

# Health Care Acquired Infections Advisory Committee

## Draft Revised Charter

<b>Project Name:</b>	Health Care Acquire Infections Reporting Program		
<b>Project Sponsor:</b>	Jeanene Smith, MD, MPH	<b>Estimated Start Date:</b>	1/1/2011
<b>Project Owner:</b>	Elyssa Tran, MPA	<b>Duration:</b>	12/31/2013

### Introduction and History

#### What it is?

- Creates a health care acquired infections reporting program in Oregon and the Health Care Acquired Infections Advisory Committee to advise OHPR in the development of the program.

#### Why are we doing it?

The U.S. Centers for Disease Control and Prevention (CDC) estimates that healthcare associated infections are one of the top ten leading causes of death in the United States.<sup>1</sup> In Oregon:

- The average estimated cost per stay at Oregon hospitals is approximately \$32,000 higher for a patient with a healthcare associated infection compared to a patient without a healthcare associated infection.<sup>2</sup>
- The estimated excess Medicaid costs in Oregon for healthcare associated infections exceeded \$2.4 million in 2005.<sup>2</sup>
- The estimated excess costs in Oregon for all payers for healthcare associated infections exceeded \$15 million in 2005.<sup>2</sup>
- The excess costs are not explained by differences in age, gender, co morbidities, or severity of illness.<sup>2</sup>

#### Wat have we accomplished?

OHPR and the Committee have made significant progress in the development of the HAI reporting program, including:

- Establishing the use of National Healthcare Safety Network (NHSN) as the standard for definitions for healthcare acquired infections and for state public reporting.
- Publication of the first report on HAI rates at Oregon hospitals for the calendar year 2009 which included central-line associated bloodstream infections (CLABSIs) in adult medical/surgical ICUs, coronary artery bypass graft surgery, knee replacement, and surgical care improvement process of care measures.
- Selection of additional surgical site infections for hospitals to report as of January 2011. The additional measures include colon surgery, hip replacement, abdominal hysterectomies, and laminectomies.

<sup>1</sup> <http://www.cdc.gov/ncidod/dhqp/hai.html>

<sup>2</sup> <http://www.oregon.gov/DAS/OHPPR/RSCH/docs/HAI111406.pdf>

### Objectives:

The advisory committee shall advise OHPR, based on research, information, and options presented, regarding:

- What health care acquired infection measures that health care facilities must report, which may include but are not limited to:
  - Surgical site infections;
  - Central line related bloodstream infections;
  - Urinary tract infections; and
  - Health care facility process measures designed to ensure quality and to reduce health care acquired infections.
- Methods for evaluating and quantifying health care acquired infection measures that align with other data collection and public reporting methodologies of health care facilities, and that support participation in other quality interventions.
- Different reportable health care acquired infection measures for differently situated health care facilities as appropriate.
- Methods to ensure that infections present upon admission to the health care facility are excluded from the rates of health care acquired infection disclosed to the public.
- A process for evaluating the health care acquired infection measures reported and for modifying the reporting requirements over time as appropriate;
- A timetable to phase in NHSN reporting and public disclosure of health care acquired infection measures.
- Procedures to protect the confidentiality of patients, health care professionals and health care facility employees.
- A reporting format that is understandable by consumers..

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### Scope of reporting program:

#### Who

1. All health care facilities defined in ORS 442.015 (means a hospital, a long term care facility, an ambulatory surgical center, a freestanding birthing center or an outpatient renal dialysis facility.)

#### When

1. First facilities start reporting in no later than January 1, 2009
2. Timetable of introducing type of facility into reporting to be determined by the committee.

#### How report

1. Updated release of data on biannual basis in 2010 and then quarterly basis in 2012 and beyond.
2. Annual report no later than April 31 of year.

#### Progress

1. Hospitals are submitting data on HAI infections through NHSN.
2. Nursing homes are submitting urinary tract data infection via CMS; OHPR continues to work with the CDC to identify means for nursing homes to publicly report additional HAI data.
3. Hospitals and long-term care facilities completed first year of influenza rate
4. OHPR is working with an Ambulatory Surgical Center Subcommittee to develop a survey of evidence-based best elements of patient safety performance in ASCs.

### Completion Criteria:

1. Public meeting held about administrative rule.
2. Administrative rules entered into the state registry.
3. Annual Report # 1 made public no later than April 31 of year
4. Review and revise administrative rules annually
5. Updated, publicly accessible data available 2 time per year in 2010.
6. Annual Reports #2, and onward due no later than 4/31/XX.
7. Updated, publicly accessible data available 4 times per year in 2011.

### Proposed Key Milestones / Deliverables:

Milestone / Deliverable	Comp. Date	Completion Criteria
Administrative Rules submitted for public comment	May 2008	Public meeting held
Administrative Rules adopted	July 1, 2008	Submitted to the AG office for registry
HCF begin to report HCAI	January 1, 2009	
Biannual public reporting begins	January 1, 2010	Report release by approved method
First annual HAI report	May 31, 2010	Report release by approved method
Review and revisions of administrative rules	July 1, 2010	
Compilation and analysis of influenza survey data	September 1, 2010	
Compilation and analysis of ASC survey	December 31, 2010	
Update of HAI report	December 31, 2010	
Quarterly public reporting begins	January 1, 2011	Report release by approved method
Committee advises on public reporting for hospital NICU reporting	January 2011	January 2011 meeting minutes include advisement on Hospital NICU reporting
Committee provides recommendations on charter	January 2011	Charter for 2011-2013 included in meeting minutes
Committee advises on MDRO and process measure reporting for hospitals	April 2011	April 2011 meeting minutes include advisement on MDRO and process measure reporting
Second annual HAI report	April 30, 2011	Report release by approved method
Potential revisions to administrative rules for hospital NICU, process measures, and MDRO reporting	June 2011	OHPR will complete administrative rule process; if revision follows federal requirements, reporting start date can be retroactive to January 2011
Committee advises on public reporting for ambulatory surgical centers and dialysis centers	July 2011	July 2011 meeting minutes include advisement on ambulatory surgical center and dialysis center reporting
Compilation and analysis of influenza survey data	September 1, 2011	

