS) Communicable Disease Epidemiology Program in assisting health care facilities when clusters of infection occur in those settings.

There are two professional groups that have worked closely over the last several years to discuss HAI issues of importance to hospitals in the state – the Montana Chapter of the Association for Professionals in Infection Control and Epidemiology and the Infectious Disease Physician Network. Individual facilities in the state have participated in leading edge HAI prevention programs (positive deviance, Institute for Healthcare Improvement collaborative). There is great interest in the state by both infection preventionists and infectious disease physicians in working together in a collaborative fashion to standardize approaches and implement prevention and control programs that will benefit the citizens of the state. In addition, there is a broad base of support for these activities as evidenced by letters of support from the following groups during the process of applying for American Recovery and Reinvestment Act funding: Benefis Healthcare, Billings Area Indian Health Services, Mountain-Pacific Quality Healthcare Foundation, Montana Health Research and Education Foundation, APIC-Montana and MTDPHHS Quality Assurance Division Certification Bureau.

The MTDPHHS has been awarded \$201,830 by the U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), American Recovery and Reinvestment Act, Epidemiology and Laboratory Capacity for Infectious Diseases (ELC), Healthcare-Associated Infections – Building and sustaining State Programs to Prevent Healthcare-associated Infections grant. Funding was provided for the following activities, commencing in January 2010:

Activity A: Because there is no existing infrastructure for HAI prevention activities at the state level, the first step is to provide basic staffing and coordination to draft the State HAI Prevention Plan and establish capacity to develop an HAI prevention program. This will include hiring an HAI Prevention Program Manager within the MTDPHHS Communicable Disease Epidemiology Program and

forming the Montana Healthcare Associated Infection Prevention Advisory Committee (MHAIPAC). The MHAIPAC will be a multidisciplinary advisory group to provide input into the development and implementation of a state HAI plan. It is anticipated that the plan will evolve over the next two years, based on more robust input from this advisory group.

Activity B: This activity aims to increase facility participation in the National Healthcare Safety Network (NHSN) and use NHSN software to establish baseline HAI data for the state. Because 47 of the 61 hospitals in the state are critical access hospitals with 25 beds or less, the focus on voluntary facility participation in NHSN will be on 11 non-critical access facilities that account for the majority of hospital admissions in the state. The goal is to enroll 8 facilities in voluntary reporting to the NHSN.

1. Develop HAI Prevention Program Infrastructure

Successful HAI prevention requires close integration and collaboration with state and local infection prevention activities and systems. Consistency and compatibility of HAI data collected across facilities will allow for greater success in reaching state and national goals. Please select areas for development or enhancement of state HAI surveillance, prevention and control efforts.

Table 1: State infrastructure planning for HAI surveillance, prevention and control.

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Establish statewide HAI prevention leadership through the formation of multidisciplinary MHAIPAC	First meeting February 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> i. Collaborate with multidisciplinary local and regional partners ii. Identify specific HAI prevention targets consistent with HHS priorities 	
			<i>Other activities or descriptions (not required):</i> <ul style="list-style-type: none"> iii. Develop operational guidelines, goals & objectives and meeting schedule for MHAIPAC 	March 2010

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Establish an HAI surveillance prevention and control program <ol style="list-style-type: none"> i. Designate a State HAI Prevention Program Manager ii. Develop dedicated, trained HAI staff with at least one FTE (or contracted equivalent) to oversee the four major HAI activity areas (Integration, Collaboration, and Capacity Building; Reporting, Detection, Response and Surveillance; Prevention; Evaluation, Oversight and Communication) 	Interim – Oct 2009 Permanent – Jan 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Integrate laboratory activities with HAI surveillance, prevention and control efforts. <ol style="list-style-type: none"> i. Improve laboratory capacity to confirm emerging resistance in HAI pathogens and perform typing where appropriate 	March 2010
Level II	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Improve coordination among government agencies or organizations that share responsibility for assuring or overseeing HAI surveillance, prevention and control (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)	March 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Facilitate use of standards-based formats (e.g., Clinical Document Architecture, electronic messages) by healthcare facilities for purposes of electronic reporting of HAI data.	June 2010
			<i>Other activities or descriptions (not required):</i> <ol style="list-style-type: none"> i. NHSN training (2 days) for all facilities and other interested parties 	April 2010

2. Surveillance, Detection, Reporting, and Response

Timely and accurate monitoring remains necessary to gauge progress towards HAI elimination. Public health surveillance has been defined as the ongoing, systematic collection, analysis, and interpretation of data essential to the planning, implementation, and evaluation of public health practice, and timely dissemination to those responsible for prevention and control.¹ Increased participation in systems such as the National Healthcare Safety Network (NHSN) has been demonstrated to promote HAI reduction.

