

Alabama State Healthcare-associated Infection Plan

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.

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

| 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. Establish statewide HAI prevention leadership through the formation of multidisciplinary group or state HAI advisory council <ul style="list-style-type: none"> i. Collaborate with local and regional partners (e.g., state hospital associations, professional societies for infection control and | Council Founded 1/1/ 2009 |

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| | | <p>healthcare epidemiology, academic organizations, laboratorians, and networks of acute care hospitals and long term care facilities).</p> <p>The Mike Denton Infection Reporting Act, effective August 1, 2009, mandates the creation of a multidisciplinary Healthcare Data Advisory Council and assures sustainability of the council. By law, the council consist of 18 members and is constituted in the following manner: six hospital members appointed by the Alabama Hospital Association, two of which are infection control professionals, three members appointed by the Medical Association of the State of Alabama, two members appointed by the Business Council of Alabama, at least one of whom represents a small business, all of whom who are purchasers of health care, and none of whom</p> | |

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| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p>are primarily involved in the provision of health care or health insurance, one member appointed by the Mineral District Society, one consumer member who is not a health care professional or does not provide health insurance or an agent thereof is appointed by the Governor, one member appointed by Blue Cross/Blue Shield of Alabama, one member appointed by the Alabama Association of Health Plans, one member appointed by the State Health Officer who is an active member of the Association for Professionals in Infection Control (APIC), licensed to practice in the State of Alabama, and currently practicing in a clinical setting, one member appointed by the Public Education Employees' Health Insurance Plan, and, one member appointed by the State Employees' Insurance Board. The State Health Officer serves as chair of the board, without vote, except</p> | |

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| | | <p>where there is a tie vote of the other board members present at a meeting.</p> <p>The Healthcare Data Advisory Council assists the Alabama Department of Public Health (ADPH) in developing / revising regulations and standards necessary to implement the provisions of the Mike Denton Infection Reporting Act, review and serve as consultants on matters related to any reports or publications prior to release, and serve as consultants on matters relating to the protection, collection, and dissemination of HAI data.</p> <p>The Healthcare Data Advisory Council assists ADPH with the development/implementation of the State HAI Prevention Plan and the Alabama HAI Reporting and Prevention Program. The HAI State Coordinator, Nadine</p> | <p>Add new work group members for Healthcare Infection Control & Prevention Readiness No 2015 add new</p> |

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| | | <p data-bbox="688 358 1472 500">Crawford, coordinates and participates in all Advisory Council meetings. Meeting minutes are posted on the ADPH HAI Web page.</p> <p data-bbox="919 565 1493 1068">ii. NEW: Include hospital preparedness partners (e.g., hospital/healthcare coalitions funded through the ASPR Hospital Preparedness Program). Additional representation from accrediting and/or licensing agency with surveyor authority is ideal.</p> <p data-bbox="688 1084 1472 1377">Effective June 1, 2015, Tammy Langlois, a Nurse Manager, joined ADPH's Infectious Diseases & Outbreak Division to serve as the Healthcare Infection Control & Prevention Readiness (HICP Readiness) Coordinator. The HICP Readiness Coordinator will coordinate</p> | <p data-bbox="1520 358 1759 808">10/1/15 add work group members for antimicrobial stewardship, licensing, and serious infectious diseases</p> |

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| | | <p>Ebola and emerging/serious infectious disease readiness activities, and attend all of the Healthcare Data Advisory meetings. The ADPH Center for Emergency Preparedness (CEP) and ADPH Health Provider Standards, Licensure & Certification will appoint staff to attend and participate on the Advisory Council as well.</p> <ul style="list-style-type: none"> iii. NEW: Engage HAI advisory committee in potential roles and activities to improve antibiotic use in the state (antibiotic stewardship) <p>In 2016, Dr. Mary McIntyre, State Epidemiologist and Assistant State Health Officer for Disease Control and Prevention, will present for approval plans to establish an antimicrobial resistance stewardship work group to the Healthcare Data Advisory Council. This work group will initially focus on</p> | |

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| | | <p>mapping the antimicrobial stewardship programs existing within the State to determine the number of programs in the State, whether or not the programs have established antimicrobial use protocols and how these protocols are enforced. Once the mapping is complete, the work group will focus on coordinating, training and assisting hospitals without stewardship programs to start antimicrobial stewardship programs and establish antibiotic use protocols and evidence-based prevention strategies to improve antibiotic use within the State.</p> <p>iv. NEW: Engage HAI advisory committee in activities to increase health department's access to data and subsequently use those data in prevention efforts</p> | |

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>The Mike Denton Infection Reporting Act, effective August 1, 2009, requires all general, critical access and specialized hospitals to report certain healthcare acquired infections monthly via the National Healthcare Safety Network (NHSN) surveillance system. The Alabama Healthcare-Associated Infections Reporting Rules require hospitals to confer rights to ADPH granting access to their HAI data. ADPH and the Healthcare Data Advisory Council utilizes the HAI data in NHSN to publish an annual HAI public report, and collaborate with major stakeholders in planning training activities and disseminating prevention strategies to reduce certain HAI's within the State.</p> <p style="text-align: center;">iv. Identify specific HAI prevention targets consistent with HHS priorities</p> <p>All Alabama general, critical access and</p> | |

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| | | <p>specialized hospitals must report data on specific healthcare acquired infections per the Healthcare Data Advisory Council's recommendations, and as defined in the reporting rules for the following categories: Surgical Site Infections (SSI) for colon and abdominal hysterectomy surgeries, Central Line-Associated Bloodstream Infections (CLABSI) and Catheter-Associated Urinary Tract Infections (CAUTI). Per the Healthcare Data Advisory Council's recommendation, the State's Reporting Rules were modified, effective November 25, 2013, to expand the reporting locations for CLABSI and CAUTI. The State HAI Coordinator notified all affected facilities via letter with a copy of the newly revised reporting rules. In collaboration with the Alabama Hospital Association (AlaHA) and a major insurance stakeholder, Alabama Blue Cross Blue Shield (AL BCBS), the State HAI</p> | |

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| | | <p>Coordinator presented the rule changes via a webinar in January 2014. Also, ADPH maintains HAI web pages where healthcare providers and consumers can find posted the most current State reporting regulations, annual HAI published reports for 2011, 2012 and 2013, in addition to educational / informative information on HAIs. By State law, general, critical access and specialized hospitals are mandated to report CAUTI, CLABSI and SSI (colon surgery and abdominal hysterectomies) monthly in NHSN.</p> | |
| <i>Other activities or descriptions:</i> | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>2. Establish an HAI surveillance prevention and control program</p> <p style="padding-left: 40px;">i. Designate a State HAI Prevention Coordinator</p> <p>Since June 2009, ADPH has sustained a full</p> | <p>9/1/2009 HAI Coordinator, Epidemiologist</p> |

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>time State HAI Coordinator to provide oversight of all state HAI activities, coordinate HAI training and prevention strategies with major stakeholders, coordinate the Healthcare Data Advisory Meetings, serves as the state’s NHSN subject matter expert and assesses the detection and reporting skills of acute care facility staff responsible for NHSN reporting activities.</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,</p> | |

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| | | <p style="text-align: center;">Communication, and Infection Control)</p> <p>State HAI Coordinator - The ADPH has maintained 1 FTE since June 2009, to ensure the implementation and maintenance of the statewide acute care hospital HAI reporting and prevention program, serve as the NHSN subject matter expert, provide assistance to facility Infection Prevention staff with accurate application of NHSN terminology and criteria, coordinate NHSN related training activities within the state, coordinate Healthcare Data Advisory Council meetings, participate in CDC HAI and NHSN conferences and Grantees meetings, and teleconferences. Ms. Nadine Crawford currently serves in this position.</p> <p>Staff Epidemiologist (Epi) – To support the</p> | |

