

January 2016

Minnesota Action Plan for the Prevention of Healthcare-Associated Infections

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Minnesota Action Plan for the Prevention of Healthcare-Associated Infections, January 2016

Executive Summary

In recent years, attention has been drawn to healthcare-associated infections (HAIs) as a major public health problem. This is due in large part to the 1999 Institute of Medicine report, To Err is Human, and a follow up report revealing that little improvement had been made in reducing mortality and morbidity attributed to healthcare in subsequent years. In 2009, the National Action Plan to Prevent Health Care-Associated Infections: Roadmap to Elimination was released by the U.S. Department of Health and Human Services (HHS). Also in 2009, funds were provided to states through the American Reinvestment and Recovery Act and, in turn, each state was to provide a state-specific HAI prevention action plan to HHS. At that time, the Minnesota HAI Prevention Advisory Group was established and the first Minnesota action plan was written.

Since that time, the Action Plan has been revised twice. This document represents the third version of the plan and focuses on Minnesota Department of Health (MDH) activities in collaboration with our health care and quality improvement partners to reduce HAIs. Many stakeholders have provided input, especially those member organizations of the Advisory Group (Appendix A). The Action Plan supports the Advisory Group's Vision (that individuals are protected from acquiring infections as a result of their health care) and Mission (to prevent HAIs across the continuum of care in Minnesota). MDH will use the Action Plan as a guide for our work plan in 2016 and as a tool for measuring progress. It is our hope that it will also serve as a reference for other individuals and organizations as they plan and operationalize their own prevention activities.

In public health, logic models are often used for planning and evaluation. In this instance, a reverse logic model was used in order to 'begin with the end in mind.' Beginning with a goal of zero preventable infections, we established long-term outcomes (achieved in 5 years) and from there determined mid-term outcomes (2-3 years) and short-term outcomes (1 year). Activities that support those outcomes and related outputs were then identified and incorporated in the plan.

The plan has been divided into six broad categories of activities:

- MDH staff demonstrate infection prevention and HAI surveillance expertise
- Healthcare facility denominators are established and the infection prevention needs of the healthcare facilities are assessed
- Interventions are implemented based on assessed needs of the healthcare facilities (using data for action)
- MDH facilitates collaboration with and among experts in antimicrobial stewardship
- Assess the antimicrobial stewardship needs of One Health Partners

- Implement antimicrobial stewardship interventions based on assessed needs and capacity

We have attempted to devote special attention to several priority areas within these broad categories. Based on National Healthcare Safety Network (NHSN) data from early 2015, Minnesota hospitals overall have excess catheter-associated urinary tract infections (CAUTI) in intensive care units and surgical site infections (SSI) related to colo-rectal surgery and abdominal hysterectomies compared to hospitals in other states. We need to develop a better understanding of why this is so in order to implement effective strategies for improvement.

While Minnesota rates of infection due to antimicrobial resistant organisms appear to be less than the national average at this time, we cannot be complacent about the threat that antimicrobial resistance poses to having effective treatments for HAIs and other infections in the future. Minnesota must continue its activities and participate in global efforts to preserve the usefulness of antibiotics.

In 2014, Ebola Virus Disease was introduced in the United States for the first time. This provided an important reminder that health care facilities and health departments need to be vigilant and prepared to recognize and safely care for individuals with contagious, highly pathogenic diseases. To that end, this plan includes activities for HAI surveillance and program staff to work more closely with emergency preparedness professionals to ensure that facilities and the health care system have the tools and resources to provide safe and effective care while protecting patients, staff, and visitors from transmission of these and other infections.

Finally, infection prevention is a highly specialized discipline. Finding and retaining staff with expertise in this area is a challenge for health care facilities, quality organizations, and health departments alike. Many ambulatory settings have little access to infection prevention oversight. With current funding through the Epidemiology and Laboratory Capacity Ebola Supplemental Grant, MDH has the opportunity to build its own capacity for HAI surveillance, outbreak detection and response through adding experienced staff and providing additional training for current staff. These staff in turn can work with facilities across the spectrum of care to assist them in conducting an assessment of their current capacity, enhancing their programs, and finding creative solutions for sustainable infection prevention initiatives throughout the state and across the continuum of care.

There are many contributing causes of HAI and many needs to be addressed. This plan attempts to identify and prioritize those needs and to provide a blueprint for tackling them in Minnesota.

Minnesota State Action Plan for the Prevention of Healthcare-Associated Infections

Introduction

Prevention of healthcare-associated infections (HAIs) has been prioritized as one of the Centers for Disease Control and Prevention's (CDC's) Winnable Battles. Recent reports demonstrate some progress but there is still much room for improvement as one in twenty-five hospitalized patients continue to be affected by HAIs. HAIs are not confined to hospitals and large outbreaks have occurred in outpatient settings such as endoscopy centers and oncology and pain remediation centers due to major lapses in infection prevention practices.

Other concerning trends include the increase in number and severity of healthcare-related *Clostridium difficile* infections (CDI) in recent years as well as the increasing incidence of multi-drug resistant organisms among HAIs, especially among a group of gram negative bacteria called carbapenem-resistant Enterobacteriaceae (CRE). CRE and CDI have been singled out as urgent threats in CDC's Antibiotic Resistance Threats in the United States, 2013. CRE has been dubbed as the nightmare bacteria because its antibiotic resistance genes are readily shared with other bacteria and it is virtually impossible to treat with antibiotics due to its resistance mechanisms. Additionally, the Ebola Virus Disease outbreak in 2014 provided an alarming reminder of the importance of vigilance and preparedness for emerging infectious disease in preventing HAIs among patients and staff.

Ten tested and proven strategies for the reduction/elimination of HAI have been identified by the U.S. Department of Health and Human Services (HHS) in their National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination:

For frontline clinicians

- Reducing inappropriate/unnecessary device use
- Improving adherence to hand hygiene and barrier precautions
- Implementing and improving antimicrobial stewardship

For clinical leaders, executives, and administrators

- Demonstrating leadership support at the highest levels of the facility
- Implementing a culture of safety

For government, advocates, clinical leaders, and administrators

- Enhancing financial incentives and regulatory oversight
- Implementing system-based approaches/protocols/checklists
- Achieving better use of technology
- Improving public reporting of credible data
- Enhancing traditional and non-traditional partnerships

The Minnesota Department of Health strives to incorporate these strategies in its efforts to reduce HAI and encourages frontline clinicians, clinic leaders, executives, and administrators to do the same.

Developing the Renewed Plan

This revised plan builds on the original action plan that was written in 2009 and the 2014-2015 revised plan and reflects input that was gathered from stakeholders over the course of three years through Advisory Group discussions, individual interviews, and survey questions. Very little data on the incidence of HAI in Minnesota was available when the original plan was written. More HAI data are available now and, to the extent possible, have been taken into account in further developing the plan.

Background

National scope, epidemiology, cost

HHS established a senior-level Steering Committee for the Prevention of Healthcare-Associated Infections in 2008 in response to a 1999 Institute of Medicine report that summarized the prevalence and cost of HAIs in terms of dollars and lives lost and a follow up report revealing that little progress had been made in subsequent years. HHS reports in its action plan that hospital-acquired infections were a leading cause of death and over one million HAIs occurred across health care annually creating \$28 to \$33 billion in potentially preventable health care expenditures annually. After the steering committee developed its national HAI action plan, HHS provided support for all states to develop their own HAI action plans as part of the American Recovery and Reinvestment Act (ARRA). The national plan was revised in 2013 and new baselines for tracking progress will be established based on 2015 data.

HAI prevention in Minnesota

Prior to 2009, the tracking of HAIs and HAI prevention efforts were fragmented in Minnesota. HAI prevention was not recognized as a public health problem. In 2007, the state legislature passed a law requiring Minnesota hospitals to report selected HAIs to the Minnesota Hospital Association for the purpose of public reporting. One staff person at MDH was designated to address HAI issues, and healthcare facilities implemented infection prevention programs using tools/partnerships offered by professional organizations and/or non-profit organizations.

ARRA funding from 2009 through 2011 made it possible to establish a state HAI Prevention Advisory Group for the Minnesota Department of Health, Stratis Health (the Minnesota quality improvement organization), and the Minnesota Hospital Association (MHA) to work together on two HAI prevention collaboratives: SAFE from CDI and SAFE from Surgical Site Infections (SSI). In 2011, MDH, Stratis Health, MHA, and the Minnesota Chapter of the Association of

Professionals in Infection Prevention and Epidemiology (APIC-MN) formed the Collaborative HAI Network (CHAIN) to continue to work together coordinating state HAI prevention efforts. In 2012, MHA received funding to become a hospital engagement network through HHS' Partnership for Patients.

Beginning in 2011, the Centers for Medicare and Medicaid (CMS) required inpatient prospective payer system (IPPS) hospitals to report selected HAIs to CDC's National Healthcare Safety Network (NHSN), a web-based reporting tool, for public reporting on the CMS website, Hospital Compare. This reporting was similar but somewhat different than the state reporting requirements. In 2013, state reporting requirements were changed to align with CMS requirements. In 2014, critical access hospitals were required to report facility wide catheter-associated urinary tract infections (CAUTI) to NHSN in order to fulfill the legislative requirement that all hospitals report HAI. MDH has entered a data use agreement with CDC and has access to most NHSN data beginning January 1, 2014.