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Committee evaluates current reporting for long-term care facilities and advises on potential program revisions.	October 2011	October 2011 meeting minutes include advisement on nursing home reporting
Begin reporting for expanded hospital HAI measures	January 2012	
Evaluation of HAI Reporting Program and Reports	January 2012	Meeting materials include reporting program evaluation
Begin reporting for ambulatory surgical centers and dialysis centers for any potential revised nursing home measures	January 2013	
Committee advises on reporting for free-standing birthing centers	April 2013	July 2013 meeting minutes include advisement on free-standing birthing centers reporting
Third annual HAI report (to include hospitals, ambulatory surgical centers, dialysis centers, and nursing homes)	April 30, 2013	Report release by approved method
Compilation and analysis of influenza survey data	September 1, 2013	
Begin reporting for free standing birthing centers	January 2014	

Project Team Members	Team Role / Responsibilities
Sean Kolmer, MPH	OHPR Deputy Administrator (Member for the advisory committee)
Elyssa Tran, MPA	OHPR Research & Data (Lead staff)
Jeanne Negley, MBA	OHPR Manager (State HAI Coordinator)
James Oliver, MPH	OHPR Research Analyst (Lead data analyst)

Risks	Level (H,M,L)	Mitigation
Federal reform re inpatient prospective payment system rule and CMS value-based purchasing program for Medicare reimbursement may be duplicative of state program.	M	Unclear what impact this will have on the reporting of HAI, although the state intends to continue with its reporting program. The CMS program has a slower reporting schedule and implementation plan than the state program.

### Glossary:

Term	Definition
Health care facility	As defined in ORS 442.015. Means a hospital, a long term care facility, an ambulatory surgical center, a freestanding birthing center or an outpatient renal dialysis facility.
Health care acquired infection	Results from an adverse reaction to the presence of an infectious agent or its toxin; AND was not present or incubating at the time of admission to the health care facility.
Risk-adjusted methodology	A standardized method used to ensure that intrinsic and extrinsic risk factors for a health care acquired infection are considered in the calculation of health care acquired infection rates.

## Healthcare Acquired Infection (HAI) Advisory Committee

### Evaluation of Current Progress and Discussion of Potential Future Activities

January 12, 2011

1 to 3 pm

Public State Office Building,  
800 NE Oregon Street, Portland, OR, Room 1E

This document services three purposes: (1) it provides some background on the work of the Healthcare Acquired Infection (HAI) Reporting Program, (2) it proposes benchmarks for our current reporting program, and (3) it provides some discussion points for the committee as it considers future goals.

#### **Background**

The catalyst for the HAI Advisory Committee was to develop and support the HAI Reporting Program, promulgated in ORS 442.851 and OAR 409-023-0000 through 409-023-0105. In the fall of 2009, the State of Oregon received American Recovery and Reinvestment Act of 2009 (ARRA) funding to implement an HAI State Plan to address HAI reduction in the state. The State Plan aligns with the HAI Reporting Program goals and allows the committee to consider other activities outside of the reporting program. This document proposes benchmarks for the reporting program and discusses additional items the committee may want to consider in terms of eliminating HAIs in the state. Appendix A provides supplementary data for this document.

#### **Current HAI Targets**

One of the references the committee used to select HAI targets is Tier 1 of the US Department of Human and Health Services (US HHS) Action Plan to address HAIs<sup>1</sup>. In Appendix A, Table 1A presents the targets of the Tier 1 plan to address HAI reduction in acute-care hospitals. Of the seven targets presented in the plan, the committee selected four. Targets were selected based on mortality and morbidity data, volume of activities performed in Oregon hospitals, and when possible, identifying activities for which evidence-based solutions existed.

The following four targets were selected:

1. Central-line associated bloodstream infections (CLABSI) in non-specialty intensive care units (ICUs), using outcome data from the National Healthcare Safety Network (NHSN).
2. Methicillin-resistant *Staphylococcus aureus* (MRSA), using the existing Public Health Active Bacterial Core (ABC) program.

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<sup>1</sup> US Department of Human and Health Services Action Plan to Prevent Healthcare-Associated Infections. Issued January 22, 2009 and updated on its web site. Web site accessed 1/4/2011.  
<http://www.hhs.gov/ash/initiatives/hai/actionplan/index.html#tier1>

3. Surgical Site Infection Measures (SSIs), using the NHSN outcome measures.
4. Surgical Site Infections, using the Surgical Care Improvement Project (SCIP) process of care measures.

For targets 3 and 4 above, measurements were phased in over time. For example, for Target 3 (surgical site infections), the project started with coronary artery bypass graft and knee replacement surgeries in 2009 and is adding four additional procedures starting in 2011 (abdominal hysterectomy, colon, hip replacement, and laminectomy). For target 4, the project started with three SCIP measurements in 2009 and three additional process measures have been added as of 2011. Table A1 presents the targets presented in the US HHS Action Plan, and highlights the targets selected by the committee.