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| | | <p>statewide HAI reporting and prevention program, ADPH provides an Epidemiologist to assist with technical support of NHSN. This Epi performs data collection and analysis, and reporting of HAI data, and assists with external validation activities.</p> <p>HAI Communicator – ADPH Director of Health Promotion, Dr. Jim McVay serves as the HAI Communicator to manage and coordinate outbreak and other healthcare related alerts to providers and/or the public within the state. The HAI Communicator coordinates all press / media releases related to the statewide HAI reporting and prevention program.</p> <p>ADPH has hired Tammy Langlois, Nurse Manager to serve as the Healthcare Infection Control & Prevention Readiness (JICP</p> | |

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| | | <p>Readiness) Coordinator – 1 FTE hired June 1, 2015. The HCIP Readiness Coordinator will coordinate all Ebola and any other emerging infectious disease readiness activities, and attend Healthcare Data Advisory meetings, Centers for Disease Control and Prevention (CDC) conferences, trainings and conference calls.</p> <p>ADPH hired a Disease Intervention Specialist, Kahlia Bell, to assist with the state’s Ebola-associated Infection Control Assessment and Readiness program activities – 1FTE hired September 1, 2015</p> | |
| <i>Other activities or descriptions:</i> | | | |
| <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</p> | 12/31/11 |

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| | | <p>resistance in HAI pathogens and perform typing where appropriate (e.g., outbreak investigation support, HL7 messaging of laboratory results)</p> <p>The ADPH Bureau of Clinical Laboratories (BCL) supports the statewide HAI surveillance, reporting, prevention and control efforts by providing testing and organism typing during outbreaks to identify the causative pathogen. The BCL also provides testing and typing of organisms for hospitals / healthcare providers that lack the capacity to perform specific testing / typing. When an emerging or resistant strain is confirmed and typed by BCL, ADPH will contact the reporting facility to encourage more active surveillance and investigation of the case / cluster/ outbreak.</p> | |

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| | | As of December 31, 2014, laboratories must report test results electronically (ERL) to ADPH or access ADPH's website to enter test results and demographic data via ADPH's electronic report card. | |
| | | <i>Other activities or descriptions:</i> | |
| <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, prevention, and control (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)</p> <p>The Healthcare Data Advisory Council meetings are subject to the Open Meeting Act. All meetings are posted on the Secretary of state calendar in advance of the meeting. ADPH will notify both internal and external partners of council meeting dates and outcomes. Approved council minutes are</p> | <p>9/1/2009 Update 11/1/2015</p> |

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| | | <p>posted on ADPH’s HAI website. Also, ADPH will coordinate meetings with ADPH General Council, Infectious Disease & Outbreaks Division, Health Provider Standards, the Alabama Hospital Association (ALAHA), Medicare, Blue Cross / Blue Shield of Alabama, the Alabama Healthcare Quality Initiative (AHQI), the Alabama Quality Assurance Foundation (AQAF), Medical Association, Consumer group representative(s), and Alabama hospitals to coordinate plans for implementation of broad-based safe practices and extensive utilization of evidence-based clinical practices in all Alabama hospitals to reduce and prevent HAIs.</p> <p>The HICP Readiness Coordinator will coordinate Ebola and emerging/serious infectious disease readiness activities, and</p> | |

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| | | attend all of the Healthcare Data Advisory meetings, Centers for Disease Control and Prevention (CDC) conferences, trainings and conference calls. The ADPH Center for Emergency Preparedness (CEP) and ADPH Health Provider Standards, Licensure & Certification will appoint staff to attend and participate on the Advisory Council. | |
| <i>Other activities or descriptions:</i> | | | |
| ☒ | ☐ | 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 | 8/1/2010 |

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| | | <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>Per Alabama HAI Reporting Rules, hospitals will report HAI data based upon NHSN HAI definitions and guidelines for reporting. As of August 1, 2010, ADPH established a uniform method of HAI data reporting, collection and evaluation. Alabama hospitals must report</p> | |

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| | | <p>specific HAI data monthly in NHSN. The state law, ADPH is responsible for the collection, analysis, and dissemination of HAI data to the public via the publication of an annual HAI report. All general, critical access, and specialized hospitals must confer rights to ADPH to specific HAI data reported in NHSN. The Healthcare Data Advisory Council must review and approve the release of HAI data reports prior to any HAI publication. Additional, healthcare facilities are allowed to review preliminary HAI data reports to ensure accuracy of HAI data. Furthermore, healthcare facilities are provided a 45 day comment period to review the annual HAI report and provide an explanation of their standard infection ratio (SIR) ratings. ADPH continues to work with internal and external partners to identify prevention gaps and develop / implement broad-based prevention</p> | |

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| | | and education strategies to improve HAI awareness and reduce HAIs in the state. | |
| | | <i>Other activities or descriptions:</i> | |

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.

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

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.

Table 2: State planning for surveillance, detection, reporting, and response for HAIs

| 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>1. Improve HAI outbreak detection and investigation</p> <ul style="list-style-type: none"> i. Work with partners including CSTE, CDC, state legislatures, and providers across the healthcare continuum to improve outbreak reporting to state health departments <p>By state law, all general, critical access and specialized hospitals must report HAI data for specific device and procedure associated infections as approved by the Healthcare Data Advisory Council and defined by ADPH, in the following HAI categories: CAUTI, CLABSI and SSI (abdominal hysterectomies and colon surgeries). Also, Alabama healthcare facilities must comply with federal reporting</p> | <p>8/1/2010</p> |

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>requirements, and may collect other HAI data to address specific needs of their facility in infection control and prevention. Additionally, the HAI Coordinator, HICP Readiness Coordinator and other ADPH staff in the Division of Infectious Disease & Outbreaks participate in CDC, CSTE and/or APIC teleconferences, workshops and trainings. ADPH continues to collaborate with AHQI and AQAF to develop / implement HAI awareness and evidenced-based prevention education at the Fall and Spring Alabama Quality Forum annually.</p> <p style="margin-left: 40px;">ii. Establish protocols and provide training for health department staff to investigate outbreaks, clusters, or unusual cases of HAIs.</p> | <div style="border-top: 1px solid black; height: 400px; width: 100%;"></div> <div style="border-top: 1px solid black; border-bottom: 1px solid black; padding: 5px;">1/1/2011</div> |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>The Bureau of Communicable Disease (BCD) Infectious Diseases & Outbreaks Division (ID&O) has established protocols and provides training to health department staff to investigate outbreaks, clusters, and cases of public health importance. The HAI program is located in ID&O. Staff review and revise as appropriate to include HAI outbreaks in appropriate internal documents such as the Outbreak Investigation Protocol. The HAI staff and surveillance staff will continue to receive updates, training and refreshers in all disease investigation policies and protocols.</p> <p style="margin-left: 40px;">iii. Develop mechanisms to protect facility/provider/patient identity when investigating incidents and potential outbreaks during the initial evaluation phase, where</p> | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p style="text-align: right;">possible, to promote reporting of outbreaks</p> <p>ADPH staff must participate in all mandatory ADPH HIPAA Privacy Awareness Training and HIPAA Security Awareness Training. Staff training files with proof of HIPAA training is maintained in the Department personal files.</p> <p>Also, the Mike Denton Infection Reporting Act mandates that the health department shall not release any information obtained from the data in a form which could be used to identify a patient. Additionally, the Healthcare Data Advisory Council and all reporting facilities will continue to review and comment on any HAI data report prior to its publication or release for general public use.</p> <p style="text-align: center;">iv. Improve overall use of surveillance data to identify</p> | |