Limited data are available about the incidence of HAI in Minnesota healthcare settings. What is known is that Minnesota's hospital intensive care units compare favorably with the national average for preventing central-line bloodstream infections (CLABSI) but do not fare as well in preventing CAUTI. Minnesota hospitals are also noted to have more surgical site infections following abdominal hysterectomy and colon surgery than the national averages. Minnesota compares favorably to the national average in regard to MRSA infections and somewhat less so for *C. difficile* infections.

History of the Minnesota HAI Prevention Action Plan

The first Minnesota HAI Prevention Action Plan was written in 2009 in coordination with ARRA. With input from the Minnesota HAI Prevention Advisory Group, it focused on building infrastructure and implementing two HAI prevention initiatives selected based on needs identified by Minnesota infection preventionists. The original focus was primarily on MDH activities and the Action Plan was written following the template provided by HHS.

Much has changed since the 2009 Action Plan was written. ARRA funding ended, HAI reporting has been incentivized through CMS programs for larger hospitals and hemodialysis centers, and the collaboration among organizations in Minnesota with an interest in preventing HAIs has grown. The revised 2014-2015 Action Plan was intended to serve as a roadmap for all HAI prevention efforts in Minnesota, to be a living document that could readily be adapted to changes as needed, and to serve as a measurement tool for tracking progress in efforts to end HAIs in Minnesota.

CDC required states to update their action plans in 2015, in part to ensure that appropriate steps were in place to address EVD and other highly pathogenic emerging disease threats. The 2016 Action Plan reflects this and focuses primarily on MDH activities. This Action Plan remains

a living document and if it is found it does not adequately meet Minnesota's HAI prevention needs the format will be further readjusted. For this Action Plan, the CDC template has been incorporated as an appendix (Appendix D) and provides a narrative description of current and planned activities.

Action Plan Overview

Vision, Purpose, Goals

The Minnesota HAI Prevention Advisory Group envisions that, in Minnesota, individuals will be protected from acquiring infections that result from their health care. The mission of the Advisory Group is to prevent HAI across the continuum of care. To that end, the Advisory Group has developed the Action Plan to serve as a comprehensive framework that all organizations can use as a reference as they operationalize their HAI prevention activities. Additionally, the plan provides a means to assess progress in HAI prevention statewide and can reveal gaps in prevention efforts. The Advisory Group will evaluate the effectiveness of the plan and recommend revisions as needed on an annual basis.

Structure

HAI prevention is complex and problems/efforts can be categorized in a variety of ways. HAI involve many different pathogens and types of infections. The various settings where health care takes place have unique characteristics and pose different challenges when it comes to establishing effective prevention programs. While there are a core set of prevention practices, a one-size-fits-all approach to prevention is not effective. For instance, establishing adherence to a bundle of steps for central line insertion has been very successful in reducing CLABSI but no similar bundle has been identified to date for preventing surgical site infections. In addition, while the immediate cause of an infection may be straightforward (e.g. MRSA on a caregiver's hands transferred to a patient's incision) the remote causes may be less evident and multifactorial (short staffing leading to increased workload, suboptimal placement of hand hygiene supplies, and a workplace culture that does not highly value infection prevention).

Because HAIs are not a single disease entity nor will a single approach adequately address all of them, this action plan represents a multifaceted approach to HAI prevention. The Advisory Group identified specific areas of most immediate concern for 2014 -2015 (see Appendix C) and these remain so in 2016. While we focus our efforts on these high priority issues, we will not neglect others and will continue initiatives that are already under way. We will also monitor for changes that would indicate a need to reassess priorities. Also, in many instances, prevention practices put in place to impact one type of HAI will reduce the occurrence of other HAIs as well.

An action plan template provided by CDC was used as a tool to determine where we are now in terms of HAI prevention and where we would like to go. A narrative of the current status of HAI prevention and future plans is included in this template and can be found in Appendix D.

Logic models are often used in public health for planning and evaluation purposes. A reverse logic model has been utilized in the development of this action plan, 'beginning with the end in mind.' First, long-term outcomes that would be an indication of progress toward the goal of zero preventable infections were outlined and from them mid-term outcomes were determined. Then short-term outcomes that could reasonably be accomplished in a year were identified along with supporting activities and outputs. A listing of the long-, mid-, and short-term outcomes can be found in Appendix E.

Following is the Action Plan organized by six major, broad activities with a list of supporting activities and related measurable outputs. Progress in HAI prevention will be measured both by outcomes (numbers and rates of HAIs) and accomplishment of activities and outputs.

This Action Plan is necessarily MDH-centric. It is the hope, though, of those developing the plan that it will be used to inform and guide efforts in HAI prevention across agencies and facilities in Minnesota. Many thanks to the individuals who put in hours of effort in developing this plan with special thanks to representatives from APIC-MN, the regional health coalitions, the Minnesota Hospital Association, Stratis Health, and the MDH HAI&AR Unit.

The Plan

Activity 1: MDH staff demonstrate infection prevention and HAI surveillance expertise

- a) At least one expert level infection preventionist is available to staff and community IPs to provide mentoring and consultation.
- b) Membership in APIC, SHEA, and CSTE is provided to key staff.
- c) Support for staff certification in infection prevention is provided (CIC).
- d) HAI staff participate in continuing education activities.
- e) A PhD level epidemiologist oversees CRE, VISA, and VRSA surveillance and NHSN surveillance, providing mentorship to other staff.
- f) MDH continues to participate in the Emerging Infections Program HAIC activities: the Acute Care HAI and Antimicrobial Use Point Prevalence Survey, MUGSI, CDI and MRSA sentinel surveillance projects.
- g) CRE surveillance is expanded to become statewide.
- h) Maintain NHSN surveillance of CLABSI, CAUTI, SSI, MRSA, and CDI.
- i) Consider establishing a second data use agreement with CDC for access to additional NHSN data.
- j) Use 2015 surveillance data to establish new baseline going forward.
- k) HAI & AR Unit staff continue to interface with other disease-specific epidemiology areas regarding healthcare-associated cases (e.g. hepatitis B & C, group A strep, influenza, legionellosis).
- l) Continue discussion with MDH attorneys regarding NHSN surveillance validation opportunities. Explore possibility of pilot validation project involving CDI LabID Event data in CDI sentinel surveillance area.
- m) Produce reports of HAI surveillance data for the Advisory Group, CHAIN, regional health coalitions, and public.
- n) Use Targeted Assessment for Prevention NHSN reports to prioritize ICAR assessments.
- o) HAI & AR Unit staff work with MNIT and the MDH Office of Health Information Technology to promote capacity for electronic reporting.
- p) Encourage ongoing training in outbreak detection and response for staff made available through CDC, APIC, SHEA, etc.
- q) Standardize the log and reports of HAI outbreak/breach investigations. Include After Action Reports when possible.
- r) HAI & AR Unit maintains a close working relationship with MDH Public Health Laboratory (PHL) to utilize laboratory capacity in surveillance and outbreak investigations.
- s) Dedicated biosafety personnel work with state laboratories to ensure safety when handling potentially dangerous pathogens.

[short-term outcome] Infection prevention expertise is established and enhanced within MDH.

[short-term outcome] HAI surveillance expertise is established and enhanced within MDH.

[short-term outcome] HAI data are used to guide prevention efforts.

- [output] The HAI & AR Unit has two staff with CIC certification.

[mid-term outcome] All types of health care workers are educated regarding infection prevention on at least an annual basis.

[mid-term outcome] MDH provides educational content regarding infection prevention strategies to public audiences on at least an annual basis.

[mid-term outcome] Trained state health department staff conduct HAI surveillance. Staff detect and respond to breaches and outbreaks promptly and effectively.

- **[output] MDH epidemiology staff are reviewing NHSN and CRE surveillance data at least monthly.**

[mid-term outcome] HAI surveillance data is used to determine where resources can be most effectively applied and to guide prevention efforts.

- **[output] NHSN Targeted Assessment for Prevention (TAP) reports and CRE surveillance data will be utilized to identify facilities and conditions to prioritize for ICAR assessments and educational efforts.**

[long-term outcome] Reductions in HAIs are demonstrated

- **[output] Use targets outlined in [National Action Plan for Combating Antibiotic-Resistant Bacteria](#)**
- **[output] A report summarizing 2014 and 2015 HAI surveillance data (CRE, CLABSI, CAUTI, SSI – colorectal & abdominal hysterectomy, MRSA, and CDI) will be completed by September 1st, 2016.**

[long-term outcome] Best practices for infection prevention are implemented across the spectrum of care.

- **[output] MDH facilitates a coordinated approach to infection prevention and surveillance proposed in August 2015 *Vital Signs*:**
 - **Identify the healthcare facilities in the area and how they are connected (utilize facilities' admission and discharge data)**
 - **Dedicate staff to improve connections and coordination with healthcare facilities in the area**
 - **MDH is able to track and alert healthcare facilities to antibiotic-resistant or *C. diff* bacteria coming from other facilities and outbreaks in the area**
 - **MDH and healthcare facilities share information and implement shared infection prevention actions to stop inter-facility spread of bacteria**
- **[output] All facilities assess for international travel within previous 3-4 weeks**

[long-term outcome] An effective surveillance system is in place to detect infections and infection control breaches early so that interventions take place promptly. Surveillance data is used to track success of and inform prevention efforts.