Recently, the US HHS has released a draft of its Tier 2 Action Plan to address HAI prevention in ambulatory surgical centers and end-stage renal dialysis centers and to address healthcare worker influenza vaccination rates.<sup>2</sup> These documents provide some information on reporting metrics, but do not provide final recommendations.

Before the release of the draft Tier 2 Action Plan, the committee decided to report on healthcare worker (HCW) influenza vaccination rates and adopted benchmarks set by the Healthy People program. The Office for Oregon Health Policy and Research (OHPR) developed a facility survey for HCW influenza vaccination coverage for hospitals and long-term care facilities. OHPR will be releasing a report on these data in early 2011. Table A2 presents details on the HCW influenza vaccination rate and Healthy People benchmarks.

### **Evaluation of Progress Toward Goals**

OHPR has released two reports on the HAI Reporting program. The first report was released in May 2009, and it included annual data for central-line associated bloodstream infections (CLABSIs) and surgical site infections (SSIs). In December 2010, OHPR released an update report, which included data from January 2010 through June 2010. Given that Oregon has preliminary comparative data, we are provided proposed benchmarks and a preliminary evaluation of our progress below. Table A3 provides more details on this evaluation.

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<sup>2</sup> US Department of Health and Human Services. Action Plan to Prevent Healthcare Associated Infections, Tier 2: Ambulatory Surgical Centers, End-Stage Renal Disease Facilities, and Increasing Influenza Vaccination Among Healthcare Personnel. Accessed 1/4/2011.  
<http://www.hhs.gov/ash/initiatives/hai/actionplan/index.html#tier2>

<b>Table 1: Preliminary Evaluation of HAI Reporting Program for Hospitals</b>			
<b>Metric</b>	<b>Source</b>	<b>Proposed Oregon 2013 Target</b>	<b>Appears Progress Made?</b>
CLABSI	NHSN	50% reduction in ICUs	Yes
MRSA	EIP	50% reduction	Data not available yet; will be available 2011.
SSIs-KPRO	NHSN	25% reduction	Data not available yet; available summer 2011.
SSIs-CBGB/C	NHSN	25% reduction	No
SSI/SCIP Measures	SCIP	95% adherence for all measures	Yes
HCW Influenza Vaccination	OHPR Survey	2015: 70% vaccination rate 2020: 90% vaccination rate	Data not available yet; available summer 2011.

### **Additional Activities to Consider**

In addition, we summarized activities related to the introduction of practices to reduce HAIs in the state. Table A4 presents an inventory of such activities. Given the current status of the HAI reporting program, current prevention activities in the state, and input from committee members, the following activities are put forth for the committee's consideration:

1. Reporting Additional Process Measures for Hospitals.
  - a. Use of the World Health Organization (WHO) Surgical Checklist, including implementation status (as to whether it is used for all surgeries or some surgeries).
  - b. Participation in collaborative as a process measure. A list of some collaborative activities is provided in Table A-4.
  - c. Use of the Healthcare Research and Quality (AHRQ) Patient Safety Survey and last date implemented.
2. Reporting of *Clostridium difficile* at hospitals. Administrative data could be used to summarize the incidence in the state and NHSN could be used to summarize data per facility.
3. Reporting of SCIP-Inf-7 measure: surgical patients with urinary catheter removed on Postoperative Day 1 or Postoperative Day 2 with day of surgery being day zero. (This measure does not apply to certain urological, gynecological, or perineal procedures.)
4. Revising rules for neonatal intensive care unit (NICU) reporting from the Vermont Oxford Network (VON) to the National Healthcare Safety Network (NHSN). Note: we originally wrote rules to report rates using the VON, given

that all Oregon NICUs were using VON. Since that time, NICU reporting using NHSN has become required for Medicate payment adjustment.

5. Support of STOP BSI collaborative for all hospitals without zero CLABSIs.
6. Statewide active surveillance standards for MRSA. Standard procedures would support the reporting of healthcare acquired disease vs. community acquired onset.
7. Refocus MRSA as an HAI target.
8. Reporting using the Standard Infection Ratio.
9. Collaborative work between regional clusters of long-term care facilities and hospitals to address multi-drug resistant organisms (MDROs). Representative organisms of concern are MDROs such as 1) MRSA, (2) extended-spectrum  $\beta$ -lactamase (ESBL+)–producing gram-negative bacteria, and (3) Clostridium difficile (C. difficile).
10. Infection reporting standards for dialysis facilities. Our current rules state that we will begin reporting for dialysis facilities as of 2011.

### **Suggested Reading List**

US HHS Action Plan to Prevent Healthcare Associated Infections.

<http://www.hhs.gov/ash/initiatives/hai/actionplan/index.html>, including Tier 1 (for hospitals) and Tier 2 (for ambulatory surgical centers, nursing homes, and healthcare worker influenza vaccination).

Moving toward elimination of healthcare-associated infections: a call to action. Cardo D, Dennehy PH, Halverson P, Fishman N, Kohn M, Murphy CL, Whitley RJ; HAI Elimination White Paper Writing Group, Brennan PJ, Bright J, Curry C, Graham D, Haerum B, Kainer M, Kaye K, Lundstrom T, Richards C, Tomlinson L, Skillen EL, Streed S, Young M, Septimus E. Infect Control Hosp Epidemiol. 2010 Nov;31(11):1101-5.

Office for Oregon Health Policy and Research, Oregon Health Authority, December 2010. Oregon Healthcare Acquired Infections, January 2009 – June 2010. Oregon Health Policy and Research Oregon Healthcare Acquired Infections Report. Issued December 14, 2010.

