

Healthcare Acquired Infection Prevention Plan

Oregon Patient Safety Commission Oregon Public Health Division Oregon Office of Health Policy and Research

Introduction

Healthcare acquired infections (HAIs) are infections that patients contract while receiving treatment for medical and surgical conditions. The U.S. Centers for Disease Control and Prevention (CDC) estimates that HAIs contracted in U.S. hospitals account for approximately two million infections, 99,000 deaths, and an estimated \$4.5 billion in excess costs annually.¹ Even though rates may be dropping, it has also been estimated that 5-15% of all hospitalized patients experience an HAI and that these cases are widely underreported.²³⁴

In June 2007, the Oregon legislature passed House Bill 2524 to create a mandatory HAI Reporting Program in Oregon. In brief, the legislative mandates for the Oregon Office for Health Policy and Research (OHPR) are as follows:

- Implement an HAI surveillance and prevention program;
- Maintain a multi-disciplinary HAI Advisory Committee to advise the OHPR regarding the HAI Reporting Program;
- Require healthcare facilities to report on the following, but not limited to, list of measurements:
 - surgical site infections,
 - central line related bloodstream infections,
 - urinary tract infections, and
 - healthcare facility process measures designed to ensure quality and to reduce health care acquired infections;
- Prepare periodic reports that summarize the incidence of HAIs and compare rates among facilities and make these reports available to the public; and
- Regularly evaluate the quality and accuracy of the data collected for the HAI Reporting Program.

1 Kleven, RM, Edwards JR, Richards CL, Horan T, Gaynes R, Pollock D, Cardo D. "Estimating healthcare-associated infections in U.S. hospitals," 2002. *Public Health Rep* 2007;122:160-166.

2 Weinstein RA, Siegel JD, and Brennan PJ. "Infection Control Report Cards – Securing Patient Safety." *NEJM*. 2005: 353 (3), 225-227.

3 Smith RL, Bohl JK, McElearney ST, Friel CM, Barclay MM, Sawyer RG, and Foley EF. "Wound infection after elective colorectal resection." *Ann Surg*. 2004: 239 (5), 599-605.

4 Eggimann P and Pittet D. "Infection control in the ICU." *Chest*. 2001: 120 (6), 2059-2093.

The Oregon HAI Advisory Committee was established in October 2007. When the committee began meeting in late 2007, it was determined that 8 of 57 Oregon hospitals were using a system for collecting data on HAIs that would be comparable with public reporting. However, during its first year of deliberation, the committee observed that the CDC's National Health and Safety Network (NHSN) database was emerging to be the nationally preferred network for hospital data. Following selection of the NHSN database, the committee partnered with Association for Professionals in Infection Control (APIC) and the Oregon Association of Hospitals and Health Systems (OAHHS) to provide training for all Oregon hospitals to use NHSN; this training included creating training materials, providing CDC Webinars, and offering on-site instruction. As of December 2009, 54 of the 57 Oregon hospitals are reporting data on HAIs through NHSN. Three hospitals have received waivers for data collection, as these facilities do not perform the procedures represented by the current data set or do not have an intensive care unit.

The Oregon Public Health Division (OPHD) has been awarded a grant of \$724,288 by the U.S. Department of Health and Human Services (DHHS), Centers for Disease Control and Prevention (CDC), American Recovery and Reinvestment Act, Epidemiology and Laboratory Capacity for Infectious Diseases (ELC), Healthcare-associated Infections program. Using these funds, commencing in September 2009, the HAI Reporting Program will conduct the following activities:

Activity A: The OHPR will develop a state HAI prevention plan and provide oversight to ensure that it is implemented. The plan will express the vision of the many stakeholders as to how and why Oregon will meet its goals and objectives and will require the coordination with public and private organizations to achieve a unified set of policies to prevent HAIs.

Activity B: The OPHD will use NHSN data to estimate the burden of HAIs in Oregon, provide data to measure the impact of prevention programs occurring in the state, and it will plan and conduct a validation of the NHSN data.