- **[output] MDH HAI/AR staff collaborate with MDH regulatory staff/surveyors to train all new surveyors every 6months about potential infection control breaches using CDC's [Steps for Evaluating an Infection Control Breach](#)**

Activity 2: Establish a healthcare facility denominator and assess the needs of the healthcare facilities (or a subset thereof)

- a. A compendium of health care settings, their regulators, and designated infection control contacts will be established and maintained. The compendium will serve as a resource for determining HAI prevention needs, a tool for HAI prevention education outreach, and a means to communicate quickly and directly with infection control contacts in emergency situations.
- b. Regional infection prevention specialists (IPS) and coordinators (IPC) are hired.
- c. The IPS and IPC work with partners including CHAIN, the regional health care coalitions, and other MDH staff to assess and help mitigate gaps in infection prevention, surveillance, and reporting at both the facility and community level. This includes assisting Ebola Treatment and Assessment Centers to prepare to care for Ebola patients and persons under investigation (PUIs) and all facilities to be prepared to recognize and appropriately address any serious infectious disease threat.
- d. The IPC and IPS use tools developed by CDC, SHEA, and others such as the ICAR assessment tools and infection prevention train-the-trainer materials to provide education and guidance to facilities and health care workers.
- e. Membership in the Minnesota HAI Prevention Advisory Group includes representatives from partner organizations that can collaborate in providing education and support for infection prevention to health care workers and health care settings. This includes the Minnesota Hospital Association, Stratis Health, APIC-MN, and others.
- f. Regional health coalition and MDH Emergency Preparedness and Response representation has been added.
- g. Additional MDH Health Regulation Division representation will be sought.
- h. Professional licensing board (nursing, medicine, pharmacy, dentistry) representation will be sought.
- i. The HAI Coordinator convenes the general Advisory Group meetings quarterly and as needed.
- j. The Advisory Group is consulted regarding priorities and approaches for statewide HAI prevention efforts. The Advisory Group provides advice for and approves the Action Plan.
- k. Advisory Group Workgroups – standing and ad hoc – will be established and maintained as needed. These include:
 - i. The Collaborative Healthcare-Associated Infection Network (CHAIN)
 - ii. The Action Plan Advisory Workgroup
 - iii. The Antimicrobial Resistance Steering Group
 - iv. The CRE Workgroup
 - v. The Ambulatory Surgery Center Workgroup
- l. MDH maintains active involvement in CHAIN including monthly Operations meetings, quarterly Leadership Council meetings, and bi-monthly CHAIN NHSN User Group calls. MDH works closely with CHAIN partners (APIC-MN, Stratis Health, and MHA) on HAI prevention initiatives in order to avoid duplication of effort and to build synergy.
- m. MDH maintains and expands the *C. difficile* infection (CDI) hospital/long-term care collaborative with a focus on care transitions.
- n. MDH continues to assist long-term care facilities to enroll in and use NHSN.

- o. Minnesota remains involved in the Safe Injection Practices Coalition and promotes the One and Only Campaign and safe injection practices through presentations, social media, and distribution of materials.**
- p. MDH develops an Injection Safety Train the Trainer Program and hosts a Train the Trainer session. IPS and IPC receive training and go on to provide training in their respective regions.**
- q. HAI Unit staff meet with Health Regulations Division staff and End Stage Renal Disease Network #11 staff to establish a plan for how the agencies can best support one another's efforts to prevent HAIs.**

[short-term outcome] Collaborations with MDH partners make infection prevention education and process improvement support available to health care workers in acute care, long-term care, ambulatory care, and hemodialysis settings as well as the public.

- **[output] The following will be completed for the compendium of health care facilities:**
 - **Hospitals – a list including regulators and infection control contacts will be identified for all facilities**
 - **Long-term care facilities – a list including all facilities and their regulators will be complete**
 - **Hemodialysis centers – a list of all centers and their regulators will be complete**
 - **Ambulatory surgery centers – a list of all ASCs will be complete**
 - **Other ambulatory settings – a preliminary list of other ambulatory settings will be compiled**
- **[output] Infection Prevention and Control Assessment Tool has been completed by 5 MN hemodialysis facilities**
- **[output] Infection Prevention and Control Assessment Tool has been completed by 50 MN acute care hospitals**
- **[output] Infection Prevention and Control Assessment Tool has been completed by 50 MN LTCF**
- **[output] Infection Prevention and Control Assessment Tool has been completed by 20 MN outpatient settings**
- **[output] An assessment is completed of current surveillance and reporting practices in long-term care and ambulatory settings.**

Activity 3: Implement interventions based on assessed needs of healthcare facilities

- a. MDH staff (IP specialists and IP coordinators) begin ICAR assessment process and provide guidance in carrying out surveillance that is appropriate to the facility and provide information about when and how to report disease and breaches to MDH. Additional questions about current surveillance and reporting practices are incorporated into ICAR assessments.
- b. NHSN data including TAP reports and other MDRO (e.g. CRE) surveillance data are utilized to prioritize facilities and regions to target for intervention.
- c. IPS & IPC collaborate with regional health coalitions in developing regional outbreak reporting and response plans incorporating 'identify, isolate, and inform' strategy for frontline hospitals that encounter potential lethal infections.
- d. Facilities are encouraged to make it standard practice to inquire about international travel when patients have signs or symptoms consistent with infectious disease and to have a plan for follow up.
- e. Explore possibility of program for sharing outbreak/breach experiences so that facilities/health care workers can learn from their peers' experiences.
- f. Continue the CRE regional coalition and quarterly calls with border states to share information and strategies.

[short-term outcome] Programs are developed and implemented to provide training to acute care, long-term care, ambulatory care, and hemodialysis settings on how to conduct surveillance for and report infections and infection control breaches.

- [output] Health care settings are provided education regarding surveillance and reporting of infections and breaches.
- [output] IPS and IPC staff provide training on infectious disease surveillance and reporting to long-term care facilities and ambulatory settings that participate in ICAR evaluations.

[mid-term outcome] Health care settings are provided education regarding surveillance and reporting of infections and breaches.

- [output] An assessment is completed of current surveillance and reporting practices in long-term care and ambulatory settings.
- [output] IPS and IPC staff provide training on infectious disease surveillance and reporting to long-term care facilities and ambulatory settings that participate in ICAR evaluations.

[long-term outcome] Reductions in HAIs are demonstrated

- [output] Use targets outlined in [*National Action Plan for Combating Antibiotic-Resistant Bacteria*](#)
- [output] A report summarizing 2014 and 2015 HAI surveillance data (CRE, CLABSI, CAUTI, SSI – colorectal & abdominal hysterectomy, MRSA, and CDI) will be completed by September 1st, 2016.

[long-term outcome] Best practices for infection prevention are implemented across the spectrum of care.

- **[output] MDH facilitates a coordinated approach to infection prevention and surveillance proposed in [August 2015 Vital Signs](#):**
 - **Identify the healthcare facilities in the area and how they are connected (utilize facilities' admission and discharge data)**
 - **Dedicate staff to improve connections and coordination with healthcare facilities in the area**
 - **MDH is able to track and alert healthcare facilities to antibiotic-resistant or *C. diff* bacteria coming from other facilities and outbreaks in the area**
 - **MDH and healthcare facilities share information and implement shared infection prevention actions to stop inter-facility spread of bacteria**
- **[output] All facilities assess for international travel within previous 3-4 weeks**

[long-term outcome] An effective surveillance system is in place to detect infections and infection control breaches early so that interventions take place promptly. Surveillance data are used to track success of and inform prevention efforts.

- **[output] MDH HAI/AR staff collaborate with MDH regulatory staff/surveyors to train all new surveyors every 6 months about potential infection control breaches using CDC's [Steps for Evaluating an Infection Control Breach](#)**

Activity 4: MDH facilitates collaborations with and among experts in antimicrobial stewardship

- a. **If possible, a pharmacist will be added on staff. If not, pharmacist consultation will be made available to existing staff as needed to carry out antimicrobial stewardship activities.**
- b. **Participation in AR/AS continuing education is supported for HAI staff.**

[short-term outcome] Antimicrobial stewardship expertise is enhanced within MDH.

Activity 5: Assess the needs and capacity of the One Health entities

- a. **A 'One Health' antimicrobial resistance steering group is established.**
- b. **An antimicrobial resistance summit is held.**
- c. **A 5-year antimicrobial stewardship strategic plan is developed.**

[short-term outcome] A strategic plan is established to develop policies and education that support optimal use of antimicrobials.

- **[output] A 5-year antimicrobial resistance strategic plan is finalized.**

Activity 6: Implement antimicrobial stewardship interventions based on assessed needs and capacity

- a. **An educational conference for prescribers, pharmacists, and other health professionals that supports the strategic plan is held.**
- b. **A pilot project in the use of the NHSN AUR module is conducted.**
- c. **Long-term care facilities are encouraged and aided in enrolling in and using NHSN.**

[short-term outcome] Implementation of the antimicrobial stewardship strategic plan begins.

- **[output] An educational antimicrobial resistance conference will be held to kick off the strategic plan.**

[mid-term outcome] All providers, health care workers, and the public are educated about their roles in antimicrobial stewardship.

[mid-term outcome] Policies support optimal use of antimicrobials.

[long-term outcome] Antimicrobial use is optimized in order to minimize selective pressure thus reducing the antimicrobial resistance of pathogens.

- **[output] All acute care hospitals and LTCFs have implemented at the seven CDC Core Elements for ASP**

[short-term outcome] Measurement tools are adopted to track antimicrobial use and resistant infections.

- **[output] MDH will assist one hospital in successfully using the NHSN AUR module for reporting antimicrobial use.**
- **[output] MDH will enroll 50 long-term care facilities in NHSN.**
- **[output] All acute care hospitals and 50 long-term care facilities have an antimicrobial stewardship program in place that incorporate at least 3 CDC Core Elements for ASP**

[long-term outcome] Reductions in infections due to multiple- drug- resistant organisms are demonstrated.