Office for Oregon Health Policy and Research, Oregon Health Authority, September 23, 2010 presentation for the Senate Health Care Committee regarding Healthcare Worker Influenza Vaccination Rates

Office for Oregon Health Policy and Research, Oregon Health Authority, December 16, 2010 presentation for the House Health Care Committee regarding Healthcare Acquired Infection Reporting Program and Healthcare Worker Influenza Vaccination Rates

Vermont Long-term care and acute care join forces to prevent MDRO HAI transmission,  
Vermont Program for Quality in Healthcare, Inc.  
<http://www.vpqhc.org/interior.php/pid/13/sid/188>

**Appendix A:**  
**Supplementary Tables**

**Table A-1: Tier 1 US HHS Action Plan for HAI Prevention, National 5 Year Goals**

Metric Number and Label	Metric	Measurement System	National 5-Year Prevention Target
*1. CLABSI 1	CLABSIs per 1000 device days by ICU and other locations	CDC NHSN; Administrative discharge data <sup>1</sup>	CLABSIs per 1,000 device days by ICU and other locations below present NHSN 25th percentile by location type (75% reduction in Stratified Infection Ratio)
2. CLABSI 4	Central line bundle compliance (non-emergent insertions)	NHSN CLIP module	100% compliance with central line bundle (non-emergent insertions)
3. C diff 1	Case rate per patient days; administrative/discharge data for ICD-9 CM coded <i>Clostridium difficile</i> Infections	Administrative discharge data; NHSN MDRO module	30% reduction in the case rate per patient days and administrative / discharge data for ICD-9-CM coded <i>Clostridium difficile</i> Infections  NOTE: Preventability of endemic CDI is unknown; therefore, the meeting attendee experts suggested that HHS revisit this target in 2 years as prevention research findings may become available
4. CAUTI 2	# of symptomatic UTI / 1,000 urinary catheter days  [Number of UTIs (ICD-9-CM +not present on admission) / (# major surgery ICD-9-CM + urinary catheter ICD-9CM)]*100 discharges	CDC NHSN  Administrative discharge data <sup>2</sup>	25% reduction in the number of symptomatic UTI / 1,000 urinary catheter days  25% reduction in the [Number of UTIs (ICD-9-CM+not present on admission) / (# major surgery ICD-9-CM + urinary catheter ICD-9-CM)]*100 discharges <sup>3</sup>
*5. MRSA 1	Incidence rate (number per 100,000 persons) of invasive MRSA infections	CDC EIP/ABCs	50% reduction in incidence rate of all healthcare-associated invasive MRSA infections
*6. SSI 1	Deep incision and organ space infection rates using NHSN definitions (SCIP procedures)	CDC NHSN	Median deep incision and organ space infection rate for each procedure/risk group will be at or below the current NHSN 25th percentile
*7. SSI 2	Adherence to SCIP/NQF infection process measures (perioperative antibiotics, hair removal, postoperative glucose control, normothermia)	CMS SCIP	95% adherence rates to each SCIP/NQF infection process measure
CLABSI: Central line associated bloodstream infection. C diff: <i>Clostridium difficile</i> CAUTI: Catheter Associated Urinary Tract Infections MRSA: Methicillin-resistant <i>Staphylococcus aureus</i> SSI: surgical site infection			EIP: The CDC's Emerging Infection Program ABC: Active Bacterial Core surveillance system CLIP: Central Line Insertion Practices MDRO: Multidrug resistant organism

\* Indicates target was selected by HAI Advisory Committee.

Source for US HHS action plan targets: <http://www.hhs.gov/ash/initiatives/hai/prevtargets.html>

<b>Metric Number and Label</b>	<b>Metric</b>	<b>Measurement System</b>	<b>Healthy People Targets</b>
**1. Healthcare Workers Vaccinated for Seasonal Influenza	Percentage Healthcare Workers Vaccinated for Seasonal Influenza: [(Count of Healthcare Workers Vaccinated) – (Count of Healthcare Workers with documented medical contraindication)]/Count of Healthcare Workers	OHPR Annual Healthcare Worker Influenza Vaccination Survey	Interim 2015 Target: 70% Healthy People 2020 Target: 90%

\*\*Target was selected by HAI Advisory Committee.

The Healthy People program is a program of the US HHS and Provides 10-year national objectives for improving the health of all Americans. The Healthy People 2010 goal for healthcare worker influenza vaccination was 60%. For 2020, the goal is 90%. Given the challenge of meeting the 2020 goal, the US HHS has convened a federal workgroup to develop strategies to increase the vaccination rate, and this workgroup has set an interim goal of 70% vaccination coverage by 2015.<sup>3</sup>

<sup>3</sup> US HHS Action Plan to Prevent Healthcare Associated Infections: Influenza Vaccination of Healthcare Personnel. [http://www.hhs.gov/ash/initiatives/hai/tier2\\_flu.html](http://www.hhs.gov/ash/initiatives/hai/tier2_flu.html). Accessed 1/4/2011.