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| | | <p>and prevent HAI outbreaks or transmission in HC settings (e.g., hepatitis B, hepatitis C, multi-drug resistant organisms (MDRO), and other reportable HAIs)</p> <p>ADPH Central Office and Area ID&O staff conduct Detect, Test & Report Notifiable Diseases (DTR) presentations to internal and external partners to enhance awareness of the importance of prompt outbreak identification, reporting and testing to facilitate prompt identification of causative pathogen and tailor prevention and control measures to contain the outbreak and prevent future reoccurrences.</p> <p>ADPH and the Healthcare Data Advisory Council will continue to provide hospitals with a 9 month HAI preliminary report and to</p> | |

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| | | <p>publish an annual HAI public report. The Annual HAI public report will continue to be reviewed by the Council for release approval to facilities for the 45 day comment period prior to publication. The HAI Coordinator will continue collaboration with external partners such as the Alabama Quality Assurance Foundation (AHAF), Alabama Healthcare Quality Initiative (AHQI), the Alabama Hospital Association (AlaHA) to encourage hospital Infection Preventionists to utilize the analysis feature in NHSN to generate facility specific HAI data reports such as the TAP reports to provide their providers with meaningful and actionable HAI data to enhance HAI reduction activities and implement targeted prevention strategies. Use of NHSN TAP report feature will provide facility staff with the number of infections needed to prevent to be in line with the national SIR.</p> | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| | | <i>Other activities or descriptions:</i> | |
| <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>ADPH's BCL will continue to apply for funding to enhance the laboratory capacity for detection and reporting of emerging resistant strains and emerging HAI issues. Effective December 31, 2014, laboratories are required to report electronically to ADPH; laboratories without ELR ability must access ADPH website and manually enter test results and required demographic information into ADPH's report card. When an emerging or resistant strain is confirmed and typed by BCL, the reporting facility will be contacted by ADPH to encourage more active surveillance and investigation of the case.</p> | Updated 12/31/14 |
| | | <i>Other activities or descriptions:</i> | |

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| <input checked="" type="checkbox"/> | <input 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 <p>ID&O has established outbreak protocols for investigating outbreaks in varied healthcare settings. ID&O State and Local staff are trained to investigate outbreaks using established protocols and offer DTR training to providers statewide. Local public health staff meets monthly with ID&O to disease outbreaks and receive updates to established investigation documents, forms, and protocols.</p> | 1/1/2011 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <ul style="list-style-type: none"> ii. Establish mechanisms or protocols for exchanging | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| | | <p>information about outbreaks or breaches among state and local governmental partners (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)</p> <p>ID&O has established a mechanism with the Bureau of Health Provider Standards for notifications about outbreaks in Long-Term Care (LTC) facilities and infection control breaches. The Bureau of Health Provider Standards alerts ID&O of outbreaks in LTC facilities via their electronic Incident Reporting System. Infection Control issues are communicated via email. HAI staff may coordinate with staff from the Alabama Quality Assurance Foundation to arrange infection control consultation by a certified infection control person for LTC facilities identified to</p> | |

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| | | have infection control issues. | |
| <i>Other activities or descriptions:</i> | | | |
| <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" 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 <i>Staphylococcus aureus</i> (MRSA) Infections v. Surgical Site Infections (SSI) vi. Ventilator-associated Pneumonia (VAP) | <p>1/1/2010 Update with additional work groups 10/1/16</p> |

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| | | <p>ADPH and the Healthcare Data Advisory Council have established hospital HAI targets. By state law, all general, critical access and specialized hospitals are mandated to report monthly in NHSN HAI data to ADPH in the following categories: CAUTI, CLABSI, and SSI (abdominal hysterectomies and colon surgeries). Additionally, Alabama facilities must comply with federal HAI reporting requirements and may utilize NHSN to conduct surveillance on other HAIs to develop prevention strategies for their facility.</p> <p>If the Healthcare Data Advisory Council approves the establishment of an antimicrobial resistance stewardship work group, ADPH plans to ask all general, critical access and specialized hospitals to confer rights to ADPH granting access to C difficile and MDRO HAI data to help benchmark and measure progress</p> | |

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| | | of the antimicrobial resistance stewardship work group. | |
| <i>Other activities or descriptions:</i> | | | |
| ☒ | ☐ | <p>5. Adopt national standards for data and technology to track HAIs (e.g., NHSN).</p> <p style="padding-left: 40px;">i. Develop metrics to measure progress towards national goals (align with targeted state goals). (See Appendix 1).</p> <p>By law, ADPH collects HAI data based on CDC's NHSN terminology and guidelines. Per the Mike Denton Infection Reporting Act, ADPH and the Healthcare Data Advisory Council have established a uniform system of HAI data collection, reporting and evaluation. Per ADPH's HAI reporting rules, all general, critical access and specialized hospitals must report monthly in NHSN CAUTI, CLABSI and SSI (abdominal hysterectomies and colon surgeries) HAI data. HAI staff analyzes the data</p> | 1/1/2010 |

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>to prepare a 9 month preliminary report, and an Annual report that is reviewed by the Council and the facilities prior to any data releases. The HAI annual reports compare facility HAI data to the national SIR. Based on the data analysis, facilities are rated as similar, better or worse than the national SIR in all required HAI reporting categories (CAUTI, CLABSI, and SSI –abdominal hysterectomies and colon surgeries).</p> <p style="text-align: center;">ii. Establish baseline measurements for prevention targets</p> <p>With guidance from the Healthcare Data Advisory Council, HAI program staff established an annual report format specific to selected prevention targets. Facilities SIR ratings are compared to national SIR for each specific HAI target, and rated as similar, better or worse</p> | |

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| | | than the national SIR. ADPH and HAI staff coordinate with AlaHA, AHQI and AQAF to recruit and encourage facilities to participate in collaborative activities aimed at reducing specific HAIs. | |
| | | <i>Other activities or descriptions:</i> | |
| ☒ | ☐ | <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 <p>ADPH and HAI staff will continue to collaborate with AHQI, AQAF and AlaHA to coordinate and plan training activities on NHSN, enrollment requirements, data collection requirements (state & federal) and how to utilize NHSN</p> | 5/1/2010 |