- [output] Use targets outlined in [National Action Plan for Combating Antibiotic-Resistant Bacteria](#)

Measuring Progress on Preventing HAI and Implementing the Action Plan

Tracking the number and rate of several HAI over time will serve as a gauge of the success in preventing HAI. HHS has proposed a group of measures for their HAI Action Plan and these same measures are available for use by the state. While these data currently undergo little validation to ensure their accuracy, they provide a starting point for tracking outcomes. These data are primarily confined to hospital settings and similar standardized outcome data generally are not available for nonhospital settings although this may change over time, especially for long-term care facilities, outpatient dialysis centers, and ambulatory surgery centers since HHS has expanded its action plan to include them. Until outcome data become available for other pertinent conditions and settings, progress will be measured by tracking accomplishments of actions outlined in this plan with the aim of eventual establishment of standardized outcome measures for these as well.

Data sources that are currently available will be used to measure progress in preventing HAI for 2014 -2015 with 2014 data serving as the baseline. Most of these data are reported by hospitals to the National Healthcare Safety Network (NHSN) as part of the healthcare quality reporting requirements for CMS. It is anticipated that HHS and CMS will expand HAI reporting requirements for non-hospital settings as time goes on and these will be incorporated in Minnesota’s measures of progress as well. Goals for HAI reduction to be accomplished by 2020 align with those proposed by HHS in its National Action Plan. Data in the table below will be summarized and reported at least annually along with a report regarding completion of activities listed in the action plan tables. These results will be used in evaluating the success of efforts and the need to revise, eliminate, or add other actions/objectives for the subsequent plan.

Outcome Measures

Baseline Estimate (Source)	Year of Baseline Estimate	Measure	Future Source of Data	2020 Goal
NHSN; number and rate	2015	CLABSI in adult, pediatric, and neonatal ICUs	Same	TBD
NHSN; number and rate	2015	CAUTI in adult and pediatric ICUs	Same	TBD
Emerging Infections Program Active	2007-2008	Invasive healthcare-associated MRSA	Same	TBD

Bacterial Core Surveillance; number and rate		infections (hospital)		
NHSN LabID Event; number and rate	2015	Facility-onset MRSA (hospital)	Same	TBD
NHSN LabID Event; number and rate	2015	Facility-onset CDI (hospital)	Same	TBD
HCUP; number and rate <i>(tentative)</i>	2015	Hospitalizations with CDI based on discharge data	Same	TBD
NHSN; abdominal hysterectomy and colon surgery SSI; number and rate	2015	Surgical site infections following abdominal hysterectomy and colon surgery	Same	TBD
NHSN and/or FluSafe		Healthcare Personnel influenza vaccine rates for all reported settings		TBD

*Healthcare workforce – using the CDC NHSN definition of healthcare personnel (HCP): “The entire population of healthcare workers working in healthcare settings. HCP might include (but are not limited to) physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, student and trainees, contractual staff not employed by the healthcare facility, and persons (e.g., clerical, dietary, housekeeping, maintenance, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from HCP, it includes students, trainees, and volunteers.”

APPENDIX A

**MINNESOTA HEALTHCARE–ASSOCIATED INFECTION PREVENTION ADVISORY GROUP
MEMBER ORGANIZATIONS**

Association for Professionals in Infection Control and Epidemiology, Minnesota Chapter (APIC-MN)

Consumer representatives

End Stage Renal Disease Network #11

Institute for Clinical Systems Improvement (ICSI)

LeadingAge Minnesota

Minnesota Alliance for Patient Safety

Minnesota Ambulatory Surgery Center Association

Minnesota Department of Health:

- Emergency Preparedness and Response Section
- Executive Office (State Epidemiologist)
- Health Policy Division (Adverse Events Reporting)
- Health Regulation Division
- Infectious Disease Epidemiology, Prevention and Control Division
- Office of Health Information Technology

Minnesota Directors of Nursing Administration (MN-DONA)

Minnesota Hospital Association

Minnesota Interlaboratory Microbiology Association

Minnesota Medical Association

Minnesota Medical Directors Association

North Central Chapter of the Infectious Diseases Society of America

Regional health coalitions of Minnesota

Stratis Health (QIO)/ Lake Superior Quality Innovation Network (QIN)

APPENDIX B

GLOSSARY OF COMMONLY USED ACRONYMS

Acronym	Definition
APIC-MN	Minnesota Chapter of the Association for Professionals in Infection Prevention and Epidemiology
AR/AS	Antimicrobial resistance/Antimicrobial stewardship
ARRA	American Recovery and Reinvestment Act
ASC	Ambulatory surgery center
ASP	Antibiotic stewardship programs
ASPR	Assistant Secretary for Preparedness and Response
AUR	Antimicrobial use and resistance
CAUTI	Catheter-associated urinary tract infection
CDC	Centers for Disease Control and Prevention
CDI	<i>Clostridium difficile</i> infection
CDI LabID	<i>Clostridium difficile</i> infection laboratory identified
CHAIN	Collaborative HAI Network
CIC	Certification in Infection Prevention
CLABSI	Central line-associated bloodstream infection
CMS	Centers for Medicare and Medicaid
CRE	Carbapenem-resistant Enterobacteriaceae
CSTE	Council of State and Territorial Epidemiologists
EIP	Emerging Infections Programs
ELC	Epidemiology and Laboratory Capacity
ELR	Electronic laboratory reporting
EPR	Emergency preparedness and response
ESRD	End-stage renal disease
EVD	Ebola viral disease
HAI	Healthcare-associated infection
HAI & AR	Healthcare-associated infections and antimicrobial resistance
HAIC	Healthcare-associated Infections - Community Interface
HCP	Healthcare personnel
HCUP	Healthcare Cost and Utilization Project
HEN	Hospital Engagement Network
HHS	U.S. Department of Health and Human Services
HICPAC	Healthcare Infection Control Practices Advisory Committee
HIE	Health Information Exchange
HRD	Health Regulation Division
ICAR	Infection Control Assessment and Response
ICSI	Institute for Clinical Systems Improvement

IDEPC	Infectious Disease Epidemiology, Prevention and Control
IPC	Infection prevention coordinator
IPPS	Inpatient prospective payer system
IPS	Infection prevention specialist
LTCF	Long-term care facility
MAPS	Minnesota Alliance for Patient Safety
MDRO	Multi-drug resistant organism
MEDSS	Minnesota Electronic Disease Surveillance System
MHA	Minnesota Hospital Association
MIMA	Minnesota Interlaboratory Microbiology Association
MMA	Minnesota Medical Association
MMDA	Minnesota Medical Directors Association
MNASCA	Minnesota Ambulatory Surgery Center Association
MN-	
DONA	Minnesota Directors of Nursing Administration
MNIT	State of Minnesota Information Technology Department
MRSA	Methicillin-resistant <i>Staphylococcus aureus</i>
MUGSI	Multi-Site Gram-Negative Bacilli Surveillance Initiative
NCCIDSA	North Central Chapter Infection Diseases Society of America
NETEC	National Ebola Training and Education Center
NHSN	National Healthcare Safety Network
OHIT	Office of Health Information Technology
PFGE	Pulsed-field gel electrophoresis
PHHS	Preventative Health and Health Services
PHL	Public health laboratory
PUI	Patients/persons under investigation
QIN	Quality Innovation Network
QIO	Quality Improvement Organization
REP	Rapid Ebola Preparedness
RHIO	Regional Health Information Organizations
RHPC	Regional healthcare preparedness consultant
SHEA	Society for Healthcare Epidemiology of America
SSI	Surgical site infection
TAP	Targeted Assessment for Prevention
VAE	Ventilator-associated events
VAP	Ventilator-associated pneumonia
VISA	Vancomycin-intermediate <i>Staphylococcus aureus</i>
VRE	Vancomycin-resistant enterococci
VRSA	Vancomycin-resistant <i>Staphylococcus aureus</i>

APPENDIX C

Minnesota HAI Prevention Advisory Group Recommendations for Priority Activities for 2014 - 2015

- **Taking measures to step up CRE surveillance and prevention efforts.** CDC has identified CRE as an urgent threat. We have an opportunity to limit the spread of CRE while rates in Minnesota are relatively low.
- **Reducing the number of catheter-associated urinary tract infections (CAUTI).** NHSN data indicates that Minnesota has a higher rate of CAUTI than the national average.
- **Reducing the number of surgical site infections.** NHSN data also suggests that rates of surgical site infection following abdominal hysterectomy and colon surgery are higher in Minnesota than the national average.
- **Promote widespread adoption of using minimum criteria for initiating antimicrobials.** Antimicrobial resistance is a global problem and Minnesota has not been spared. While efforts are underway to ensure that health care facilities in Minnesota have effective antimicrobial stewardship programs, it is also important that prescribers are knowledgeable about and observe best practices for diagnosing and managing common infections.
- **Establish infection prevention and control guidance for ambulatory surgery centers (ASCs).** Currently, the ability to track surgical site and other infections resulting from care provided in ASCs is limited which also limits the ability to address ASC-related HAIs.
- **Ensure that all healthcare settings have access to basic infection prevention resources.** Many healthcare settings, especially ambulatory settings, do not have access to the services of a professional infection preventionist. While that would be ideal, it is more feasible to develop and provide general infection prevention tools for ambulatory settings to serve as a resource when infection preventionist consultation is not possible.
- **Promote safe injection practices across the spectrum of care.** The Minnesota Department of Health is notified periodically about small HAI outbreaks in outpatient settings attributed to unsafe injection practices and it is likely that these represent only a fraction of such outbreaks and situations where unsafe practices occur. There are also frequent reports in the national media of hepatitis C outbreaks related to unsafe injection practices in ambulatory care settings that support this concern.
- **Gather information about current infection prevention practices, especially safe injection practices, in Minnesota clinics and about measures taken in other states to ensure safe care in ambulatory settings.** Little is known about current practices among ambulatory settings in Minnesota and current regulatory oversight may be inadequate to ensure safe care.

