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## Healthcare Associated Infections Plan Center for Health Care Quality Healthcare Associated Infections Program

### Introduction

Healthcare Associated Infections (HAI), infections that occur during or as a consequence of the provision of healthcare, are a major public health problem in California. In California's 430 acute care hospitals alone, HAIs account for an estimated 240,000 infections, 13,500 deaths, and \$3.1 billion dollars in excess health care costs annually. The California Department of Public Health (CDPH) mandates for an Infection Surveillance, Prevention and Control Program are in: Senate Bill 739, Speier, Chapter 526, Statutes of 2006; Senate Bill 1058, Alquist, Chapter 296, Statutes of 2008, and Senate Bill 158, Flores, Chapter 294, Statutes of 2008.

The legislative mandates for CDPH are, in brief, to:

- Implement an HAI surveillance and prevention program;
- Appoint an Advisory Committee to make recommendations for reporting and prevention of HAI, and reimburse the members for travel expenses;
- Educate health facility evaluator nurses in HAI so that during surveys they will evaluate hospitals' compliance with policies and procedures to prevent HAI;
- Revise regulations to be consistent with current standards for HAI prevention;
- Require general acute care hospitals to report to CDPH
  - Implementation of specified infection prevention process measures;
  - HAIs including methicillin resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococcal (VRE) blood stream infections, *Clostridium difficile* infections, central line associated blood stream infections, and infections following orthopedic, cardiac, gastrointestinal surgery
- Post on the department's website at specified times information reported to CDPH, along with current infection prevention and control information;

The CDPH Healthcare Associated Infections Advisory Committee was initiated in August 2007. It currently consists of 22 members representing infection prevention and epidemiology from a range of hospital sizes and types representative of the 430 California acute care hospitals, representatives of the public, hospital administration, health plans and health payors. It has provided the program with a number of recommendations, including many that are incorporated into this plan. All California acute care hospitals are required to participate in the Centers for Disease Control and Prevention National Healthcare Safety Network (NHSN); over 90% are currently participating. As a result of the fiscal crisis in California, staffing for the CDPH HAI

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Program was delayed but is in progress and is expected to be completed by the end of January 2010, at which point a review and analysis of data submitted as the result of legislative mandates will begin. On October 24, in collaboration with the Department of Healthcare Services, Department of Managed Healthcare, and the California Hospital Association, a select group of leaders in infection control, hospital administration, and healthcare organizations met by invitation to review existing collaborative efforts to reduce healthcare-associated infections in California and discuss a possible coordinated, statewide collaborative effort. Additional meetings are planned for early 2010.

The California Department of Public Health (CDPH) Program has been awarded \$2.4 million by U.S. Department of Health and Human Services, Centers for Disease Control and Prevention (CDC), American Recovery and Reinvestment Act, Epidemiology and Laboratory Capacity for Infectious Diseases (ELC), Healthcare-Associated Infections - Building and Sustaining State Programs to Prevent Healthcare-associated Infections grant. Using these funds, commencing January 2010, the Program will conduct the following activities:

Activity A: The Program will use the existing multidisciplinary advisory group to provide input into the development and implementation of the state HAI Prevention Plan. Initially, prevention plan activities will include central-line insertion practices (CLIP), central-line associated bloodstream infections (CLABSI), and *Clostridium difficile* infections.

Activity B: The state will assign Field Infection Preventionist staff regionally who will: (1) assist with reporting through NHSN, (2) provide consultation in the surveillance of required measures; (3) conduct validation of NHSN data and train hospital staff to perform self-validation; (4) evaluate adequacy of facility infection prevention programs including participation in regional collaborative initiatives, and submit reports of hospital assessments to the state HAI Program. California plans to initially target facilities struggling with the NHSN reporting system (these are typically smaller, rural, more isolated hospitals or hospitals with inadequate infection prevention and surveillance resources). Electronic reporting directly to the HAI Program will be implemented as feasible.

Activity C: The California Hospital Association, Health Services Advisory Group (current QIO), and others are very active initiating collaboratives in California. Funds will be used to coordinate current ongoing efforts in the state to ensure that all hospitals have access to peer support and to share best practices. Field staff will be responsible for assessing the levels of participation in collaboratives and to facilitate facility participation as needed. The development of a regional collaborative initiative to address HAI in small rural hospitals, which tend to be left out of existing collaborative efforts, will be investigated.