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| | | analysis feature to generate facility specific HAI reports to identify problem locations, develop and implement targeted prevention strategies to reduce HAIs. | |
| | | <i>Other activities or descriptions:</i> | |
| ☒ | ☐ | <p>7. Develop tailored reports of data analyses for state or region prepared by state personnel</p> <p>By state law, ADPH is responsible for the collection, analysis, reporting and disseminating of HAI data for use by the general public.</p> <p>ADPH and the HAI staff will continue to produce a 9 month preliminary report for facilities as well as the annual HAAI public report. Prior to the release of any reports, the Healthcare Data Advisory Council and facilities must review the report. Once approved by the Council, the report is released for facility use or published for use by the general public.</p> | <p>1/31/11</p> <p>Annual activity</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>for healthcare facilities that targets any data shortcomings detected</p> <p>External validation will be conducted using CDC's External Validation Toolkit. Conducting external validation of targeted facilities will assure accuracy of HAI data, identify and correct reporting errors, as well as, provide an opportunity for on-site education on NHSN definitions and reporting guidelines. For 2014 calendar year validations, Alabama's 92 general, critical access and specialized hospitals rated Alabama as a medium state per the CDC's External Validation Toolkit. These guidelines define a medium state as having 21 to 145 hospitals. Being a medium state, Alabama must select 18 targeted facilities plus a 5 percent (%) random sample of remaining facilities for a total of 21 targeted facilities to</p> | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|--|---------------------------------|
| | | <p>be validated annually. Prior to conducting validation visits, the HAI Epi will select 21 targeted facilities for validation site visits by adhering to CDC's guidance for sample selection of targeted facilities. Once the HAI Epi has generated the list of targeted hospitals to be validated, the HAI Coordinator will send a letter via email to each IP at the targeted hospitals explaining the purpose of the on-site visit and requesting needed positive culture reports for the calendar year, a list of NHSN reported events for the calendar year, and the letter will include the CDC denominator counting method surveys. In the letter, facilities will be asked to have the denominator survey completed prior to the scheduled visit. Once ADPH HAI staff receives positive culture line listing for the calendar year and the NHSN report of event for the calendar year, the HAI Epi will utilize the CDC's External Validation</p> | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|---|---------------------------------|
| | | <p>Toolkit guidance to select the list of medical records to be audited for each targeted facility. The HAI Coordinator will contact the IP and/or Chief of Quality to schedule the on-site visit. The list of medical records to be reviewed will be emailed to each facility prior to the scheduled visit. Discrepancies identified during the medical record audit will be discussed with the IP staff, providing on-site education on NHSN definitions and criteria. Also, the HAI Coordinator will review the denominator survey information, mapping locations in NHSN for accuracy while on-site. Each targeted facility will receive a post-validation visit letter outlining audit results with recommendations to improve HAI identification and reporting as appropriate, in accordance with CDC's External Validation Toolkit. The HAI Coordinator will utilize the introductory and post validation sample letters found in the toolkit as the</p> | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|--|--------------------------|---|---------------------------------|
| | | <p>framework for composing the State’s introductory letter and post validation letters. The HAI Coordinator will report a summary of the findings of the validation visit to the Healthcare Data Advisory Council, as well as, include a summation of the validation site visit results in the annual HAI public report.</p> | |
| <i>Other activities or descriptions:</i> | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>9. Develop preparedness plans for improved response to HAI</p> <ul style="list-style-type: none"> 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>ADPH will continue to collaborate with internal partners including BCL and the Bureau of Health Provider Standards to review and revise established protocols, and provide training to</p> | <p>1/1/2011</p> |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|--|---------------------|---|---------------------------------|
| | | health department staff to investigate HAI outbreaks, suspect cases, clusters and cases of public health importance. ID&O protocols will be updated as appropriate to include HAI outbreak identification, reporting and investigation response. ID&O staff will continue to receive training and updates on all investigation policies and protocols. | |
| <i>Other activities or descriptions:</i> | | | |
| ☒ | ☐ | <p>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</p> <p>ADPH HAI program staff collaborates with the Bureau of Health Provider Standards to establish, review and revise protocols for identifying and investigating complaints of</p> | 1/1/2011 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|---|---------------------------------|
| | | infection control breaches in LTC settings. Also, ADPH HAI staff continues to collaborate with AQAF to assist with consultative services for providing a certified infection control clinician to conduct infection control survey of LTC facilities and make recommendations for resolution of infection control issues. ADPH HAI staff maintains collaboration with the Advisory Council, AHQI, AQAF, the Alabama Nursing Home Association, Medical Association of Alabama and Regional APIC for enhancing HAI awareness, education and training needs of the public and providers to prevent or reduce HAIs. | |
| | | <i>Other activities or descriptions:</i> | |
| ☒ | ☐ | 11. Adopt integration and interoperability standards for HAI information systems and data sources i. Improve overall use of surveillance data to identify | 1/1/2010 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|---|---------------------------------|
| | | <p>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 the spectrum of inpatient and outpatient healthcare settings</p> <p>In addition to current internal hospital reporting and prevention efforts, much work has been done on a statewide basis through the AHQI. All hospitals continue to meet quarterly to learn more about infection prevention, share best practices, and establish benchmarks using trended information. There has been a focused effort on standardizing hospital practices to eliminate the variation that could affect reporting, and ultimately patient care.</p> | |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|---|---------------------------------|
| ☒ | ☐ | <p>Alabama law requires the collection and reporting of HAI data based on the guidelines and definitions of NHSN.</p> <p style="padding-left: 40px;">ii. Promote definitional alignment and data element standardization needed to link HAI data across the nation.</p> <p>ADPH HAI program staff has completed NHSN training and serve as a technical resource to help train and educate reporting facilities.</p> <p>ADPH HAI program staff continues to participate in NHSN training to ensure effective and standardized reporting of HAI data.</p> | 1/1/2010 |
| | | <i>Other activities or descriptions:</i> | |
| | | 12. Enhance electronic reporting and information technology for healthcare facilities to reduce reporting burden and increase timeliness, efficiency, | 12/31/15 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>comprehensiveness, and reliability of the data</p> <p style="padding-left: 40px;">i. Report HAI data to the public</p> <p>ADPH provides a HAI annual report to the public by December 31st of each year that contains specific comparative healthcare facility acquired infection rates. Healthcare facilities are authorized to review and comment on the report prior to publication or release for general public use, and the Healthcare Data Advisory Council is granted the authority to review any report or publication prior to release. An overarching and stated intent of the law is that ADPH use the data and information for the benefit of the public. While individual patient data shall at all times remain confidential and privileged from discovery, reports and studies released shall be public information.</p> | <p>10/1/2012</p> |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|-------------------------------------|-------------------------------------|--|---------------------------------|
| | | <i>Other activities or descriptions:</i> | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>13. Make available risk-adjusted HAI data that enable state agencies to make comparisons between hospitals.</p> <p>By law, reports and studies prepared by ADPH must be statistically risk adjusted using a generally accepted formula for such adjustments to account for variations in patient morbidity and diagnosis. Hospitals will submit data to ADPH through the National Healthcare Safety Network (NHSN), and this risk-adjusted data will be used to make comparisons among hospitals. Reports and studies will be prepared that provide specific comparative healthcare facility HAI rates.</p> | 10/1/2012 |
| | | <i>Other activities or descriptions:</i> | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p>14. Enhance surveillance and detection of HAIs in nonhospital settings</p> | 1/1/2016 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|--|---------------------------------|
| | | ADPH will collaborate with the organizations represented in the Healthcare Data Advisory Council, the Governor's Office and the State Legislature to ensure a continual funding source for ADPH resources and continue to look for future opportunities to support data collection and reporting from long term care and outpatient care settings. | |
| | | <i>Other activities or descriptions:</i> | |

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 | 1/1/2010 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|--|--------------------------|--|---------------------------------|
| | | <p>group.</p> <p>HAI program staff will ensure adequate data submission to illustrate progress in CLABSI, CAUTI, and SSI for abdominal hysterectomies and colon surgeries. HAI program staff will monitor hospital data submission, and provide hospitals technical assistance. By January, 2011 and thereafter, 100% of acute, specialty, and critical access hospitals will report on selected HAI prevention targets using NHSN criteria.</p> | |
| <i>Other activities or descriptions:</i> | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>2. Establish prevention working group under the state HAI advisory council to coordinate state HAI collaboratives</p> <p style="padding-left: 40px;">i. Assemble expertise to consult, advise, and coach inpatient healthcare facilities involved in HAI prevention collaborative</p> <p>Technical workgroups will be established by the Healthcare Data Advisory Council to assist with</p> | <p>1/1/2011</p> |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|---|---------------------------------|
| | | <p>HAI collaboratives and education and awareness programs. ADPH will work with AHQI using programs in place to coordinate plans for implementation of broad-based safe practices and utilization of evidence-based clinical practices in all Alabama hospitals to reduce and prevent HAIs.</p> | |
| | | <p><i>Other activities or descriptions:</i></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> <p>While conducting external validation visits, the HAI Coordinator will ask selected healthcare facilities to show evidence of utilizing their facility-specific HAI data to implement prevention strategies, and will determine if the healthcare facility participates in any collaborative. The State HAI Coordinator will continue to communicate the results of external</p> | <p>1/1/2012</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>validation visits to the Healthcare Data Advisory Board, highlighting surveillance and reporting issues identified. The HAI Coordinator will work with AlaHA, AHQI, and AQAF on HAI collaborative.</p> <p>In 2013, 7 hospitals participated in an initiative to reduce SSIs, 18 hospitals participated in an initiative to reduce CLABSIs, and 21 hospitals participated in an initiative to reduce CAUTIs. This same year, ADPH collaborated with AlaHA in their “Join the Health Journey”. Thirty-three hospitals were able to track reductions in CAUTIs (43% all tracked units), CLABSIs (28% all units by device days), and SSIs (28%). Alabama Quality Initiative Task Force (AQITF) sponsored a NIMS reduction project and 67 hospitals achieved a total NIM reduction rate of 4.0% in 2013. For 2014, the goal for 8 hospitals participating with AlaHA is to achieve less than 1 CAUTI.</p> <p style="text-align: right;">i. Identify staff trained in project</p> | 1/1/2012 |