APPENDIX D

Template for State Healthcare-associated Infection Plan

In response to the increasing concerns about the public health impact of healthcare-associated infections (HAIs), the US Department of Health and Human Services (HHS) has developed an Action Plan to help prevent Healthcare-associated Infections. The HHS Action Plan includes recommendations for surveillance, research, communication, and metrics for measuring progress toward national goals. Three overarching priorities have been identified:

- Progress toward 5-year national prevention targets (e.g., 50-70% reduction in bloodstream infections);
- Improve use and quality of the metrics and supporting systems needed to assess progress towards meeting the targets; and
- Prioritization and broad implementation of current evidence-based prevention recommendations

Background: The 2009 Omnibus bill required states who received Preventive Health and Health Services (PHHS) Block Grant funds to certify that they would submit a plan to reduce HAIs to the Secretary of Health and Human Services not later than January 1, 2010. In order to assist states in responding within the short timeline required by that language and to facilitate coordination with national HAI prevention efforts, the Centers for Disease Control and Prevention (CDC) created a template to assist state planning efforts.

This template helps to ensure progress toward national prevention targets as described in the HHS Action Plan. CDC is leading the implementation of recommendations on national prevention targets and metrics and states should tailor the plan to their state-specific needs.

Initial emphasis for HAI prevention focused on acute care, inpatient settings, and then expanded to outpatient settings. The public health model of population-based healthcare delivery places health departments in a unique and important role in this area, particularly given shifts in healthcare delivery from acute care settings to ambulatory and long term care settings. In non-hospital settings, infection control and oversight have been lacking which have resulted in outbreaks which can have a wide-ranging and substantial impact on affected communities. At the same time, trends toward mandatory reporting of HAIs from hospitals reflect increased demand for accountability from the public.

The State HAI Action Plan template targets the following areas:

1. Enhance HAI Program Infrastructure
2. Surveillance, Detection, Reporting, and Response
3. Prevention
4. Evaluation, Oversight, and Communication

With new Ebola-related, infection control activities, the following two tables have been added to reflect those activities:

5. Infection Control Assessment and Response (Ebola-associated activity from FOA Supplement, CK14-1401PPHFSUPP15, Project A)
6. Targeted Healthcare Infection Prevention Programs (Ebola-associated activity from FOA Supplement, CK14-1401PPHFSUPP15, Project B)
- 7.

Framework and Funding for Prevention of HAIs

CDC's framework for the prevention of HAIs builds on a coordinated effort of federal, state, and partner organizations and is based on a collaborative public health approach that includes surveillance, outbreak response, infection control, research, training, education, and systematic implementation of prevention practices. Legislation in support of HAI prevention provides a unique opportunity to strengthen existing state capacity for prevention efforts.

Template for developing HAI plan

The following template provides choices for enhancing state HAI prevention activities in the six areas identified above. For each section, please choose elements which best support current activities or planned activities. Current activities are those in which the state is presently engaged and includes activities that are scheduled to begin using currently available resources. Planned activities represent future directions the state would like to move in to meet currently unmet needs, contingent on available resources and competing priorities. A section for additional activities is included to accommodate plans beyond the principal categories.

1. Enhance HAI 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.

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<ul style="list-style-type: none"> • Association for Professionals in Infection Control and Epidemiology – Minnesota Chapter (APIC-MN), • Aging Services of Minnesota • End-stage Renal Disease (ESRD) Network #11, • Institute for Clinical Systems Improvement (ICSI), • Minnesota Alliance for Patient Safety (MAPS), • Minnesota Ambulatory Surgery Center Association (MNASCA), • Minnesota Directors of Nursing Administration (MN-DONA), • Minnesota Hospital Association (MHA), • Minnesota Interlaboratory Microbiology Association (MIMA), • Minnesota Medical Association (MMA), • Minnesota Medical Directors Association (MMDA), • North Central Chapter Infectious Diseases Society of America (NCCIDSA), • Stratis Health (Minnesota’s Quality Improvement Organization) <p>as well as representatives from the regional health coalitions and several divisions in the Minnesota Department of Health:</p> <ul style="list-style-type: none"> • Health Regulation; • Health Policy (Adverse Events Reporting and Health Information Technology); • Infectious Disease Epidemiology , Prevention and Control • Health Partnerships [Emergency Preparedness and Response (EPR)] • Executive Office (State Epidemiologist) <p>Regional Healthcare Preparedness Consultants (RHPCs) representing Minnesota healthcare coalitions and a representative from the MDH EPR Unit have been recruited as members of the Advisory Group. The current Advisory Group has one representative from the MDH Health Regulation Division.</p> <p>The Advisory Group seeks to add representation of at least one more member from the Health Regulation Division as well as from the Minnesota Boards of Dentistry, Medicine, Nursing, and Pharmacy.</p> <p>Representation from other accrediting agencies (e.g. AAAHC) will be considered.</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>MDH has sponsored an antimicrobial stewardship steering group made up primarily of infectious disease physicians and infectious disease pharmacists since 2012. This group has provided guidance for the development of an antimicrobial stewardship toolkit. The group has also planned three annual antimicrobial stewardship conferences. A new 'One Health' Antimicrobial Resistance Steering Group has been established including leaders in animal and environmental health as well as human health. A summit is in the planning stages to begin development of a 5-year strategic plan.</p> <p>MDH has entered a data use agreement with CDC for access to NHSN data effective January 2014. Plans are in place to share reports of aggregate data from NHSN with the Advisory Group for future priority setting and planning purposes. With supplemental Epidemiology and Laboratory Capacity funding, MDH has capacity to do additional data analysis. The Advisory Group will be consulted regarding additional sources of data that can be used for HAI prevention tracking.</p>	
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	<p>2. Establish an HAI surveillance prevention and control program</p> <p>i. Designate a State HAI Prevention Coordinator</p> <p>ii. Develop dedicated, trained HAI staff with at least one FTE (or contracted equivalent) to oversee HAI activities areas (Integration, Collaboration, and Capacity Building; Reporting, Detection, Response, and Surveillance; Prevention; Evaluation, Oversight, Communication, and Infection Control)</p>	<p>Completed</p> <p>Ongoing</p>
		<i>Other activities or descriptions:</i>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>The State HAI Prevention Coordinator position has been established and maintained since 2011.</p> <p>MDH has established the HAI and Antimicrobial Resistance (AR) Unit which is staffed with epidemiologists and nurse specialists focused on HAI & AR surveillance and prevention activities. Efforts to maintain and expand capacity for infection prevention expertise, surveillance including outbreak detection and response, and using data for action are continual. Support is provided for unit staff to become CIC certified.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>3. Integrate laboratory activities with HAI surveillance, prevention, and control efforts.</p> <p style="padding-left: 40px;">i. Improve laboratory capacity to confirm emerging resistance in HAI pathogens and perform typing where appropriate (e.g., outbreak investigation support, HL7 messaging of laboratory results)</p>	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>The MDH Public Health Laboratory (PHL) and HAI&AR Unit work closely on CRE surveillance and investigating HAI outbreaks. PHL has provided antimicrobial susceptibility testing on many pathogens since the inception of the Emerging Infections Program in 1995 including pathogens often associated with HAI such as VRE, MRSA, and now CRE. MDH has also produced a statewide antibiogram for selected pathogens since 1998. The PHL has provided PFGE and other subtyping to assist with numerous HAI and other outbreak investigations since that time. MNIT (the State of Minnesota Information Technology Department) supports the Minnesota Electronic Disease Surveillance System (MEDSS) which facilitates electronic laboratory results reporting to MDH.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>4. Improve coordination among government agencies or organizations that share responsibility for assuring or overseeing HAI surveillance,</p>	Ongoing

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		prevention, and control (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)	
		<p><i>Other activities or descriptions:</i></p> <p>Historically, the infection prevention consultant in IDEPC has served as a consultant, educator, and liaison with the Health Regulation Division (formerly known as Compliance Monitoring) for many years. With the changing and expanding roles in HAI prevention for both divisions, the HAI coordinator will invite the Health Regulation Division (HRD) to provide at least one additional representative to the Advisory Group and will meet with HRD staff to look for areas where efforts may overlap or that we can assist each other further in HAI prevention efforts.</p> <p>The Healthcare-associated Infections and Antibiotic Resistance (HAI &AR) Unit is located within the IDEPC Division and works closely with epidemiologists who conduct surveillance for MRSA, CDI, hepatitis, legionellosis, tuberculosis, foodborne diseases, vaccine preventable diseases, etc. The HAI&AR Unit also works closely with Emerging Infections Unit and unexplained deaths surveillance team. These epidemiologists have a close working relationship with the HAI&AR Unit and share pertinent information and seek consultation with the HAI&AR Unit when appropriate.</p> <p>The HAI&AR Unit has worked with the Boards of Pharmacy, Medicine, Nursing, and Dentistry mostly on a case by case basis. Representatives from these boards will be recruited to be part of the Advisory Group. When the data collection of all health care facilities and their respective regulatory bodies is completed, additional regulatory boards and agencies may be recruited to join the Advisory Group. This group of regulators may form a subgroup of the Advisory Group and will be consulted to develop a plan for mitigating gaps that are found in regulatory oversight for healthcare settings.</p>	
<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. Providing technical assistance or other incentives for implementations of standards-based reporting can help develop capacity for HAI surveillance and other types of public health surveillance, such as for conditions deemed reportable to state and local	Ongoing