Activity C: The Oregon Patient Safety Commission (OPSC) will develop a multi-hospital collaborative to introduce and champion evidence-based HAI prevention strategies. The overall goal for this project is to reduce HAIs in Oregon hospitals by at least 10% below benchmark each year for the next two years.

Clarification on “Underway” and “Planned” Activities

This planning document presents activities in two groups: items that are underway and items that are planned. For the purposes of this document, an item that is designated as “underway” means that funds are currently allocated for it. Therefore, it includes activities in which the state is currently engaged and includes activities that are scheduled to begin using currently available resources. Planned activities represent future directions the state would like to move in to meet currently unmet needs, contingent on available resources and competing priorities.

Key Abbreviations

APIC - Association for Professionals in Infection Control and Epidemiology

CDC - Centers for Disease Control and Prevention

CSTE - Council of State and Territorial Epidemiologists

DHHS - Department of Health and Human Services (U.S.)

ELC - Epidemiology and Laboratory Capacity for Infectious Diseases

HAI - Healthcare Acquired Infection

HICPAC - Healthcare Infection Control Practices Advisory Committee

HL7 - Health Level 7. HL7 is an all-volunteer, non-profit organization involved in the development of international healthcare standards.

HL7 and its members provide a framework (and related standards) for the exchange, integration, sharing, and retrieval of electronic health information.

IHI - Institute for Healthcare Improvement

MDRO - Multidrug-Resistant Organism

MRSA - Methicillin-Resistant *Staphylococcus aureus*

NHSN - National Healthcare Safety Network

OAHHS - Oregon Association of Hospitals and Health Systems

OHPR - Oregon Office for Health Policy and Research

OPHD - The Oregon Public Health Division

OPHD ACDP - The Oregon Public Health Division, Acute and Communicable Disease Prevention

OPSC - Oregon Patient Safety Commission

PLAN

Section 1. Oregon 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 (e.g., OAHHS, Acumentra, APIC, Oregon IHI network) ii. Identify specific HAI prevention targets consistent with DHHS priorities	Oct. 2007, then ongoing Jul. 2008, then ongoing
	<input checked="" type="checkbox"/>	<input type="checkbox"/>		
			<i>Other activities or descriptions (not required):</i>	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2. Establish an HAI surveillance prevention and control program i. Designate a State HAI Prevention Coordinator ii. Develop dedicated, trained HAI staff with at least one FTE to oversee the four major HAI activity areas (Integration, Collaboration, and Capacity Building; Reporting, Detection, Response and Surveillance; Prevention; and Evaluation, Oversight and Communication)	Nov. 2009
	<input checked="" type="checkbox"/>	<input type="checkbox"/>		Nov. 2009- Apr. 2010
		<i>Other activities or descriptions (not required):</i>		
<input type="checkbox"/>	<input type="checkbox"/>	3. Integrate laboratory activities with HAI surveillance, prevention and control efforts. Improve laboratory capacity to confirm emerging resistance in HAI pathogens and perform typing where appropriate (e.g., outbreak investigation support, health-level 7 [HL7] messaging of laboratory results)		
			<i>Other activities or descriptions (not required):</i>	

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"/>	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, The Oregon Public Health Division, Acute and Communicable Disease Prevention [OPHD ACDP], state licensing boards)	Jul. 2009, then ongoing
			<i>Other activities or descriptions (not required):</i> i. Improve coordination between OHPR, OPHD, and OPSC in their HAI reduction efforts by developing statewide goals and objectives.	Jan. 2010, then ongoing
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Facilitate use of standards-based formats (e.g., Clinical Document Architecture, electronic messages) by healthcare facilities for purposes of electronic reporting of HAI data. Providing technical assistance or other incentives for implementations of standards-based reporting can help develop capacity for HAI surveillance and other types of public health surveillance, such as for conditions deemed reportable to state and local 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.	
		<i>Other activities or descriptions (not required):</i> i. Implement electronic transfer of laboratory data into NHSN at 5 to 6 institutions in the state.		Consider in 2012
Please also describe any additional activities, not listed above, that your state plans to undertake. Please include target dates for any new activities.				