Table A-3: Measurement of HAI Reporting Program Progress					
Metric	Source	Oregon Baseline	Baseline Information or Notes	Proposed Oregon 2013 Target	Progress Information or Notes
CLABSI	NHSN	2009	1.31 per 1,000 central line days 60% reported zero (26/44)	50% reduction in ICUs	<u>Jan-June 2010:</u> 1.04 per 1,000 central line days 73% reported zero (33/45)
MRSA	EIP	2008	16.5 per 100,000 persons	50% reduction	2009 report not available yet.
SSIs-KPRO	NHSN	2009	0.86% 54% reported zero (27/50)	25% reduction	<u>Jan-June 2010:</u> 0.56% 71% reported zero (34/48)
SSIs-CBGB/C	NHSN	2009	2.10% 7% reported zero (1/14)	25% reduction	<u>Jan-June 2010:</u> 2.33% 29% reported zero (4/14)
SSI/SCIP Measures	SCIP	2008	SCIP-Inf-1: 85% SCIP-Inf-2: 94% SCIP-Inf-3: 89%	95% adherence for all process measures	<u>2009 SCIP Data:</u> SCIP-Inf-1: 94% SCIP-Inf-2: 97% SCIP-Inf-3: 93%  Note: SCIP-Inf-6 started reporting as of Jan. 1, 2010; SCIP-Inf-4 and 10 started reporting Jan. 1, 2011.
HCW Influenza Vaccination	OHPR Survey	2009-2010	Hospitals: 62% Long-Term Care: 54%	Healthy People Interim Target 2015: 70% vaccination rate Healthy People Target 2020: 90% vaccination rate	Data for 2010-2011 season will be available in 2011.  Reporting for ambulatory surgical centers will be added to 2010-2011 season.

**Table A-4: Summary of Oregon Hospital Initiatives  
Related to Introduction of HAI Reduction Practices**

<b>Project Title</b>	<b>Description of Project</b>	<b>Lead Agencies/ Contact</b>	<b>Timeline/ Participation</b>
(1) American Professionals in Infection Control (APIC), Oregon SW Washington Chapter	APIC provides training and mentoring of infection control professionals. The local APIC chapter provides a web site with infection prevention tools, hosts monthly meetings that address infection control and NHSN training issues, and has an active listserv with postings regarding infection control issues.	2011 APIC President, Molly Hale, OHSU 2010 APIC President, Janet Sullivan, PeaceHealth  Note: access to Chapter web site requires login and password.	Ongoing  Membership is unknown, but it is believed to include most hospitals and ambulatory surgical centers.
(2) APIC and Oregon Hospital and Health System Association (OAHHS) Partnership for NHSN Training	APIC and OAHHS have a partnership that has launched and sustained NHSN training in Oregon. NHSN training began in the fall of 2008. It has included face-to-face conferences and webinars, including refresher webinars.	APIC Members and OAHHS/Diane Waldo  2010 training materials archived on OAHHS web site for members.	Ongoing  Includes most hospitals; 2010 training invited representatives from ambulatory surgical centers.
(3) Hand Hygiene Project	The program provides strategies for both patients and caregivers to increase hand hygiene compliance. Product use and secret shopper methods are used to collect and validate hand hygiene rates.	OAHHS/Diane Waldo  <a href="http://www.oahhs.org/quality/initiatives/hand-hygiene-project.html">http://www.oahhs.org/quality/initiatives/hand-hygiene-project.html</a>	2007-ongoing  15 hospitals currently participating; up to 18 hospitals have participated.
(4) Methicillin-resistant Staphylococcus aureus (MRSA) Collaborative	Used the National Healthcare Safety Network (NHSN) to report MRSA rates using lab-identified and event-identified MRSA. Featured monthly conference calls regarding MRSA reduction/infection control strategies and guest speakers on a variety of topics, including antibiotic stewardship.	Acumentra Health, Kathy Phipps  <a href="http://www.acumentra.org/provider/initiatives/mrsa.php">http://www.acumentra.org/provider/initiatives/mrsa.php</a>	3 year contract, ending July 2011.  5 hospitals participating
(5) Multi-drug resistant organism (MDRO) Toolkit	An eight-chapter toolkit that addresses topics ranging from risk assessment, antibiotic stewardship, to active surveillance. OAHHS held two conference calls for its members to introduce items in	OAHHS/Diane Waldo  <a href="http://www.oahhs.org/quality/initiatives/file-library/mdro-member-toolkit.pdf">http://www.oahhs.org/quality/initiatives/file-library/mdro-member-toolkit.pdf</a>	Fall of 2009 introduction.  Toolkit mailed to all OAHHS members. Toolkit available on OAHHS web site.

**Table A-4: Summary of Oregon Hospital Initiatives  
Related to Introduction of HAI Reduction Practices**

<b>Project Title</b>	<b>Description of Project</b>	<b>Lead Agencies/ Contact</b>	<b>Timeline/ Participation</b>
	the kit. Many of the concepts were used in foundational package for the Oregon HAI Collaborative		
(6) Oregon Healthcare Acquired Infection Collaborative	Program is addressing three HAI targets: CLABSI, SSIs, and Clostridium difficile. It includes regular conference calls, training webinars, site visits, face-to-face and virtual learning sessions. It includes STOP BSI methodology in its program, and process and outcome data are collected from a variety of sources, including NSHN. Performance data is feedback to participants monthly.	Oregon Patient Safety Commission/Melissa Parkerton  <a href="http://www.oregon.gov/OPSC/index.shtml">http://www.oregon.gov/OPSC/index.shtml</a>	2010-2011  9 hospitals participating
(7) Oregon National Surgical Improvement Program (NSQIP)	The Oregon NSQIP group is working on glycemic control to reduce surgical complications. Although it may not be directly related to infection prevention, future initiatives may be more closely aligned.	The American College of Surgeons (ASC) leads the national group; Oregon Patient Safety Commission leads the Oregon NSQIP group/Leslie Ray  <a href="http://www.acsnsqip.org/">http://www.acsnsqip.org/</a>	Ongoing  8 hospitals participating.
(8) Oregon Patient Safety Commission (OPSC) Adverse Event Reporting Program	One element of the OPSC's reporting program is to collect data on "serious" healthcare-acquired infections. If these are identified, facilities are to perform a root cause analysis.	Oregon Patient Safety Commission/Leslie Ray	Ongoing  54 hospitals
(9) Oregon Public Health Division CLABSI Validation Study and HAI Research Programs	Public Health is conducting a CLABSI validation study of data entered into NSHN. Feedback is provided directly to facilities. Public Health is conducting a number of research studies, including healthcare associated and community associated Clostridium difficile.	Oregon Public Health Division/Zintars Beldavs and Margaret Cunningham  <a href="http://www.oregon.gov/DHS/ph/acd/index.shtml">http://www.oregon.gov/DHS/ph/acd/index.shtml</a>	44 hospitals participating in CLABSI validation study