Plan approved by:

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**Plan**

**1. CDPH infrastructure planning for HAI surveillance, prevention and control**

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Establish statewide HAI prevention leadership through the formation of multidisciplinary group or state HAI advisory council i. Collaborate with local and regional partners	Ongoing
			<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<i>Other activities or descriptions (not required):</i> iii. Establish effective structure and operations for HAI Advisory Committee	Ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Establish an HAI surveillance prevention and control program i. Designate a State HAI Prevention Coordinator	September 2009
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ii. Develop dedicated, trained HAI staff to oversee the four major HAI activity areas (Integration, Collaboration, and Capacity Building; Reporting, Detection, Response and Surveillance; Prevention; Evaluation, Oversight and Communication)	January 2010
			<i>Other activities or descriptions (not required):</i>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Integrate laboratory activities with HAI surveillance, prevention and control efforts. i. Improve laboratory capacity to confirm emerging resistance in HAI pathogens and perform typing where appropriate		

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Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
			<i>Other activities or descriptions (not required):</i> ii. Establish statewide antibiogram using data from hospital clinical microbiology laboratories iii. Evaluate hospital clinical microbiology laboratory capacity to electronically report laboratory data	January 2009  July 2010 and ongoing
Level II	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Improve coordination among government agencies or organizations that share responsibility for assuring or overseeing HAI surveillance, prevention and control (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)	Ongoing
			<i>Other activities or descriptions (not required):</i> i. Implement Memo of Understanding between Center for Health Care Quality and Center for Infectious Diseases regarding coordination of HAI surveillance, prevention and control activities	January 2010
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Facilitate use of standards-based formats (e.g., Clinical Document Architecture, electronic messages) by healthcare facilities for purposes of electronic reporting of HAI data.	January 2010
			<i>Other activities or descriptions (not required):</i> i. Assist hospitals with exporting HAI data from third-party vendor software into NHSN ii. Assist hospitals to access data entered into NHSN to formulate their own internal reporting formats.	July 2010 and ongoing

**2 CDPH planning for surveillance, detection, reporting, and response for HAIs**

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Improve HAI outbreak detection and investigation i. Work with partners including CSTE, CDC, legislature, and providers across the healthcare continuum to improve outbreak reporting to CDPH	Ongoing
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ii. Establish protocols and provide training for health department staff to investigate outbreaks, clusters or unusual cases of HAIs.	July 2010
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	iii. Develop mechanisms to protect facility/provider/patient identity when investigating incidents and potential outbreaks during the initial evaluation phase where possible to promote reporting of outbreaks	Ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	iv. Improve overall use of surveillance data to identify and prevent HAI outbreaks or transmission in HC settings (e.g., hepatitis B, hepatitis C, multi-drug resistant organisms (MDRO), and other reportable HAIs)	Ongoing
			<i>Other activities or descriptions (not required):</i> i. Work with Advisory Committee to develop ▪ Standardized protocols to detect post-discharge SSI ▪ Recommendations for infection prevention staffing.	Jan 2011
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Enhance laboratory capacity for state and local detection and response to new and emerging HAI issues.	Ongoing
			<i>Other activities or descriptions (not required):</i> i. Coordinate activities with California Emerging Infections Program to enhance laboratory capacity for local detection and response to new and emerging HAI issues in the EIP catchment area.	Ongoing

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Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level II	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Improve communication of HAI outbreaks and infection control breaches	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	i. Develop standard reporting criteria including, number, size and type of HAI outbreak for CDPH and CDC	Ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ii. Establish mechanisms or protocols for exchanging information about outbreaks or breaches among state and local governmental partners (e.g., State Survey agencies, Communicable Disease Control, state licensing boards)	Ongoing
			<i>Other activities or descriptions (not required):</i> iii. Work with partners including local health departments and providers across the healthcare continuum to improve reporting of breaches in infection control to CDPH	July 2010
			iv. Establish protocols and provide training for health department staff to investigate breaches in infection control	July 2010
	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input 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"/> <input type="checkbox"/>	4. Identify at least 2 priority prevention targets for surveillance in support of the HHS HAI Action Plan 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) Bloodstream Infections (BSI) v. Surgical Site Infections (SSI) vi. Ventilator-associated Pneumonia (VAP)	Ongoing Ongoing Ongoing July 1010
			<i>Other activities or descriptions (not required):</i>	
<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	5. Adopt national standards for data and technology to track HAIs (e.g., NHSN). i. Develop metrics to measure progress towards national goals (align with targeted state goals) ii. Establish baseline measurements for prevention targets	July 2010 July 2010	