| 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 style="text-align: right;">coordination, infection control, and collaborative coordination</p> <p>ADPH, AlaHA, AQAF, AHQI, and AQITF have identified staff and resources to continue collaborative projects each year.</p> <p style="text-align: right;">ii. Develop a communication strategy to facilitate peer-to-peer learning and sharing of best practices</p> <p>The HAI Coordinator participates in two Quality Forums each year and two webinars to assist AlaHA and AQAF disseminate HAI information and share best practices.</p> <p>Another method of communication with Alabama hospitals, the general public and external partners and to support the HAI program, is through the ADPH HAI webpage within the ADPH web site, www.adph.org.</p> | 1/1/2010 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p style="text-align: right;">iii. Establish and adhere to feedback from standardized</p> | 1/1/2010 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|--|--------------------------|---|---------------------------------|
| | | <p style="text-align: center;">outcome data to track progress</p> <p>ADPH HAI program staff will monitor hospital data submission, provide hospital facilities technical assistance, and generate reports on progress using validated data.</p> | |
| <i>Other activities or descriptions:</i> | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>4. Develop state HAI prevention training competencies</p> <p style="padding-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> <p>A training program was established in 2010 to</p> | 1/1/2010 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| | | assist in training 100% of Alabama hospitals in the use of NHSN. Currently, the HAI Coordinator and epidemiologist attend HAI grantee and NHSN CDC sponsored training sessions to keep abreast of changes. The HAI Coordinator assists AlaHA and AQAF in conducting ongoing training for both new and seasoned NHSN users. | |
| <i>Other activities or descriptions:</i> | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p>5. Implement strategies for compliance to promote adherence to HICPAC recommendations</p> <ul style="list-style-type: none"> 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>ADPH HAI program staff will work with the Bureau of Health Provider Standards and the</p> | 10/1/2015 |

| 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>Advisory Council to review current statutory standards for healthcare infection control and prevention, and update or develop new regulations as necessary.</p> <p>ii. Coordinate/liaise with regulation and oversight activities such as inpatient or outpatient facility licensing/accrediting bodies and professional licensing organizations to prevent HAIs</p> <p>ADPH HAI program staff will continue to liaise with the Bureau of Health Provider Standards, the Advisory Council, AlaHA, AHQI, AL Nursing Home Association, Medical Association of Alabama, and Regional APIC to prevent HAIs.</p> | 1/1/2010 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>iii. Improve regulatory oversight of hospitals, enhance surveyor training and tools, and add sources and uses of infection</p> | 1/1/2010 Update 1/1/2016 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
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| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p style="text-align: center;">control data</p> <p>ADPH HAI program staff will continue to work with the Healthcare Data Advisory Council, hospitals and any Technical Advisory Committee to update and enhance public awareness campaigns and strategies. ADPH HAI program staff will continue to provide training via webcasts, internet based training to new users and for existing reporting facilities regarding NHSN changes. ADPH HAI program staff will share reporting information with Health Provider Standards, conduct training with HPS staff, and work with HPS staff to enhance oversight.</p> <p>iv. Consider expanding regulation and oversight activities to currently unregulated settings where healthcare is delivered and work with healthcare partners to establish best</p> | 1/1/2016 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|--|-------------------------------------|--|---------------------------------|
| | | <p>practices to ensure adherence</p> <p>The HAI Coordinator will work with Health Provider Standards and explore opportunities to support data collection and reporting from long term care and outpatient care settings.</p> | |
| <i>Other activities or descriptions:</i> | | | |
| <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>ADPH will continue to work with AlaHA, AQAF, AHQI, and the AQITF on joint HAI prevention collaboratives each year. Progress is reported on the AlaHA and AQAF web sites, and to the Healthcare Data Advisory Council.</p> | 1/1/2012 |
| <i>Other activities or descriptions:</i> | | | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p>7. Establish collaborative(s) to prevent HAIs in nonhospital settings (e.g., long term care, dialysis)</p> | 1/1/2016 |

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|----------------------|---------------------|---|---------------------------------|
| | | The HAI Coordinator will work with Health Provider Standards, the Nursing Home Association, and other healthcare partners to explore opportunities to support data collection and reporting from long term care and outpatient care settings. | |
| | | <i>Other activities or descriptions:</i> | |

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 Dates 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 | 1/1/2011 |

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| | | ADPH HAI staff monitors hospital data submissions, provides hospital facilities technical assistance, and generates facility specific reports as well as conducts on site validation visits. Validation visits include education and needs assessment surveys. Further, each year the Healthcare Data Advisory Council meets to discuss and approve reporting categories and locations. Updates and new information are disseminated to hospitals through the Quality Forums and webinars as well as through direct communications from the HAI Coordinator to the Infection Preventionist. | |
| | | <i>Other activities or descriptions (not required):</i> | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | 2. Develop and implement a communication plan about the state's HAI program and about progress to meet public and private stakeholders needs <ul style="list-style-type: none"> i. Disseminate state priorities for HAI prevention to healthcare organizations, professional provider | 1/1/2010 |

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| | | <p>organizations, governmental agencies, non-profit public health organizations, and the public</p> <p>A primary method of communication with Alabama hospitals, the general public and external partners and to support the HAI program, is the statewide HAI page within the ADPH web site, www.adph.org.</p> <p>ADPH HAI Program staff will have responsibility for the development and maintenance of the HAI web pages. The annual reports are published on these pages as well as the Alabama Healthcare Infection Reporting Rules, educational information, and links to ADPH healthcare partners.</p> | |
| | | <i>Other activities or descriptions:</i> | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>3. Provide consumers access to useful healthcare quality measures</p> <p style="padding-left: 40px;">i. Disseminate HAI data to the public</p> <p>ADPH provides a HAI annual report to the public by December 31st of each year that</p> | 1/1/2010 |

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| | | contains specific comparative healthcare facility acquired infection rates. Healthcare facilities are authorized to review and comment on the report prior to publication or release for general public use, and the Healthcare Data Advisory Council is granted the authority to review any report or publication prior to release. An overarching and stated intent of the law is that ADPH use the data and information for the benefit of the public. While individual patient data shall at all times remain confidential and privileged from discovery, reports and studies released shall be public information. | |
| | | <i>Other activities or descriptions:</i> | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <p>4. Guide patient safety initiatives</p> <p>i. Identify priorities and provide input to partners to help guide patient safety initiatives and research aimed at reducing HAIs</p> <p>In order to identify priorities and provide input</p> | 1/1/2010 |

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| | | <p>to partners to help guide patient safety initiatives aimed at reducing HAIs reports and assessments are drafted, reviewed and disseminated including: data comparisons between hospitals, reports for individual facilities, comparative reports bolstered by regional and national data, reports and surveys requested by individual hospitals, and best practice stories from hospitals or systems of hospitals. Information is shared directly with facilities, through the ADPH HAI web pages, and during the Quality Forums and webinars.</p> | |
| | | <p><i>Other activities or descriptions:</i></p> | |

Healthcare Infection Control and Response (Ebola-associated activities)

The techniques and practice on which infection control protocols are based form the backbone of infectious disease containment for pathogens that are otherwise amplified and accelerated in healthcare settings. Investments in a more robust infection control infrastructure will prevent many HAIs transmitted to, and among, patients and health care workers.