**Table A-4: Summary of Oregon Hospital Initiatives  
Related to Introduction of HAI Reduction Practices**

<b>Project Title</b>	<b>Description of Project</b>	<b>Lead Agencies/ Contact</b>	<b>Timeline/ Participation</b>
(10) Surgical Care Improvement Project (SCIP) and heart failure project	Acumentra is leading an effort to improve SCIP rates. The program includes monthly calls, webinars, and guest speakers. (Note: During the development of this effort, Acumentra learned that hospitals did not want face-to-face meetings.) Currently, the program is issuing quality awards to strong performers.	Acumentra Health, Ruth Medak  <a href="http://www.acumentra.org/provider/initiatives/hospital.php">http://www.acumentra.org/provider/initiatives/hospital.php</a>	3 year contract, ending July 2011.  11 hospitals participating
(11) STOP BSI  Comprehensive Unit-based Safety Program (CUSP) and Bloodstream Infections (BSI)	Funded by Agency for Healthcare Research and Quality (AHRQ), OAHHS leads a national program to reduce catheter associated bloodstream infections. The program consists of a culture change element [the Comprehensive Unit-based Safety Program (CUSP)] and evidence-based activities to reduce CLABSIs. The Oregon HAI Collaborative uses STOP BSI methodology for its CLABSI target and some hospitals are dually enrolled in the Oregon HAI Collaborative and the STOP BSI collaborative.	OAHHS/Diane Waldo  <a href="http://www.oahhs.org/quality/initiatives/preventing-blood-stream.html">http://www.oahhs.org/quality/initiatives/preventing-blood-stream.html</a>	2009 – ongoing  9 hospitals participating
(12) World Health Organization (WHO) Safe Surgery Checklist	Initiative to implement the WHO Safe Surgical Checklist in all Oregon Hospitals. The checklist has surgical team members verify aloud key elements of the surgery and that they are performing the right procedure on the right part of the right patient.	Oregon Institute for Healthcare Improvement Network/Leslie Ray, Kathy Phipps, Diane Waldo  <a href="http://www.who.int/patientsafety/safesurgery/ss_checklist/en/index.html">http://www.who.int/patientsafety/safesurgery/ss_checklist/en/index.html</a>	2009- ongoing  54 Oregon hospitals are using checklist; 2 more working to implement
(13) Legislative Workgroup on Healthcare	The focus of the workgroup is to promote and educate providers on the safety and efficacy of healthcare worker	Oregon Public Health Immunization Program, Collette Young	Educational outreach is performed for all Oregon hospitals and long-term care facilities

**Table A-4: Summary of Oregon Hospital Initiatives  
Related to Introduction of HAI Reduction Practices**

<b>Project Title</b>	<b>Description of Project</b>	<b>Lead Agencies/ Contact</b>	<b>Timeline/ Participation</b>
Worker Influenza Vaccinations	influenza vaccination. It is also creating a web site honor roll to highlight providers with strong vaccination rates.	Oregon Public Health Division, Ann Thomas  <a href="http://www.flu.oregon.gov/Pages/index.aspx">http://www.flu.oregon.gov/Pages/index.aspx</a>	
(14) Other	Hospitals have developed their own infection prevention programs. Many hospitals report participation in other HAI reduction initiatives; some are sponsored by their Health System and others are national programs that they join. A complete list of Oregon Health System initiatives related to HAI reduction could not be prepared for this report.	Not applicable	Not applicable



## WHITE PAPER

## Moving toward Elimination of Healthcare-Associated Infections: A Call to Action

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### INTRODUCTION

Jointly, the Association for Professionals in Infection Control and Epidemiology (APIC), the Society for Healthcare Epidemiology of America (SHEA), the Infectious Diseases Society of America (IDSA), the Association of State and Territorial Health Officials (ASTHO), the Council of State and Territorial Epidemiologists (CSTE), Pediatric Infectious Diseases Society (PIDS), and the Centers for Disease Control and Prevention (CDC) propose a call to action to move toward the elimination of healthcare-associated infections (HAIs) by adapting the concept and plans used for the elimination of other diseases, including infections. Elimination, as defined for other infectious diseases, is the maximal reduction of "the incidence of infection caused by a specific agent in a defined geographical area as a result of deliberate efforts; continued measures to prevent reestablishment of transmission are required."<sup>1(p24)</sup> This definition has been useful for elimination efforts directed toward polio, tuberculosis,<sup>2</sup> and syphilis<sup>3</sup> and can be readily adapted to HAIs. Sustained elimination of HAIs can be based on this public health model of constant action and vigilance. Elimination will require the implementation of evidence-based practices, the alignment of financial incentives, the closing of knowledge gaps, and the acquisition of information to assess progress and to enable response to emerging threats. These efforts must be underpinned by substantial research investments, the development of novel prevention tools, improved organizational and personal accountabilities, strong collaboration among a broad coalition of public and private stakeholders, and a clear national will to succeed in this arena.