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Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
			<i>Other activities or descriptions (not required):</i> iii. Explore alternative methods for collecting denominator data iv. Explore alternative methods for risk adjusting data v. Explore alternative standards for very small hospitals	July 2010
	☒	☐	6. Develop state surveillance training competencies i. Conduct local training for appropriate use of NHSN including facility and group enrollment, data collection, management, and analysis	Ongoing
			<i>Other activities or descriptions (not required):</i> ii. Provide onsite assistance to hospitals for use of NHSN and methods of surveillance of mandated HAIs through use of ARRA funding, targeting non-reporting hospitals	January 2010
	☐	☒	7. Develop tailored reports of data analyses for state or region prepared by state personnel	July 2010
			<i>Other activities or descriptions (not required):</i> i. Analyze and report as appropriate data by hospital size, characteristics, and geographic location	January 2011
<b>Level III</b>	☐  ☐ ☐ ☐  ☐  ☐ ☐	☒  ☒ ☒ ☒  ☒  ☒ ☒	8. Validate data entered into HAI surveillance (e.g., through healthcare records review, parallel database comparison) to measure accuracy and reliability of HAI data collection i. Develop a validation plan ii. Pilot test validation methods in a sample of healthcare facilities iii. Modify validation plan and methods in accordance with findings from pilot project iv. Implement validation plan and methods in all healthcare facilities participating in HAI surveillance v. Analyze and report validation findings vi. Use validation findings to provide operational guidance for healthcare facilities that targets any data shortcomings detected	January 2010  January 2010 February 2010 July 2010  January 2011  July 2011 January 2012

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Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
			<i>Other activities or descriptions (not required):</i> vii. Train hospital staff to conduct self-validation of data entered into NHSN viii. Analyze validation data from program compared to self-validation ix. Recommend ongoing self-validation methods	January 2011  July 2011  January 2012
	☒	☐	9. Develop preparedness plans for improved response to HAI 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	Ongoing
			<i>Other activities or descriptions (not required)</i>	
	☒	☐	10. Collaborate with professional licensing organizations to identify and investigate complaints related to provider infection control practice in non-hospital settings, and to set standards for continuing education and training	Ongoing
			<i>Other activities or descriptions (not required):</i> i. Collaborate with CDPH Licensing and Certification Program to identify and investigate complaints related to provider infection control practice in ambulatory surgical centers, and to set standards for continuing education and training ii. Collaborate with California Medical Board to identify and investigate complaints related to provider infection control practice in physician offices, and to set standards for continuing education and training	Ongoing  January 2011

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	11. Adopt integration and interoperability standards for HAI information systems and data sources	Ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>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 the spectrum of inpatient and outpatient healthcare settings</li> <li>ii. Promote definitional alignment and data element standardization needed to link HAI data across the nation.</li> </ul>	Ongoing
			<i>Other activities or descriptions (not required):</i>	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	12. Enhance electronic reporting and information technology for healthcare facilities to reduce reporting burden and increase timeliness, efficiency, comprehensiveness, and reliability of the data	January 2011
			<i>Other activities or descriptions (not required):</i>	January 2011 January 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	13. Make available risk-adjusted HAI data that enables state agencies to make comparisons between hospitals.	January 2011
			<i>Other activities or descriptions (not required):</i>	
	<input type="checkbox"/>	<input type="checkbox"/>	14. Enhance surveillance and detection of HAIs in nonhospital settings	

**3. CDPH planning for HAI prevention activities**

<b>Planning Level</b>	<b>Check Items Underway</b>	<b>Check Items Planned</b>	<b>Items Planned for Implementation (or currently underway)</b>	<b>Target Dates for Implementation</b>
<b>Level I</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Implement HICPAC recommendations. i. Develop strategies for implementation of HICPAC recommendations for influenza vaccination, central line insertion practices, and surgical antibiotic prophylaxis.	Ongoing
			<i>Other activities or descriptions (not required):</i> ii. Develop strategy for implementation of antibiotic stewardship programs	July 2010
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Establish prevention working group under the state HAI Advisory Committee to coordinate state HAI collaboratives i. Assemble expertise to consult, advise, and coach inpatient healthcare facilities involved in HAI prevention collaboratives	Ongoing
			<i>Other activities or descriptions (not required):</i>	
	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	3. Establish HAI collaboratives with at least 10 hospitals (i.e. this may require a multi-state or regional collaborative in low population density regions) 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 of a clear and standardized outcome data to track progress	Ongoing Ongoing Ongoing