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| | | <p>ambulatory surgical centers, 300 assisted living facilities, 231 nursing homes, 160 hemodialysis centers, and 26 rehabilitation centers.</p> <p>2. Identify current regulatory/licensing oversight authorities for each healthcare facility and explore ways to expand oversight</p> <p>The Healthcare Infection Control & Prevention Readiness (HICP Readiness) Disease Intervention Specialist (DIS) working under the supervision of the HICP Readiness Coordinator in the Infectious Diseases & Outbreaks Division (ID&O) will collaborative with Health Provider Standards to identify current regulatory/licensing oversight authorities for each healthcare facility. The DIS will convene a working group of the Healthcare Data Advisory Group that includes members from Health Provider Standards and ADPH General Council to explore ways to expand oversight.</p> | |
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| | | <i>Other activities or descriptions:</i> | |
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" 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>ADPH will assess readiness of hospitals designated as Ebola Assessment and/or Treatment Hospitals. The ADPH Center for Emergency Preparedness (CEP) and the Alabama Hospital Association (AlaHA) has completed a survey of all Alabama hospitals requesting information on hospitals which have volunteered to be assessed as an Ebola-designated Assessment Hospital. ADPH has created teams including ID&O, CEP, and Area and Local health department staff to</p> | 6/1/2015 |

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| | | <p>complete assessments using the CDC readiness assessment tool adapted for Alabama. The assessment will include an on-site infection control assessment of four hospitals currently in line for assessment. ADPH will continue to assess and add hospitals to the list of Ebola-designated Assessment Hospitals throughout the State with a goal of at least one Ebola-designated Assessment Hospital in each of the seven Hospital Regions.</p> <p>The HICP Readiness Coordinator will work with the State HAI Coordinator, CEP, the Bureau of Clinical Laboratories (BCL), Bureau of Environmental Services (BES), Local and Area Public Health staff, the Hospital Association, and the Alabama Quality Assurance Foundation to address gaps in the readiness for Ebola-designated Assessment and Treatment Hospitals. Consultation and training resources will be identified and ADPH will work with hospitals to develop plans to mitigate gaps.</p> | |
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| | | The ADPH Assessment Team will conduct a second assessment for each Ebola-designated Assessment Hospital to confirm whether or not gaps in infection control processes were mitigated. The assessment will include an on-site infection control assessment of all four hospitals currently identified as Ebola-designated Assessment Hospitals within the first six months of the second year of the project. If additional hospitals are ready to be assessed as Ebola-designated Assessment Hospitals, those hospitals will be prioritized so that hospitals in each of the seven Alabama Hospital Regions without an Ebola-designated Assessment Hospital will be assessed first. | |
| | | <i>Other activities or descriptions:</i> | |
| <input type="checkbox"/> <input type="checkbox"/> | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | 4. Assess outbreak reporting and response in healthcare facilities <ul style="list-style-type: none"> i. Use standard assessment tool and determine gaps in outbreak | 1/1/ 2016 |

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| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p style="text-align: center;">reporting and response</p> <ul style="list-style-type: none"> ii. Address gaps (mitigate gaps) iii. Track HAI outbreak response and outcome <p>The Infectious Diseases & Outbreaks Division (ID&O) will develop a standard survey tool to assess the capacity of healthcare facilities to detect, report, and respond to potential outbreaks to determine gaps in outbreak reporting and responses for all healthcare settings. ID&O will build on current Outbreak Investigation protocols which include presenting the DETECT, TEST, and REPORT (DTR) Notifiable Disease Reporting information to any disease reporter involved in an outbreak. Each year, staff will survey hospitals, nursing homes, and other healthcare facilities in each respective public health area (PHA) for capability to detect, report, and respond to outbreaks, to include a minimum of all hospitals and 10 other healthcare facilities (90 hospitals and 110 healthcare facilities per year). The DTR</p> | |
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| | | presentation will be provided to each facility surveyed, presentations will continue to be offered to any facility involved in an outbreak. All outbreak response and outcomes are tracked and recorded on the outbreak master line list. Outbreak reports are drafted for each outbreak. | |
| | | <i>Other activities or descriptions:</i> | |

Table 6: Targeted Healthcare Infection Prevention Programs

| Check Items Underway | Check Items Planned | Items Planned for Implementation (or currently underway) | Target Dates for Implementation |
|--|---|---|---------------------------------|
| <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> | 1. Expand infection control assessments <ul style="list-style-type: none"> i. Expand assessments to other additional facilities and other healthcare settings and determine gaps in infection control <p>There are approximately 90 acute care hospitals, 40 ambulatory surgical centers, 300 assisted living facilities, 231 nursing homes,</p> | 1/1/ 2016 |

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| | | <p>160 hemodialysis centers, and 26 rehabilitation centers in Alabama. ADPH will expand infection control assessments to include not only the number of facilities assessed, but the type of facilities to identify gaps in infection control practices and procedures. The expanded Healthcare Data Advisory Council will convene to assist ADPH with prioritization of assessments to include both remote and on-site assessments using assessment tools developed by CDC, CMS, and APIC. Initial assessment tools developed and approved by the CDC will be sent to 100% of the healthcare facilities named, followed by remote and on-site assessments of a minimum of 10% of the facilities each year as prioritized by the expanded Healthcare Data Council. Identified gaps will be shared with all facilities.</p> <p>ii. Address gaps (mitigate gaps) The Disease Intervention Specialist will solicit and collect assessments from facilities both electronically and via site visits. The</p> | |
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| | | <p>assessments will be review and identified gaps will be shared with the facility and reported to ADPH staff and the Healthcare Data Advisory Council.</p> <p>iii. Conduct follow-up assessments</p> <p>HICP Readiness staff will meet with the expanded Healthcare Data Advisory Council to determine facilities requiring follow up to confirm mitigation of identified gaps. The Council will develop a process to sustain assessment of facilities, identification of gaps, and confirmation of mitigation.</p> | |
| | | <i>Other activities or descriptions:</i> | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <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</p> | 1/1/ 2016 |

| | | | |
|--------------------------|-------------------------------------|---|--|
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | <p>continuing education requirements for clinical care providers (e.g., medical license, admitting privileges) and/or licensing/accreditation requirements for healthcare facilities.</p> <p>HICP Readiness staff will meet with ADPH Health Provider Standards Licensure and Certification staff to discuss incorporation of basic infection control knowledge and practice assessments into licensing requirements. Staff will also meet with the Alabama Quality Assurance Foundation to collaborate on training and continuing education programs.</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</p> | |
|--------------------------|-------------------------------------|---|--|

| | | | |
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| | | <p>and competency.</p> <p>HICP Readiness staff will collaborate with Alabama Quality Assurance Foundation to schedule at least one training and continuing education program.</p> <p>A sustainable training program that addresses the most important infection control gaps will be built into the existing Detect, Test, and Report Notifiable Diseases educational program. An Infection Control presentation will be developed for facilities that will include legal requirements, outbreak response, and best practices. CEUs will be issued to participants. Field surveillance Staff and Central Office staff will conduct presentations with a minimum of ten presentations in each public health area to acute care hospitals, skilled care nursing homes, and assisted living facilities staff each year. HICP Readiness staff will collaborate with the Alabama Quality Assurance Foundation to offer training by partner</p> | |
|--|--|---|--|