The Montana HAI Prevention Plan will focus on developing targets and metrics for two of the HHS Action Plan categories of HAIs, dependent upon the consensus of the MHAIPAC:

- *Clostridium difficile* Infections (CDI)
- Catheter-associated Urinary Tract Infections (CAUTI)

These are subject to change as the MHAIPAC meets and makes decisions about the group's focus.

Montana is also committed to assisting in the investigation and response to outbreaks and emerging infections among patients and healthcare providers as needed and will strive to maintain the competency to be able to provide this service.

¹ Thacker SB, Berkelman RL. Public health surveillance in the United States. *Epidemiol Rev* 1988;10:164-90.

Table 2: Montana Planning for Surveillance, Detection, Reporting and Response for HAIs

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Improve HAI outbreak detection and investigation	
			i. Work with partners including CSTE, CDC, state legislatures, and providers across the healthcare continuum to improve outbreak reporting to state health departments	January 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ii. Establish protocols and provide training for health department staff to investigate outbreaks, clusters or unusual cases of HAIs.	July 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	iii. Develop mechanisms to protect facility/provider/patient identity when investigating incidents and potential outbreaks during the initial evaluation phase where possible to promote reporting of outbreaks	July 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	iv. Improve overall use of surveillance data to identify and prevent HAI outbreaks or transmission in HC settings (e.g., hepatitis B, hepatitis C, multi-drug resistant organisms (MDRO), and other reportable HAIs)	January 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Enhance laboratory capacity for state and local detection and response to new and emerging HAI issues.	January 2011
Level II	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Improve communication of HAI outbreaks	July 2010
			i. Develop standard reporting criteria including number, size and type of HAI outbreak for LHDs and CDC	

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level II	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ii. Establish mechanisms or protocols for exchanging information about outbreaks or breaches among state and local governmental partners (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)	September 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Identify at least 2 priority prevention targets for surveillance in support of the HHS HAI Action Plan	March 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. <i>Clostridium difficile</i> Infections (CDI)	Other topics, depending on MHAIPAC consensus
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ii. Catheter-associated Urinary Tract Infections (CAUTI)	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Adopt national standards for data and technology to track HAIs (e.g., NHSN).	December 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. Develop metrics to measure progress towards national goals (align with targeted state goals). (See Appendix 1). ii. Establish baseline measurements for prevention targets	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Develop state surveillance training competencies	April 2010	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	i. Conduct local training for appropriate use of surveillance systems (e.g., NHSN) including facility and group enrollment, data collection, management, and analysis		
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Develop tailored reports of data analyses for state or region prepared by state personnel	March 2011	
Level III	<input type="checkbox"/>	<input checked="" type="checkbox"/>	8. Validate data entered into HAI surveillance to measure accuracy and reliability of HAI data collection	January 2011

3. Prevention

Implementation of the HHS Healthcare Infection Control Practices Advisory Committee (HICPAC) recommendations is a critical step towards the prevention of HAIs. These evidence-based guidelines have been translated into practice and implemented by multiple groups in hospital settings for the prevention of HAIs, including the Joint Commission standards for accreditation of hospitals. The Montana HAI Prevention Program will focus on ensuring that all health care providers are aware of these and other evidence-based recommendations for prevention of HAIs through communication and education.

Table 3: Montana Planning for HAI Prevention Activities

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Implement HICPAC recommendations. i. Develop strategies for implementation of HICPAC recommendations for at least 2 prevention targets specified by the state multidisciplinary group.	January 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Establish prevention working group under the state HAI advisory council to coordinate state HAI collaborative i. Enhance existing HAI collaboratives in the state by working with existing projects (e.g., MPQHF or MHREF PIN)	January 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Coordinate/liaise with regulation and oversight activities such as inpatient or outpatient facility licensing/accrediting bodies and professional licensing organizations to prevent HAIs	January 2011

4. Evaluation and Communications

Program evaluation is an essential organizational practice in public health. Continuous evaluation and communication of practice findings integrates science as a basis for decision-making and action for the prevention of HAIs. Evaluation and communication allows for learning and ongoing improvement to occur. Routine, practical evaluations can inform strategies for the prevention and control of HAIs. The Montana HAI Prevention Program will ensure that appropriate feedback on program activities is obtained in order to improve approaches. In addition, the Program will communicate its activities to all stakeholders in a timely fashion.

Table 4: Montana HAI communication and evaluation planning

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Conduct needs assessment and/or evaluation of the state HAI program to learn how to increase impact	January 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<ul style="list-style-type: none"> i. Establish evaluation activity to measure progress towards targets and ii. Establish systems for refining approaches based on data gathered 	July 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Develop and implement a communication plan about the state's HAI program and progress to meet public and private stakeholders needs <ul style="list-style-type: none"> i. Disseminate state priorities for HAI prevention to healthcare organizations, professional provider organizations, governmental agencies, non-profit public health organizations, and the public 	July 2010

Appendix 1.