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>health agencies using electronic laboratory reporting (ELR). Facilitating use of standards-based solutions for external reporting also can strengthen relationships between healthcare facilities and regional nodes of healthcare information, such as Regional Health Information Organizations. (RHIOs) and Health Information Exchanges (HIEs). These relationships, in turn, can yield broader benefits for public health by consolidating electronic reporting through regional nodes.</p>	
		<p><i>Other activities or descriptions:</i></p> <p>MDH is working on a pilot project with a large hospital system to help them establish a system with their vendor(s) to utilize the NHSN AUR module for antimicrobial use reporting.</p> <p>MDH has also established an ELR system with Olmsted County laboratories for the EIP <i>C. difficile</i> sentinel surveillance project so that <i>C. difficile</i> identified among Olmsted County residents can be singled out as they are reported to MEDSS; this capacity to refine reporting can be expanded to other settings.</p> <p>The MDH Office of Health Information Technology (OHIT) is represented on our HAI Prevention Advisory Group and provides input for moving ahead with ELR and meaningful use initiatives.</p>	

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. This, combined with improvements to simplify and enhance data collection, and improve dissemination of results to healthcare providers and the public are essential steps toward increasing HAI prevention capacity.

The HHS Action Plan identifies targets and metrics for five categories of HAIs and identified Ventilator-associated Pneumonia as an HAI under development for metrics and targets (Appendix 1):

- Central Line-associated Blood Stream 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)

State capacity for investigating and responding to outbreaks and emerging infections among patients and healthcare providers is central to HAI prevention. Investigation of outbreaks helps identify preventable causes of infections including issues with the improper use or handling of medical devices; contamination of medical products; and unsafe clinical practices.

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

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>As the compendium of Minnesota healthcare settings is completed, MDH will reach out to settings across the spectrum of care to provide education about surveillance and reporting outbreaks to MDH.</p> <p>Also, once the compendium is completed and sufficient data is available about regulatory oversight, the Advisory Group will be consulted for next steps including whether and how legislation could be utilized to promote HAI prevention.</p> <p>Under the Minnesota Data Practices Act, information about individuals is always protected as private.</p> <p>Any information gleaned from MDH use of NHSN data is also protected as private through the data use agreement established with CDC.</p> <p>While most other data collected at MDH is regarded as public, information regarding establishments and facilities are generally withheld until an investigation is completed.</p> <p>NHSN data will be reviewed by an HAI unit epidemiologist on a regular basis (weekly/monthly) to identify potential clusters/outbreaks. While IDEPC epidemiologists routinely look for HAI outbreaks (e.g. due to hepatitis C and group A streptococcus) and report them to the HAI staff, we will explore developing a more formalized process for looking for and sharing HAI concerns between HAI staff and epidemiologists tracking specific diseases.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>2. Enhance laboratory capacity for state and local detection and response to new and emerging HAI issues.</p>	<p>Ongoing</p>
		<p><i>Other activities or descriptions:</i></p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>The PHL laboratory works closely with the HAI&AR Unit especially around issues related to CRE but also in responding to any HAI issues and is continually exploring ways to expand capacity for detecting new and emerging infections.</p>	
<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<p>3. Improve communication of HAI outbreaks and infection control breaches</p> <ul style="list-style-type: none"> i. Develop standard reporting criteria including, number, size, and type of HAI outbreak for health departments and CDC 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) 	<p>2016 2017</p>
		<p><i>Other activities or descriptions:</i></p> <p>The lines of communication are open between the MDH Health Regulation Division (surveyors) and HAI/AR Unit. In situations that the HAI/AR Unit determines that the HRD needs to be informed, the involved facility is encouraged to make the report themselves. If they decline, the facility is informed that the HAI/AR Unit will need to notify HRD.</p> <p>In 2016, we plan to meet with HRD to review recommendations and changes in expectations for both surveyors and HAI/AR Unit.</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>We are also planning to have a dialogue with licensing boards about communicating HAI concerns to HAI/AR Unit. IDEPC has a staff person that follows healthcare workers infected with bloodborne pathogens. We will explore if that role can be utilized to improve communication with/from boards.</p>	
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>4. Identify at least 2 priority prevention targets for surveillance in support of the HHS HAI Action Plan</p> <ul style="list-style-type: none"> i. Central Line-associated Bloodstream Infections (CLABSI) ii. <i>Clostridium difficile</i> Infections (CDI) iii. Catheter-associated Urinary Tract Infections (CAUTI) iv. Methicillin-resistant Staphylococcus aureus (MRSA) Infections v. Surgical Site Infections (SSI) vi. Ventilator-associated Pneumonia (VAP) 	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>Surveillance is conducted for all CMS-required and state –required public reporting which includes CLABSI, CAUTI, SSIs due to colorectal surgery and abdominal hysterectomies, and CDI and MRSA LabID Events. We will explore conducting surveillance of ventilator-associated events (VAE) and/or VAP if and when that reporting becomes required.</p>	
<input checked="" type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/>	<p>5. Adopt national standards for data and technology to track HAIs (e.g., NHSN).</p> <ul style="list-style-type: none"> i. Develop metrics to measure progress towards national goals (align with targeted state goals). (See Appendix 1). ii. Establish baseline measurements for prevention targets 	2016

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p><i>Other activities or descriptions:</i></p> <ul style="list-style-type: none"> i. Minnesota has chosen to adopt NHSN as the standard for reporting HAIs. State public reporting requirements now align with those required by CMS. Critical access hospitals and other non-PPS hospitals are required to report CAUTI using NHSN. ii. MDH acquired access to NHSN effective January 2014 through the data use agreement. 2014 NHSN data will be used to compare 2014 to 2015 results with the understanding that definitions changed and may make results difficult to interpret. Going forward, Minnesota will use 2015 NHSN data as a baseline for measurement and determining targets for CAUTI, SSI, CDI, MRSA, and CLABSI. 	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>6. Develop state surveillance training competencies</p> <ul style="list-style-type: none"> i. Conduct local training for appropriate use of surveillance systems (e.g., NHSN) including facility and group enrollment, data collection, management, and analysis 	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>Resources for training and assistance in using NHSN are available through MDH, Stratis Health (our QIO), and the Minnesota Hospital Association. MDH, Stratis Health, and APIC-MN host a bi-monthly conference call to provide updates, case studies, and an opportunity for Q&A for hospitals.</p> <p>With the long-term care facility (LTCF) – acute care CDI collaborative, MDH had been providing LTCFs with training and assistance in enrolling in NHSN. We plan to continue providing this in conjunction</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>9. Develop preparedness plans for improved response to HAI</p> <p style="padding-left: 40px;">i. Define processes and tiered response criteria to handle increased reports of serious infection control breaches (e.g., syringe reuse), suspect cases/clusters, and outbreaks</p>	<p>Ongoing</p>
		<p><i>Other activities or descriptions:</i></p> <p>. Integrate healthcare system preparedness and infection control through health care coalition engagement with State Healthcare-Associated Infection (HAI)/Infection Control Advisory Group.</p> <p>i. Identify areas in which the emergency preparedness structure could increase the overall capacity of HAI surveillance, prevention, and control practices across all functions of healthcare.</p> <p>ii. Identify and invite key stakeholders and subject matter experts in the development of a regional response plan.</p> <p>iii. Build strategic connections and improve coordination among/between MDH, providers, facilities, health systems, and partners.</p> <p>iv. Ensure access to high-level preparedness training that will protect and safeguard patients, as well as healthcare professionals.</p> <p>v. Identify methods of communication among/between the healthcare facility/staff, MDH, and CDC to increase transparency and situational awareness.</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>B. Define processes and tiered response criteria to handle increased reports of serious infection control breaches (e.g., syringe reuse), suspect cases/clusters, and outbreaks.</p> <p>. The Minnesota Department of Health (MDH), in collaboration with the Minnesota HAI Advisory Group, will identify a systematic, tiered response process to effectively respond to increased reports of serious infection control breaches (e.g., syringe reuse), suspect cases/clusters, and outbreaks.</p> <p>ii. The tiered systems approach will strategically align the complex response to HAI's systematically, while clearly defining actions and roles for all key partners.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	10. Collaborate with professional licensing organizations to identify and investigate complaints related to provider infection control practice in non-hospital settings and set standards for continuing education and training	Start in 2016
		<p><i>Other activities or descriptions:</i></p> <p>Convene a group of representatives from the licensing boards to develop protocols for investigating complaints related to provider infection control practices.</p> <p>Determine the most common complaints and develop education and training plans accordingly.</p>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>11. Adopt integration and interoperability standards for HAI information systems and data sources</p> <p>i. 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) across</p>	Ongoing