Section 2. Oregon Planning for Surveillance, Detection, Reporting, and Response for HAIs

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input type="checkbox"/>	<input checked="" type="checkbox"/>	1. Improve HAI outbreak detection and investigation <ul style="list-style-type: none"> i. Work with partners including Council of State and Territorial Epidemiologists (CSTE), CDC, legislature, and providers across the healthcare continuum to improve outbreak reporting to OPHD ii. Establish protocols and provide training for health department staff to investigate outbreaks, clusters or unusual cases of HAIs. 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 iv. Improve overall use of surveillance data to identify and prevent HAI outbreaks or transmission in healthcare settings (e.g., hepatitis B, hepatitis C, multi-drug resistant organisms [MDRO], and other reportable HAIs) 	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>		
			<i>Other activities or descriptions (not required):</i>	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	2. Enhance laboratory capacity for state and local detection and response to new and emerging HAI issues.	
			<i>Other activities or descriptions (not required):</i>	
Level II	<input type="checkbox"/>	<input checked="" type="checkbox"/>	3. Improve communication of HAI outbreaks and infection control breaches <ul style="list-style-type: none"> i. Develop standard reporting criteria including, number, size and type of HAI outbreak for OPHD and CDC 	

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ii. Establish mechanisms or protocols for exchanging information about outbreaks or breaches among state and local governmental partners (e.g., State Survey agencies, OPHD ACDP, state licensing boards)	
			<i>Other activities or descriptions (not required):</i>	
	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	4. Identify at least 2 priority prevention targets for surveillance in support of the DHHS HAI Action Plan <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) 	Jul. 2008 See below. Jul. 2008, then ongoing
			<i>Other activities or descriptions (not required):</i> *Oregon has conducted surveillance for invasive cases of MRSA in 3 counties in the metropolitan Portland area since 2004 as part of the Active Bacterial Core surveillance of the Oregon Emerging Infections Program.	2004
	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>	5. Adopt national standards for data and technology to track HAIs (e.g., NHSN). <ul style="list-style-type: none"> i. Develop metrics to measure progress towards national goals (align with targeted state goals) ii. Establish baseline measurements for prevention targets 	Apr. 2010, then ongoing Apr. 2010, then review annually
			<i>Other activities or descriptions (not required):</i>	

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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	Sep. 2008, then ongoing
			<i>Other activities or descriptions (not required):</i> ii. Conduct annual education update/refresher training on NHSN in collaboration with Oregon APIC and OAHHS	Sep 2010, then annually
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	7. Develop tailored reports of data analyses for state or region prepared by state personnel	Apr. 2010, then ongoing
			<i>Other activities or descriptions (not required):</i> i. Develop web-based interactive reporting for HAI data ii. Include section in reports regarding consumer use of HAI data to select healthcare provider	Apr. 2011 Apr. 2010, then ongoing
Level III	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	i. Develop a validation plan	Dec. 2009 – Jan. 2010
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ii. Pilot test validation methods in a sample of healthcare facilities	Feb. 2010
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	iii. Modify validation plan and methods in accordance with findings from pilot project	Apr. 2010
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	iv. Implement validation plan and methods in all healthcare facilities participating in HAI surveillance	May 2010 - Sep. 2011
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	v. Analyze and report validation findings	Oct. - Nov. 2011
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	vi. Use validation findings to provide operational guidance for healthcare facilities that targets any data shortcomings detected	Dec. 2011
			<i>Other activities or descriptions (not required):</i>	

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	9. Develop preparedness plans for improved response to HAI <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 	
			<i>Other activities or descriptions (not required)</i>	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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	
			<i>Other activities or descriptions (not required):</i>	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	11. Adopt integration and interoperability standards for HAI information systems and data sources <ul style="list-style-type: none"> 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 	
	<input type="checkbox"/>	<input type="checkbox"/>	<ul style="list-style-type: none"> ii. Promote definitional alignment and data element standardization needed to link HAI data across the nation. 	
			<i>Other activities or descriptions (not required):</i>	
	<input checked="" type="checkbox"/>	<input 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 <ul style="list-style-type: none"> i. Report HAI data to the public 	Apr. 2010, then ongoing