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			<p><i>Other activities or descriptions:</i></p> <ul style="list-style-type: none"> <li>iv. Use information on participation in existing collaboratives to identify hospitals not participating in an collaborative</li> <li>v. Develop strategy to extend participation in collaboratives to non-participating hospitals</li> <li>vi. Develop appropriate collaboratives for small rural hospitals (in conjunction with other states through CSTE)</li> </ul>	<p>July 2010</p> <p>January 2011</p> <p>July 2011</p>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>4. Develop state HAI prevention training competencies</p> <ul style="list-style-type: none"> <li>i. Consider establishing requirements for education and training of healthcare professionals in HAI prevention</li> </ul>	Ongoing
			<p><i>Other activities or descriptions (not required):</i></p> <ul style="list-style-type: none"> <li>ii. Establish training requirements for hospital epidemiologists and infection control committee chairs</li> <li>iii. Provide support of annual training program for infection preventionists</li> <li>iv. Establish program with state HAI collaboratives to provide ongoing training for infection preventionists</li> </ul>	<p>Ongoing</p> <p>April 2010</p> <p>July 2010</p>
<b>Level II</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<p>5. Implement strategies for compliance to promote adherence to HICPAC recommendations</p> <ul style="list-style-type: none"> <li>i. Develop regulatory standards for healthcare infection control and prevention or</li> <li>ii. Work with healthcare partners and HAI Advisory Committee to establish best practices to ensure adherence</li> </ul>	Ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> <li>iii. Coordinate/liaise with CDPH Licensing and Certification Program and professional licensing organizations to prevent HAIs</li> </ul>	Ongoing

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	<input checked="" type="checkbox"/>	<input type="checkbox"/>	iv. Improve regulatory oversight of hospitals, enhancing surveyor training and tools, and adding sources and uses of infection control data	Ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	v. Consider expanding regulation and oversight activities to currently unregulated settings where healthcare is delivered or work with healthcare partners to establish best practices to ensure adherence	Ongoing
			<i>Other activities or descriptions (not required):</i> vi. Investigate outbreaks of HAI in currently unregulated settings and use results to disseminate information on best practices to ensure adherence	Ongoing
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	6. Enhance prevention infrastructure by increasing joint collaboratives with at least 10 hospitals (i.e. this may require a multi-state or regional collaborative in low population density regions)	July 2010
			<i>Other activities or descriptions (not required):</i> i. Expand collaboratives for small rural hospitals (in conjunction with other states through CSTE and APIC)	July 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Establish collaborative to prevent HAIs in nonhospital settings (e.g., long term care, dialysis)	July 2010
			<i>Other activities or descriptions (not required):</i> i. Participate in CDC collaborative to prevent bloodstream infections in dialysis patients ii. Develop collaborative with California Association of Health Facilities (CAHF) to prevent HAIs in skilled nursing facilities iii. Explore development of collaborative to prevent HAIs in long-term acute care hospitals iv. Collaborate with CDPH Division of Communicable Disease Control, Emergency Response Branch to ensure inclusion of infection control activities in operational readiness plans	July 2010 January 2011

**4. CDPH HAI Evaluation and Communication Planning**

<b>Planning Level</b>	<b>Check Items Underway</b>	<b>Check Items Planned</b>	<b>Items Planned for Implementation (or currently underway)</b>	<b>Target Dates for Implementation</b>
<b>Level I</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Conduct needs assessment and/or evaluation of the state HAI program to learn how to increase impact i. Establish evaluation activity to measure progress ii. Establish systems for refining approaches based on data	July 2010 January 2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>Other activities or descriptions (not required):</i>	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Develop and implement a communication plan about the state’s HAI program and progress to meet public and private stakeholders needs i. Disseminate state priorities for HAI prevention to healthcare organizations, professional provider organizations, governmental agencies, non-profit public health organizations, and the public	July 2010
			<i>Other activities or descriptions (not required):</i>	
<b>Level II</b>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Provide consumers access to useful healthcare quality measures	January 2011
			<i>Other activities or descriptions (not required):</i>	
<b>Level III</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	4. Identify priorities and provide input to partners to help guide patient safety initiatives and research aimed at reducing HAIs	Ongoing
			<i>Other activities or descriptions (not required):</i>	