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>the spectrum of inpatient and outpatient healthcare settings</p> <p>ii. Promote definitional alignment and data element standardization needed to link HAI data across the nation.</p>	
		<p><i>Other activities or descriptions:</i></p> <p>i. Regularly review NHSN data for HAI surveillance and identifying outbreaks. Expand CRE surveillance to statewide</p> <p>Align CRE case definition with nationally agreed upon definition</p>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>12. Enhance electronic reporting and information technology for healthcare facilities to reduce reporting burden and increase timeliness, efficiency, comprehensiveness, and reliability of the data</p> <p>i. Report HAI data to the public</p>	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>MHA reports CAUTI for all hospitals statewide. Other public HAI reporting is available on Hospital Compare.</p> <p>MDH is working on a pilot project with a large hospital system to help them establish a system with their vendor(s) to utilize the NHSN AUR module for antimicrobial use reporting.</p> <p>MDH has also established an ELR system with Olmsted County laboratories for the EIP <i>C. difficile</i> sentinel surveillance project so that <i>C. difficile</i> identified among Olmsted County residents can be singled out as they are reported to MEDSS; this capacity to refine reporting can be expanded to other settings.</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		The MDH Office of Health Information Technology (OHIT) is represented on our HAI Prevention Advisory Group and provides input for moving ahead with ELR and meaningful use initiatives.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Make available risk-adjusted HAI data that enable state agencies to make comparisons between hospitals.	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>MDH is not allowed to share facility level NHSN data. However, we work with our QIO and our hospital association and they have their own NHSN data and have the ability to do their own TAP reports. We can identify facilities that we are each working with in order to avoid duplication and maximize efforts. We can also work with publicly available data reported on Hospital Compare to set priorities together.</p> <p>We will also work with surveyors to prioritize facilities for intervention with evidence of need based on citations.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Enhance surveillance and detection of HAIs in nonhospital settings	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>Through resources made available with the ELC supplemental grant, the IPSs and IPCs will reach out to LTCF, hemodialysis centers, and ambulatory settings to assess current capacity for surveillance and provide guidance for improvement.</p> <p>An ambulatory surgery center workgroup is being established and will identify infection prevention and surveillance needs and approaches unique to that setting.</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		MDH will continue to enroll LTCFs in NHSN and encourage reporting of CDI.	

3. Prevention

State implementation of HHS Healthcare Infection Control Practices Advisory Committee (HICPAC) recommendations is a critical step toward the elimination of HAIs. CDC and HICPAC have developed evidence-based HAI prevention guidelines cited in the HHS Action Plan for implementation. These guidelines are translated into practice and implemented by multiple groups in hospital settings for the prevention of HAIs. CDC guidelines have also served as the basis for the Centers for Medicare and Medicaid Services (CMS) Surgical Care Improvement Project. These evidence-based recommendations have also been incorporated into Joint Commission standards for accreditation of U.S. hospitals and have been endorsed by the National Quality Forum. Please select areas for development or enhancement of state HAI prevention efforts.

Table 3: State planning for HAI prevention activities

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Implement HICPAC recommendations <ul style="list-style-type: none"> i. Develop strategies for implementation of HICPAC recommendations for at least 2 prevention targets specified by the state multidisciplinary group. 	Ongoing
		<i>Other activities or descriptions:</i>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>The ELC Supplemental Ebola grant is funding Infection Prevention Specialist and Infection Prevention Coordinator positions across the State. They and the Infection Prevention Planner will assist with the planning and implementation of all specified ELC grant activities, including implementing HICPAC recommendations for prevention targets identified by the HAI State Advisory Workgroup. The 2014 Advisory Group identified CAUTI, SSI, CRE, injection safety, and antimicrobial resistance in general as priorities. An ambassador/train-the-trainer program is being developed for injection safety.</p>	
<p style="text-align: center;"><input checked="" type="checkbox"/></p>	<p style="text-align: center;"><input type="checkbox"/></p>	<p>2. Establish prevention working group under the state HAI advisory council to coordinate state HAI collaboratives</p> <ul style="list-style-type: none"> i. Assemble expertise to consult, advise, and coach inpatient healthcare facilities involved in HAI prevention collaboratives 	<p>Ongoing</p>
		<p><i>Other activities or descriptions:</i></p> <p>Currently the Collaborative HAI Network (CHAIN) (of which MDH, Stratis Health, MHA, and APIC-MN are major partners) coordinate collaboratives for acute care. This coordination is expanding to include coordination of activities of the MDH IPS and IPC, HEN 2.0, regional health plan coalitions, QIN/QIO activities, MDH Office of Rural Health initiatives, as well as other CMS activities.</p>	
<p style="text-align: center;"><input checked="" type="checkbox"/></p> <p style="text-align: center;"><input checked="" type="checkbox"/></p> <p style="text-align: center;"><input checked="" type="checkbox"/></p>	<p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p> <p style="text-align: center;"><input type="checkbox"/></p>	<p>3. Establish HAI collaboratives with at least 10 hospitals (this may require a multi-state or regional collaborative in low population density regions)</p> <ul style="list-style-type: none"> i. Identify staff trained in project coordination, infection control, and collaborative coordination ii. Develop a communication strategy to facilitate peer-to-peer learning and sharing of best practices iii. Establish and adhere to feedback from standardized outcome data to track progress 	<p>Ongoing</p>
		<p><i>Other activities or descriptions:</i></p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>Collaborations have been primarily administered by Stratis Health and the Minnesota Hospital Association. Currently there are collaborative activities addressing CAUTI, SSI, VAE, CDI, and CLABSI</p> <p>MDH currently facilitates a collaborative of 6 LTCFs and their 2 admitting hospitals focusing on CDI prevention and interfacility transfer communication. MDH has the capacity and plans to expand the number of participating LTCFs considerably as we coordinate with Stratis Health on their LTCF CDI prevention initiative.</p> <p>MDH is also part of a 3-state health department collaboration with North and South Dakota to develop a regional approach to CRE prevention.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>4. Develop state HAI prevention training competencies</p> <p style="margin-left: 40px;">i. Consider establishing requirements for education and training of healthcare professionals in HAI prevention (e.g., certification requirements, public education campaigns, and targeted provider education) or work with healthcare partners to establish best practices for training and certification</p>	Starting in 2016
		<p><i>Other activities or descriptions:</i></p> <p>As the compendium is completed and additional information is compiled about current regulatory oversight and HAI prevention capacity across the spectrum of care, these findings will be shared with professional boards and the feasibility of establishing requirements for licensing/certification will be explored.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>5. Implement strategies for compliance to promote adherence to HICPAC recommendations</p> <p style="margin-left: 40px;">i. Consider developing statutory or regulatory standards for healthcare infection control and prevention or work with healthcare partners to establish best practices to ensure adherence</p>	Ongoing

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> ii. Coordinate/liaise with regulation and oversight activities such as inpatient or outpatient facility licensing/accrediting bodies and professional licensing organizations to prevent HAIs iii. Improve regulatory oversight of hospitals, enhance surveyor training and tools, and add sources and uses of infection control data iv. Consider expanding regulation and oversight activities to currently unregulated settings where healthcare is delivered and work with healthcare partners to establish best practices to ensure adherence 	
		<p><i>Other activities or descriptions:</i></p> <p>The HAI&AR Unit has historically provided training to new surveyors as part of their orientation. Further explore needs for HAI prevention training for surveyors with Health Regulation Division (HRD). Develop and provide training as indicated.</p> <p>Share findings from data collection for the compendium and other aggregate data regarding infection prevention practices and needs identified with HRD and the professional boards in order to determine if expanding oversight is indicated.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>6. Enhance prevention infrastructure by increasing joint collaboratives with at least 20 hospitals (i.e. this may require a multi-state or regional collaborative in low population density regions)</p>	<p>Ongoing</p>
		<p>Collaborations have been primarily administered by Stratis Health and the Minnesota Hospital Association. Collaborative activities are currently underway for CAUTI, SSI, CDI, VAE, and CLABSI.</p>	

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
		<p>MDH currently facilitates a collaborative of 6 LTCFs and their 2 admitting hospitals focusing on CDI prevention and interfacility transfer communication. MDH has the capacity and plans to expand the number of participating LTCFs considerably as we coordinate with Stratis Health on their LTCF CDI prevention initiative.</p>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>7. Establish collaborative(s) to prevent HAIs in nonhospital settings (e.g., long term care, dialysis)</p>	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>In addition to the current LTCF/Acute Care CDI collaborative, Regional IPS and IPC will assess needs in their regions and establish collaboratives for nonhospital settings either with like nonhospital settings or with partner acute care facilities and other partner nonhospital facilities as the need is indicated.</p>	

4. Evaluation and Communication

Program evaluation is an essential organizational practice in public health. Continuous evaluation and communication of 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. Routine, practical evaluations can inform strategies for the prevention and control of HAIs. Please select areas for development or enhancement of state HAI prevention efforts.