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. See Section 1, Activity 5, part i.	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	13. Make available risk-adjusted HAI data that enables state agencies to make comparisons between hospitals.	Program underway; applies to limited measurements. We plan to expand in the future.
			<i>Other activities or descriptions (not required):</i>	
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	14. Enhance surveillance and detection of HAIs in nonhospital settings	
			<i>Other activities or descriptions (not required):</i> i. Evaluate adding measurements for long-term care facilities ii. Evaluate adding measurements for ambulatory surgical centers and outpatient renal dialysis centers	2010-2011 2013
Please also describe any additional activities, not listed above, that your state plans to undertake. Please include target dates for any new activities.				

Section 3. Oregon Planning for HAI Prevention Activities

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
Level I	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1. Implement Healthcare Infection Control Practices Advisory Committee (HICPAC) recommendations. i. Develop strategies for implementation of HICPAC recommendations for at least 2 prevention targets specified by the state multidisciplinary group.	July 2010
	<i>Other activities or descriptions (not required):</i>			
	<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	Recruitment underway. Group to be convened Jan/Feb 2010 Ongoing
	<i>Other activities or descriptions (not required):</i>			
	<input checked="" type="checkbox"/> <input checked="" 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	Apr. 2010 Feb.-Apr. 2010 Feb.-Apr. 2010, then ongoing

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	iii. Establish and adhere to feedback of clear and standardized outcome data to track progress	Jun.-Jul. 2010, then ongoing
			<i>Other activities or descriptions:</i> iv. Develop strategy to extend learning to non-participating hospitals. v. OPHD will provide data summaries on outcomes needed by prevention collaborative and serve as a consultant to support the selection of outcomes and metrics to track compliance	Fall 2010, then ongoing Feb. 2010, then ongoing
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	4. Develop state HAI prevention training competencies 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	
			<i>Other activities or descriptions (not required):</i> ii. See Section 2, Activity 6, part ii.	
Level II	<input type="checkbox"/>	<input checked="" type="checkbox"/>	5. Implement strategies for compliance to promote adherence to HICPAC recommendations 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	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	ii. Coordinate/liaise with regulation and oversight activities such as inpatient or outpatient facility licensing/accrediting bodies and professional licensing organizations to prevent HAIs	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	iii. Improve regulatory oversight of hospitals, enhancing surveyor training and tools, and adding sources and uses of infection control data	

Planning Level	Check Items Underway	Check Items Planned	Items Planned for Implementation (or currently underway)	Target Dates for Implementation
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	iv. 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	
			<i>Other activities or descriptions (not required):</i> v. Sustain HAI improvement efforts over time by developing funding model and sustainability plan.	2010-2011
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	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)	Serious consideration in 2011
			<i>Other activities or descriptions (not required):</i>	
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	7. Establish collaborative to prevent HAIs in nonhospital settings (e.g., long term care, dialysis)	Serious consideration in 2011
			<i>Other activities or descriptions (not required):</i>	
Please also describe any additional activities, not listed above, that your state plans to undertake. Please include target dates for any new activities.				

Section 4. Oregon HAI Evaluation and Communication Planning

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. Conduct needs assessment and/or evaluation of the state HAI program to learn how to increase impact	Jun. 2010
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	i. Establish evaluation activity to measure progress ii. Establish systems for refining approaches based on data	Aug. 2010
			<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 progress to meet public and private stakeholders needs	Jun. 2010
			i. Disseminate state priorities for HAI prevention to healthcare organizations, professional provider organizations, governmental agencies, non-profit public health organizations, and the public	
			<i>Other activities or descriptions (not required):</i>	
Level II	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3. Provide consumers access to useful healthcare quality measures	Apr. 2010, then ongoing
			<i>Other activities or descriptions (not required):</i>	
Level III	<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	Aug. 2010
			<i>Other activities or descriptions (not required):</i>	
Please also describe any additional activities, not listed above, that your state plans to undertake. Please include target dates for any new activities.				