The clear consensus among healthcare epidemiologists, infection preventionists, infectious disease physicians, and other

clinicians attending the Fifth Decennial International Conference on Healthcare-Associated Infections 2010 is that now is the time to advance the cause of HAI elimination.<sup>4</sup> In this white paper, we embrace the goal of HAI elimination and we identify steps to achieve this goal. We are committed to working together to eliminate HAIs, recognizing that further work is needed to implement the steps identified in this call to action.

HAIs are an increasingly recognized problem. The number of people who are sickened or die and the financial impact from HAIs are unacceptably high.<sup>5</sup> Intrinsic to the problem is the inconsistent implementation of proven preventive measures. Furthermore, we know little about the burden of infections outside hospitals, particularly in long-term care facilities, ambulatory surgical centers, and other outpatient settings, and the burden of infections outside the United States. The World Health Organization has reported that, at any given time, approximately 1.4 million people have an HAI; in developing countries, the risk can be up to 20 times greater than in developed countries.<sup>6</sup> In addition, the emergence of HAIs caused by multidrug-resistant microorganisms is an increasing concern.<sup>7</sup> We recognize the diversity of political, economic, educational, and clinical capacity throughout the world, as well as the success of various HAI prevention efforts. The framework we describe is based primarily on the US experience, but we are optimistic that these principles can be applied to the elimination of HAIs around the globe.

Recently, efforts in several countries have shown remarkable success in preventing some HAIs,<sup>8-11</sup> and there is a growing body of knowledge defining a full range of prevention interventions that can address specific HAIs when consistently applied across settings.<sup>12</sup> As the US population ages and

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healthcare costs rise, HAI elimination becomes a “best buy” for patient health and healthcare savings. We are now facing a unique and timely opportunity to move toward the elimination of these infections. Political will and investments at the federal, state, and local levels in the prevention of HAIs—such as the Health and Human Services Action Plan to Prevent HAIs, the American Recovery and Reinvestment Act funding,<sup>13</sup> individual state mandates for public reporting,<sup>14</sup> the Deficit Reduction Act,<sup>15</sup> the Patient Protection and Affordable Care Act,<sup>16,17</sup> and consumer expectations for transparency and accountability—provide momentum for success.

#### LEARNING FROM LOCAL SUCCESSSES

Currently, there exists a real opportunity to eliminate specific HAIs, including central line-associated bloodstream infections (CLABSIs). Recent local and regional initiatives have shown 60%–70% overall decreases in the rate of CLABSIs in intensive care units (ICUs), with no CLABSIs for many consecutive months in some ICUs.<sup>18,19</sup> Moreover, these reductions have been sustained for up to 4 years following implementation of CLABSI prevention interventions.<sup>20</sup> The interventions associated with dramatic reductions in the rate of CLABSIs included strategies to increase adherence to existing evidence-based guidelines. Specific strategies to increase adherence to evidence-based guidelines included (1) leadership support at the highest levels of the facility, (2) leadership and guidance from healthcare epidemiologists and experts in infection prevention and control, (3) education and engagement of clinicians, (4) packaging of recommendations in patient-centered “bundles,” (5) improvement of the safety culture in healthcare units and facilities, (6) data-driven tools and initiatives to assess impact and to provide feedback to clinicians about progress and challenges, and (7) local and statewide collaborative efforts to broadly share best practices.<sup>18,19,21</sup> These efforts included effective, evidence-based practices, such as immediate and detailed analysis of opportunities to improve the prevention of additional infections after a CLABSI has been detected. An important component of these interventions has been leadership endorsement and support of a culture of safety in the healthcare facility, which has allowed front-line staff to feel empowered to intercede on behalf of patient safety when clinical activities deviated from expected pathways and has likely contributed to improved clinical outcomes.<sup>18,19</sup>

In moving toward sustained improvements in safety culture and HAI elimination, progress has been incremental, following the quality cycle of “plan-do-check-act-repeat.”<sup>22</sup> Successful projects have focused on consistent and reliable implementation of practices shown to reduce HAIs. Further progress toward elimination will require continued research that identifies additional effective practices and strategies to prevent HAIs.

#### IMPERATIVES FOR THE ELIMINATION OF HAIS

On the basis of lessons from recent successes, we propose that the elimination of HAIs will require constant action and vigilance (1) to promote adherence to evidence-based practices through partnering, educating, implementing, and investing; (2) to increase sustainability through the alignment of financial incentives and reinvestment in successful strategies; (3) to fill knowledge gaps to respond to emerging threats through basic, translational, and epidemiological research; and (4) to collect data to target prevention efforts and to measure progress. These efforts must be underpinned by sufficient investment (Figure 1). For example, despite HAIs being among the leading causes of death in the United States, only recently have HAIs been recognized as an important target for prevention. To accelerate progress from recent successes, more support for prevention innovations and training will be needed to accomplish the desired impact in HAI prevention. Important steps for the elimination of HAIs will be characterized by the following imperatives.