Montana will use metrics and 5-year prevention targets as developed by the HHS Action plan to guide its HAI prevention activities. These metrics and prevention targets were developed by representatives from various federal agencies, the Healthcare Infection Control Practices Advisory Committee (HICPAC), professional and scientific organizations, researchers, and other stakeholders. The group of experts was charged with identifying potential targets and metrics for six categories of healthcare-associated infections and Montana will use two of these as highlighted below:

- Central Line-associated Bloodstream Infections (CLABSI)
- ***Clostridium difficile Infections (CDI)***
- ***Catheter-associated Urinary Tract Infections (CAUTI)***
- Methicillin-resistant Staphylococcus aureus (MRSA) Infections
- Surgical Site Infections (SSI)
- Ventilator-associated Pneumonia (VAP)

Below is a table of the revised metrics described in the HHS Action plan. Please select items or add additional items for state planning efforts.

Metric Number and Label	Original HAI Elimination Metric	HAI Comparison Metric	Measurement System	National Baseline Established (State Baselines Established)	National 5-Year Prevention Target	Coordinator of Measurement System	Is the metric NQF endorsed?
1. CLABSI 1	CLABSIs per 1000 device days by ICU and other locations	CLABSI SIR	CDC NHSN Device-Associated Module	2006-2008 (proposed 2009, in consultation with states)	Reduce the CLABSI SIR by at least 50% from baseline or to zero in ICU and other locations	CDC	Yes [†]
2. CLIP 1 (formerly CLABSI 4)	Central line bundle compliance	CLIP Adherence percentage	CDC NHSN CLIP in Device-Associated Module	2009 (proposed 2009, in consultation with states)	100% adherence with central line bundle	CDC	Yes [†]

Metric Number and Label	Original HAI Elimination Metric	HAI Comparison Metric	Measurement System	National Baseline Established (State Baselines Established)	National 5-Year Prevention Target	Coordinator of Measurement System	Is the metric NQF endorsed?
3a. C diff 1	Case rate per patient days; administrative/discharge data for ICD-9 CM coded <i>Clostridium difficile</i> Infections	Hospitalizations with <i>C. difficile</i> per 1000 patient discharges	Hospital discharge data	2008 (proposed 2008, in consultation with states)	At least 30% reduction in hospitalizations with <i>C. difficile</i> per 1000 patient discharges	AHRQ	No
3b. C diff 2 (new)		<i>C. difficile</i> SIR	CDC NHSN MDRO/CDAD Module LabID [‡]	2009-2010	Reduce the facility-wide healthcare facility-onset <i>C. difficile</i> LabID event SIR by at least 30% from baseline or to zero	CDC	No
4. CAUTI 2	# of symptomatic UTI per 1,000 urinary catheter days	CAUTI SIR	CDC NHSN Device-Associated Module	2009 for ICUs and other locations 2009 for other hospital units (proposed 2009, in consultation with states)	Reduce the CAUTI SIR by at least 25% from baseline or to zero in ICU and other locations	CDC	Yes*
5a. MRSA 1	Incidence rate (number per 100,000 persons) of invasive MRSA infections	MRSA Incidence rate	CDC EIP/ABCs	2007-2008 (for non-EIP states, MRSA metric to be developed in collaboration with EIP states)	At least a 50% reduction in incidence of healthcare-associated invasive MRSA infections	CDC	No

Metric Number and Label	Original HAI Elimination Metric	HAI Comparison Metric	Measurement System	National Baseline Established (State Baselines Established)	National 5-Year Prevention Target	Coordinator of Measurement System	Is the metric NQF endorsed?
5b. MRSA 2 (new)		MRSA bacteremia SIR	CDC NHSN MDRO/CDAD Module LabID [‡]	2009-2010	Reduce the facility-wide healthcare facility-onset MRSA bacteremia LabID event SIR by at least 25% from baseline or to zero	CDC	No
6. SSI 1	Deep incision and organ space infection rates using NHSN definitions (SCIP procedures)	SSI SIR	CDC NHSN Procedure-Associated Module	2006-2008 (proposed 2009, in consultation with states)	Reduce the admission and readmission SSI [§] SIR by at least 25% from baseline or to zero	CDC	Yes [¶]
7. SCIP 1 (formerly SSI 2)	Adherence to SCIP/NQF infection process measures	SCIP Adherence percentage	CMS SCIP	To be determined by CMS	At least 95% adherence to process measures to prevent surgical site infections	CMS	Yes

^{*} NHSN SIR metric is derived from NQF-endorsed metric data

[†] NHSN does not collect information on daily review of line necessity, which is part of the NQF

[‡] LabID, events reported through laboratory detection methods that produce proxy measures for infection surveillance

[§] Inclusion of SSI events detected on admission and readmission reduces potential bias introduced by variability in post-discharge surveillance efforts

[¶] The NQF-endorsed metric includes deep wound and organ space SSIs only which are included the target.