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|--------------------------|-------------------------------------|--|-----------|
| | | organizations at least once a year. Alternative training venues will be researched to include mega-conferences, web-based, on-line, video conferencing, etc. | |
| | | <i>Other activities or descriptions:</i> | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | 3. Enhance surveillance capacity to improve situational awareness, describe emerging threats, and target onsite assessments to implement prevention programs | 1/1/ 2016 |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | i. Build capacity to analyze data reported by facilities in a defined region to allow for a comprehensive assessment of potential healthcare-associated infection threats, and communicate results with healthcare facilities. | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | ii. Work with CDC to guide analytic direction and identify facilities for prioritized assessments/response | |
| <input type="checkbox"/> | <input checked="" type="checkbox"/> | iii. Improve outbreak reporting capacity by developing an infrastructure that includes clear definitions of infectious threats of epidemiologic importance | |

| | | | |
|--|---|--|--|
| | | <p>that are communicated to facilities</p> <p>iv. Implement a response plan to address potential emerging threats identified by using enhanced surveillance</p> <p>HICP Readiness staff will collaborate with the HAI State Coordinator, ID&O Surveillance staff and epidemiologists, and CEP staff to explore resources to enhance surveillance and improve situational awareness of emerging threats.</p> <p>The DTR Program will be used to continue to educate providers on reporting infectious diseases and outbreaks. Health alerts will be sent to providers on emerging threats and the ADPH web pages will be updated to provide accurate and timely information regarding emerging threats and response.</p> <p>Education/Awareness/Training will be provided to State, Area and local staff on Outbreak Investigation protocols and Infectious Disease Response plans.</p> | |
| | <p><i>Other activities or descriptions:</i></p> | | |

Appendix 1

The HHS Action plan identifies metrics and 5-year national prevention targets. These metrics and prevention targets were developed by representatives from various federal agencies, the Healthcare Infection Control Practices Advisory Committee (HICPAC), professional and scientific organizations, researchers, and other stakeholders. The group of experts was charged with identifying potential targets and metrics for six categories of healthcare-associated infections:

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

Following the development of draft metrics as part of the HHS Action Plan in January 2009, HHS solicited comments from stakeholders for review.

Stakeholder feedback and revisions to the original draft Metrics

Comments on the initial draft metrics published as part of the HHS Action Plan in January 2009 were reviewed and incorporated into revised metrics. While comments ranged from high level strategic observations to technical measurement details, commenters encouraged established baselines, both at the

national and local level, use of standardized definitions and methods, engagement with the National Quality Forum, raised concerns regarding the use of a national targets for payment or accreditation purposes and of the validity of proposed measures, and would like to have both a target rate and a percent reduction for all metrics. Furthermore, commenters emphasized the need for flexibility in the metrics, to accommodate advances in electronic reporting and information technology and for advances in prevention of HAIs, in particular ventilator-associated pneumonia.

To address comments received on the Action Plan Metrics and Targets, proposed metrics have been updated to include source of metric data, baselines, and which agency would coordinate the measure. To respond to the requests for percentage reduction in HAIs in addition to HAI rates, a new type of metric, the standardized infection ratio (SIR), is being proposed. Below is a detailed technical description of the SIR.

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

| Metric Number and Label | Original HAI Elimination Metric | HAI Comparison Metric | Measurement System | National Baseline Established (State Baselines Established) | National 5-Year Prevention Target | Coordinator of Measurement System | Is the metric NQF endorsed ? |
|--------------------------------|--|------------------------------|---------------------------|--|--|--|-------------------------------------|
| 1. CLABSI 1 | CLABSIs per 1000 device | CLABSI SIR | CDC NHSN | 2006-2008 (proposed 2009, in | Reduce the CLABSI SIR by at least 50% | CDC | Yes* |

| Metric Number and Label | Original HAI Elimination Metric | HAI Comparison Metric | Measurement System | National Baseline Established (State Baselines Established) | National 5-Year Prevention Target | Coordinator of Measurement System | Is the metric NQF endorsed ? |
|-------------------------------|---|---|---|---|---|-----------------------------------|------------------------------|
| | days by ICU and other locations | | Device-Associated Module | consultation with states) | from baseline or to zero in ICU and other locations | | |
| 2. CLIP 1 (formerly CLABSI 4) | Central line bundle compliance | CLIP Adherence percentage | CDC NHSN CLIP in Device-Associated Module | 2009 (proposed 2009, in consultation with states) | 100% adherence with central line bundle | CDC | Yes [†] |
| 3a. C diff 1 | Case rate per patient days; administrative/discharge data for ICD-9 CM coded <i>Clostridium</i> | Hospitalizations with <i>C. difficile</i> per 1000 patient discharges | Hospital discharge data | 2008 (proposed 2008, in consultation with states) | At least 30% reduction in hospitalizations with <i>C. difficile</i> per 1000 patient discharges | AHRQ | No |

| Metric Number and Label | Original HAI Elimination Metric | HAI Comparison Metric | Measurement System | National Baseline Established (State Baselines Established) | National 5-Year Prevention Target | Coordinator of Measurement System | Is the metric NQF endorsed ? |
|-------------------------|--|-------------------------|--|--|---|-----------------------------------|------------------------------|
| | <i>difficile</i> Infections | | | | | | |
| 3b. C diff 2 (new) | | <i>C. difficile</i> SIR | CDC NHSN MDRO/C DAD Module LabID [‡] | 2009-2010 | Reduce the facility-wide healthcare facility-onset <i>C. difficile</i> LabID event SIR by at least 30% from baseline or to zero | CDC | No |
| 4. CAUTI 2 | # of symptomatic UTI per 1,000 urinary catheter days | CAUTI SIR | CDC NHSN Device-Associated Module | 2009 for ICUs and other locations 2009 for other hospital units (proposed 2009, in consultation with states) | Reduce the CAUTI SIR by at least 25% from baseline or to zero in ICU and other locations | CDC | Yes [*] |

| Metric Number and Label | Original HAI Elimination Metric | HAI Comparison Metric | Measurement System | National Baseline Established (State Baselines Established) | National 5-Year Prevention Target | Coordinator of Measurement System | Is the metric NQF endorsed ? |
|--------------------------------|---|------------------------------|---|---|---|--|-------------------------------------|
| 5a. MRSA 1 | Incidence rate (number per 100,000 persons) of invasive MRSA infections | MRSA Incidence rate | CDC EIP/ABCs | 2007-2008 (for non-EIP states, MRSA metric to be developed in collaboration with EIP states) | At least a 50% reduction in incidence of healthcare-associated invasive MRSA infections | CDC | No |
| 5b. MRSA 2 (new) | | MRSA bacteremia SIR | CDC NHSN MDRO/C DAD Module LabID [‡] | 2009-2010 | Reduce the facility-wide healthcare facility-onset MRSA bacteremia LabID event SIR by at least 25% from baseline or to zero | CDC | No |
| 6. SSI 1 | Deep incision and organ space infection | SSI SIR | CDC NHSN Procedure- | 2006-2008 (proposed 2009, in consultation with | Reduce the admission and readmission SSI [§] SIR by at least 25% from | CDC | Yes [¶] |

| Metric Number and Label | Original HAI Elimination Metric | HAI Comparison Metric | Measurement System | National Baseline Established (State Baselines Established) | National 5-Year Prevention Target | Coordinator of Measurement System | Is the metric NQF endorsed ? |
|--------------------------------|--|------------------------------|---------------------------|--|--|--|-------------------------------------|
| | rates using NHSN definitions (SCIP procedures) | | Associated Module | states) | baseline or to zero | | |
| 7. SCIP 1 (formerly SSI 2) | Adherence to SCIP/NQF infection process measures | SCIP Adherence percentage | CMS SCIP | To be determined by CMS | At least 95% adherence to process measures to prevent surgical site infections | CMS | Yes |