Table 4: State HAI communication and evaluation planning

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Date for Implementation
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	1. Conduct needs assessment and/or evaluation of the state HAI program to learn how to increase impact <ul style="list-style-type: none"> i. Establish evaluation activity to measure progress toward targets and ii. Establish systems for refining approaches based on data gathered 	Ongoing
		<p><i>Other activities or descriptions (not required):</i></p> <p>The fundamental purpose of the HAI program evaluation is to identify sustainable efforts that support policy, systems and environmental change among Minnesota Healthcare facilities. The goals of the HAI Prevention program include the following:</p> <ul style="list-style-type: none"> • Advance the HAI surveillance, prevention, and control practices across all functions of healthcare. • Strengthen leadership and capacity among organizations to develop and sustain infection control initiatives. • Build strategic connections and improve coordination among/between MDH, providers, facilities, health systems, and partners. <p>The HAI program evaluation will measure the impact of program activities; assess progress toward goals; and provide information about</p>	

		<p>successes and challenges to help modify program activities and/or identify promising practices.</p> <p>Review NHSN data and provide reports to Advisory Group for recommendations regarding refining approaches</p>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>2. Develop and implement a communication plan about the state’s HAI program and about progress to meet public and private stakeholders needs</p> <p>i. Disseminate state priorities for HAI prevention to healthcare organizations, professional provider organizations, governmental agencies, non-profit public health organizations, and the public</p>	2016
		<p><i>Other activities or descriptions:</i></p> <p>An executive summary of Action Plan and progress report will be disseminated broadly and posted on website.</p> <p>The HAI&AR Unit will work with its IDEPC Communication Unit liaison to develop a communication plan.</p>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<p>3. Provide consumers access to useful healthcare quality measures</p> <p>ii. Disseminate HAI data to the public</p>	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>Executive summary of Action Plan and progress report will be disseminated broadly and posted on the MDH website.</p>	

		The MDH and CHAIN websites will provide information and links to the CMS Hospital Compare, Nursing Home Compare, and Dialysis Compare websites.	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Guide patient safety initiatives i. Identify priorities and provide input to partners to help guide patient safety initiatives and research aimed at reducing HAIs	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>Aggregate NHSN and other HAI surveillance data and findings from assessments and the compendium will be regularly shared with the HAI Advisory Group, CHAIN partners including the CHAIN Leadership Council, and CDC in order to identify priorities and recommendations.</p>	

<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<p>3. Assess readiness of Ebola-designated facilities within the state</p> <ul style="list-style-type: none"> i. Use CDC readiness assessment tool and determine gaps in infection control ii. Address gaps (mitigate gaps) iii. Conduct follow-up assessments 	<p>Ongoing</p>
		<p><i>Other activities or descriptions:</i></p> <p>A. Use CDC Readiness Assessment Tool and determine gaps in infection control.</p> <ul style="list-style-type: none"> i. MDH will use the CDC HAI Assessment tool to identify healthcare facility gaps in EVD planning for Frontline hospitals as it has for the four EVD Assessment/Treatment facilities. <p>B. MDH participated in CDC REP visits for treatment/assessment facilities in the fall of 2014 and in the NETEC visit for the regional Ebola treatment center in December 2015.</p> <ul style="list-style-type: none"> i. MDH maintains contact with the treatment and assessment facilities as the facilities determine their ability/willingness to remain in these roles. MDH will prioritize the identified gaps and identify methods in which to mitigate the gaps for treatment and assessment facilities and frontline facilities. <p>C. Conduct follow-up assessments</p> <ul style="list-style-type: none"> i. MDH will develop a mediation/performance improvement plan for facilities', provide on-going training/technical assistance, conduct subsequent follow-up site visit to ascertain the overall impact of proposed activities; assess progress toward goals; and provide information about successes and challenges to help modify activities. 	

		<p>ii. On-going follow-up activities include, but are not limited to: (a) tracking and reporting of outcomes for all strategies; (b) Collecting and sharing success stories; (c) participation in MDH evaluation activities; and (d) use of standardized tools and protocols developed by CDC.</p> <p>This is mostly complete for treatment and assessment facilities. MDH is still addressing gaps at one facility.</p> <p>Need for follow up assessment will need to be ongoing.</p>	
<p><input checked="" type="checkbox"/></p> <p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input type="checkbox"/></p> <p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>	<p>4. Assess outbreak reporting and response in healthcare facilities</p> <ul style="list-style-type: none"> i. Use standard assessment tool and determine gaps in outbreak reporting and response ii. Address gaps (mitigate gaps) iii. Track HAI outbreak response and outcome 	<p>Ongoing</p>
		<p><i>Other activities or descriptions:</i></p> <p>The Infection Prevention Planner will work with key partners to create a transparent framework for prioritization of gaps identified by the CDC assessment and ascertain resources/training that align with CDC guidance that can mitigate them; Create tools that translate guidance into implementation; Improve systems for clinician communication and coordination; Create user-friendly tools to process data more rapidly; as well as identify sustainable programs for policy, systems, and environmental change.</p>	

Table 6: Targeted Healthcare Infection Prevention Programs

Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Date of Implementation
<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<p>1. Expand infection control assessments</p> <ul style="list-style-type: none"> i. Expand assessments to other additional facilities and other healthcare settings and determine gaps in infection control ii. Address gaps (mitigate gaps) iii. Conduct follow-up assessments 	Ongoing
		<p><i>Other activities or descriptions:</i></p> <p>A. Expand assessments to general infection prevention, general emerging infectious disease threats, surveillance and outbreak detection and reporting capacity.</p> <p>i. In addition to our work with EVD Treatment Facilities, MDH will partner with Acute Care, Long Term Care, Outpatient, and Dialysis care facilities to administer the CDC ICAR Assessment Tool to identify gaps in infection control.</p> <p>B. Address Gaps (mitigate gaps)</p> <p>i. MDH will prioritize the identified gaps and identify methods in which to mitigate the gaps.</p> <p>C. Conduct follow-up assessments</p>	

		<p>i. MDH will develop a mediation/performance improvement plan for facilities', provide on-going training/technical assistance, conduct subsequent follow-up site visit to ascertain the overall impact of proposed activities; assess progress toward goals; and provide information about successes and challenges to help modify activities.</p> <p>ii. On-going follow-up activities include, but are not limited to: (a) tracking and reporting of outcomes for all strategies; (b) Collecting and sharing success stories; (c) participation in MDH evaluation activities; and (d) use of standardized tools and protocols developed by CDC.</p> <p>Other activities or descriptions:</p> <p>Prioritize facilities most likely to see Ebola case</p> <p>Supplemental grant positions</p>	
<p><input type="checkbox"/></p> <p><input type="checkbox"/></p>	<p><input checked="" type="checkbox"/></p> <p><input checked="" type="checkbox"/></p>	<p>2. Increase infection control competency and practice in all healthcare settings through training</p> <p>i. Incorporate general infection control knowledge and practice assessments of competency into state licensing board requirements, credentialing, and continuing education requirements for clinical care providers (e.g., medical license, admitting privileges) and/or licensing/accreditation requirements for healthcare facilities.</p> <p>ii. Develop a sustainable training program based on CDC guidance and technical assistance to perform training, prioritizing on-site train-the-trainer programs in key domains of infection control, including the incorporation of hands on evaluations and competency assessments of best practices and a system to monitor ongoing compliance and competency.</p>	<p>Starting in</p>
		<p><i>Other activities or descriptions:</i></p>	

	<p><i>Other activities or descriptions:</i></p> <p>NHSN data and communicable disease reports (e.g. for CRE) will be used to develop regional reports that can be shared with facilities in a region.</p> <p>Develop clear reporting guidelines for HAI outbreaks and epidemiologically important diseases and share these with all types of facilities statewide.</p> <p>Adapt the Ebola response plan to address any emerging infectious disease threat. Work with the MDH Emergency Preparedness and Response (EPR) Section and regional health coalitions to implement the plan.</p>	
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APPENDIX E

PROPOSED OUTCOMES

Goal: Zero preventable infections resulting from health care and in health care settings

Long-term outcomes (3-5 years):

Reductions in HAIs are demonstrated.

Best practices for infection prevention are implemented across the spectrum of care.

Health care facilities across the spectrum of care are prepared to “identify, isolate, and inform” for encounters with potentially highly pathogenic infectious diseases.

An effective surveillance system is in place to detect infections and infection control breaches early so that interventions take place promptly. Surveillance data is used to track success of and to inform prevention efforts.

Antimicrobial use is optimized in order to minimize selective pressure thus reducing the antimicrobial resistance of pathogens.

Reductions in infections due to multiple drug-resistant organisms are demonstrated.

Mid-term outcomes (2-3 years):

All types of health care workers are educated regarding infection prevention.

MDH provides educational content regarding infection prevention to public audiences.

Health care settings are provided education regarding surveillance and reporting of infections and breaches.

Health care settings are prepared to protect patients, staff, and visitors from highly pathogenic disease threats.

Trained state health department staff conduct HAI surveillance. Staff detect and respond to breaches and outbreaks promptly and effectively.

HAI surveillance data is used to determine where resources can be most effectively applied and to guide prevention efforts.

All providers, health care workers, and the public are educated about their roles in antimicrobial stewardship.

January 2016

Policies support optimal use of antimicrobials.

Short-term outcomes (1 year):

Infection prevention expertise is established and enhanced within MDH.

Collaborations with MDH partners make infection prevention education and support available to health care workers in acute care, long-term care, ambulatory care, and hemodialysis settings as well as the public.

Ebola treatment and assessment hospitals are prepared to evaluate and care for (persons under investigation) PUIs and Ebola patients.

Frontline hospitals are prepared to assess, provide short-term care, and transfer PUIs for EVD and other potentially highly pathogenic infectious diseases.

HAI surveillance expertise is established and enhanced within MDH.

Programs are developed and implemented to provide training to acute care, long-term care, ambulatory care, and hemodialysis settings on how to conduct surveillance for and report infections and infection control breaches.

HAI data are used to guide prevention efforts.

HAI baselines are established and percent reduction goals are determined.

Antimicrobial stewardship expertise is enhanced within MDH.

A strategic plan is established to develop policies and education that support optimal use of antimicrobials.

Implementation of the antimicrobial stewardship strategic plan begins.

Measurement tools are adopted to track antimicrobial use and resistant infections.