* NHSN SIR metric is derived from NQF-endorsed metric data

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

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

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

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

Understanding the Relationship between HAI Rate and SIR Comparison Metrics

The Original HAI Elimination Metrics listed above are very useful for performing evaluations. Several of these metrics are based on the science employed in the NHSN. For example, metric #1 (CLABSI 1) for CLABSI events measures the number of CLABSI events per 1000 device (central line) days by ICU and other locations. While national aggregate CLABSI data are published in the annual NHSN Reports these rates must be stratified by types of locations to be risk-adjusted. This scientifically sound risk-adjustment strategy creates a practical challenge to summarizing this information nationally, regionally or even for an individual healthcare facility. For instance, when comparing CLABSI rates, there may be quite a number of different types of locations for which a CLABSI rate could be reported. Given CLABSI rates among 15 different types of locations, one may observe many different combinations of patterns of temporal changes. This raises the need for a way to combine CLABSI rate data across location types.

A standardized infection ratio (SIR) is identical in concept to a standardized mortality ratio and can be used as an indirect standardization method for summarizing HAI experience across any number of stratified groups of data. To illustrate the method for calculating an SIR and understand how it could be used as an HAI comparison metric, the following example data are displayed below:

| Risk Group Stratifier | Observed CLABSI Rates | | | NHSN CLABSI Rates for 2008 (Standard Population) | | |
|-----------------------|-----------------------|---------|--------------------------|---|--------------------------|--------|
| | Location | #CLABSI | #Central line- CLABSI | #CLABS | #Central line- CLABSI | CLABSI |

| Type | | days | rate* | I | days | rate* |
|---|-----|---------|-------|------|---------|-------|
| ICU | 170 | 100,000 | 1.7 | 1200 | 600,000 | 2.0 |
| WARD | 58 | 58,000 | 1.0 | 600 | 400,000 | 1.5 |
| $\text{SIR} = \frac{\text{observed}}{\text{expected}} = \frac{170 + 58}{100000 \times \left(\frac{2}{1000}\right) + 58,000 \times \left(\frac{1.5}{1000}\right)} = \frac{228}{200 + 87} = \frac{228}{287} = 0.79 \quad 95\% \text{CI} = (0.628, 0.989)$ | | | | | | |

* defined as the number of CLABSIs per 1000 central line-days

In the table above, there are two strata to illustrate risk-adjustment by location type for which national data exist from NHSN. The SIR calculation is based on dividing the total number of observed CLABSI events by an “expected” number using the CLABSI rates from the standard population. This “expected” number is calculated by multiplying the national CLABSI rate from the standard population by the observed number of central line-days for each stratum which can also be understood as a prediction or projection. If the observed data represented a follow-up period such as 2009 one would state that an SIR of 0.79 implies that there was a 21% reduction in CLABSIs overall for the nation, region or facility.

The SIR concept and calculation is completely based on the underlying CLABSI rate data that exist across a potentially large group of strata. Thus, the SIR provides a single metric for performing comparisons rather than attempting to perform multiple comparisons across many strata which makes the task cumbersome. Given the underlying CLABSI rate data, one retains the option to perform comparisons within a particular set of strata where observed rates may differ significantly from the standard populations. These types of

more detailed comparisons could be very useful and necessary for identifying areas for more focused prevention efforts.

The National 5-year prevention target for metric #1 could be implemented using the concept of an SIR equal to 0.25 as the goal. That is, an SIR value based on the observed CLABSI rate data at the 5-year mark could be calculated using NHSN CLABSI rate data stratified by location type as the baseline to assess whether the 75% reduction goal was met. There are statistical methods that allow for calculation of confidence intervals, hypothesis testing and graphical presentation using this HAI summary comparison metric called the SIR.

The SIR concept and calculation can be applied equitably to other HAI metrics list above. This is especially true for HAI metrics for which national data are available and reasonably precise using a measurement system such as the NHSN. The SIR calculation methods differ in the risk group stratification only. To better understand metric #6 (SSI 1) see the following example data and SIR calculation:

| Risk Group Stratifiers | | Observed SSI Rates | | | NHSN SSI Rates for 2008 (Standard Population) | | |
|------------------------|---------------------|--------------------|-------------|-----------------------|--|-------------|-----------------------|
| Procedure Code | Risk Index Category | #SSI [†] | #procedures | SSI rate [*] | #SSI [†] | #procedures | SSI rate [*] |
| CBGB | 1 | 315 | 12,600 | 2.5 | 2100 | 70,000 | 3.0 |
| CBGB | 2,3 | 210 | 7000 | 3.0 | 1000 | 20,000 | 5.0 |

| | | | | | | | |
|--|---|-----|------|-----|------|--------|-----|
| HPRO | 1 | 111 | 7400 | 1.5 | 1020 | 60,000 | 1.7 |
| $\text{SIR} = \frac{\text{observed}}{\text{expected}} = \frac{315 + 210 + 111}{12600 \times \left(\frac{3.0}{100}\right) + 7000 \times \left(\frac{5.0}{100}\right) + 7400 \left(\frac{1.7}{100}\right)} = \frac{636}{378 + 350 + 125.8} = \frac{636}{853.8} = 0.74 \quad 95\% \text{CI} = (0.649, 0.851)$ | | | | | | | |

† SSI, surgical site infection

* defined as the number of deep incision or organ space SSIs per 100 procedures

This example uses SSI rate data stratified by procedure and risk index category. Nevertheless, an SIR can be calculated using the same calculation process as for CLABSI data except using different risk group stratifiers for these example data. The SIR for this set of observed data is 0.74 which indicates there's a 26% reduction in the number of SSI events based on the baseline NHSN SSI rates as representing the standard population. Once again, these data can reflect the national picture at the 5-year mark and the SIR can serve as metric that summarizes the SSI experience into a single comparison.

There are clear advantages to reporting and comparing a single number for prevention assessment. However, since the SIR calculations are based on standard HAI rates among individual risk groups there is the ability to perform more detailed comparisons within any individual risk group should the need arise. Furthermore, the process for determining the best risk-adjustment for any HAI rate data is flexible and always based on more detailed risk factor analyses that provide ample scientific rigor supporting any SIR calculations. The extent to which any HAI rate data can be risk-adjusted is obviously related to the detail and volume of data that exist in a given measurement system.

In addition to the simplicity of the SIR concept and the advantages listed above, it's important to note another benefit of using an SIR comparison metric for HAI data. If there was need at any level of aggregation (national, regional, facility-wide, etc.) to combine the SIR values across mutually-exclusive data one could do so. The below table demonstrates how the example data from the previous two metric settings could be summarized.

| | Observed HAIs | | | Expected HAIs | | |
|--|---------------|-------------------|--------------------|-----------------------------------|-------------------|-----------------------|
| HAI Metric | #CLABSI | #SSI [†] | #Combined HAI | #CLABSI | #SSI [†] | #Combined HAI |
| CLABSI 1 | 228 | | | 287 | | |
| SSI 1 | | 636 | | | 853.8 | |
| Combined HAI | | | 228 + 636 = 864 | | | 287+853.8 = 1140.8 |
| $\text{SIR} = \frac{\text{observed}}{\text{expected}} = \frac{228 + 636}{287 + 853.8} = \frac{864}{1140.8} = 0.76$ | | | | $95\% \text{CI} = (0.673, 0.849)$ | | |

[†] SSI (surgical site infection)