##### 1. Implement Evidence-Based Practices

The cornerstone of HAI elimination is to increase adherence to what we already know can be effectively implemented, on the basis of scientific evidence. These recommendations are based on research conducted by experts in prevention and

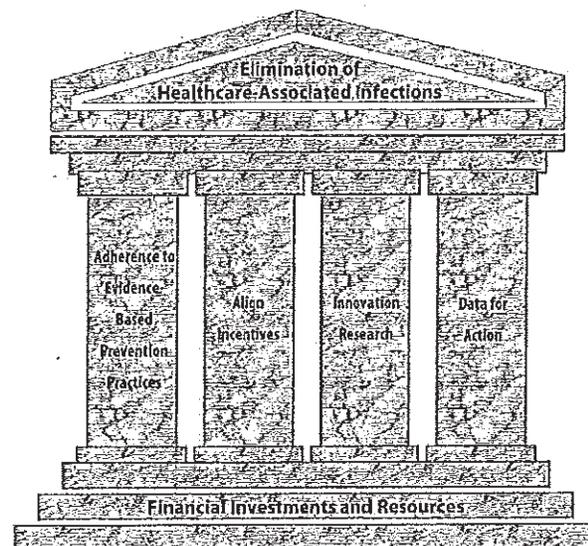


FIGURE 1. Pillars of HAI elimination. The elimination of HAIs will require (1) adherence to evidence-based practices; (2) alignment of incentives; (3) innovation through basic, translational, and epidemiological research; and (4) data to target prevention efforts and measure progress. These efforts must be underpinned by sufficient investments and resources.

are included in several clinical guidelines (eg, CDC's Healthcare Infection Control Practices Advisory Committee [HIC-PAC] infection control guidelines,<sup>12</sup> SHEA and IDSA's Compendium of Practical Strategies to Prevent Healthcare-Associated Infections in Acute Care Hospitals,<sup>23</sup> and APIC's Elimination Guides<sup>24</sup>). Adherence to evidence-based practices will require flexibility to respond to the changing healthcare environment and emerging pathogens. Furthermore, the barriers to adherence are multiple and complex. Although most of the reportedly successful HAI prevention strategies have targeted infections in ICUs, such interventions must move increasingly into non-critical care hospital settings and non-hospital healthcare settings to achieve the best possible outcomes. To identify best implementation strategies, partnerships and collaboration with specific clinical groups (eg, hospitalists, critical care specialists, surgeons, and infectious disease physicians), as well as with healthcare epidemiologists, infection preventionists, patient safety and quality officers, and health service researchers, are needed. In addition, all groups (eg, physicians, nurses, allied health professionals, dietitians, housekeepers, and clerical staff) who impact the daily care of a patient must work as a team to prevent HAIs. As part of the team, each person should understand his or her role in prevention and should be empowered to do the right thing for patients. "Collaboration rather than competition should be the hallmark of elimination efforts."<sup>25</sup>

Successful collaboratives have focused on the development of partnerships outside of single facilities. Partnerships among competing facilities and hospitals, as well as health departments and hospital associations, have allowed sharing of best practices and strategies to overcome barriers to implementation and progress in a nonthreatening manner. Partnering with payers can also create an incentive for facilities to prevent HAIs by rewarding progress toward elimination.

Finally, healthcare epidemiologists, infectious disease physicians, infection preventionists, and public health professionals need to expand and to improve upon current collaborations and partnerships with consumers and legislators to provide the most current science and evidence-based practices on improving HAI prevention. Such efforts can increase the likelihood of legislative mandates that truly support, rather than hinder, progress toward HAI elimination. Public health departments, working with HAI prevention experts, need to establish and to maintain strong programs in HAI elimination.

## 2. Align Incentives

A thoughtful integration of payment incentives that focuses on prevention is critical in moving toward elimination of HAIs. The combined tools of healthcare payment, oversight and accreditation, and public reporting are emerging ways to increase adherence to HAI prevention practices. Currently, there is political will to identify cost-saving strategies, and HAI prevention strategies provide many opportunities to

achieve that goal. Refining and strengthening these tools on the basis of both experience and data must be priorities to achieve elimination goals and to prevent potential unintended consequences. For example, in the United States, experts in healthcare epidemiology and infection prevention join infectious diseases physicians to collaborate with the Joint Commission, the Centers for Medicare and Medicaid Services (CMS), and other certification and accreditation groups to improve evidence-based oversight of infection prevention practices. These collaborations can greatly increase opportunities to improve adherence and to prevent infections. Ideally, payment policies should provide sufficiently broad incentives to catalyze the development of systems of care that are prevention oriented. In such systems, prevention of HAIs would not be an added requirement but would be completely embedded in the processes of care. Ultimately, working with key payment stakeholders—including payers (health plans, insurance companies, and CMS) and providers (hospitals, physicians, vendors of information technology, medical products, and laboratory systems)—to create appropriate incentives to promote system-wide strategies for HAI prevention will be critical to creating sustainable elimination. High standards of accountability also will be needed to make sustained elimination a reality.

A broad, strategic approach toward prevention-oriented healthcare payment is likely to shift the focus from strategies based on individual healthcare encounters (ie, reduced payment for individual HAIs) to performance-modeled payment to providers or groups of providers based on the population-based results (ie, numbers or rates of HAIs among all hospital admissions, all providers' patients, or particular groups of patients).

## 3. Address Gaps in Knowledge

To develop and to test credible prevention strategies for HAIs, we need to better understand how and why these infections occur. Although there are successful prevention initiatives for some device-associated infections in ICUs,<sup>18-20</sup> research is still needed to develop evidence-based prevention recommendations for many other HAIs. In some cases, additional research is needed to augment a limited understanding of the basic epidemiology of healthcare-associated pathogens (eg, colonization and transmission dynamics), to inform development of rational prevention strategies.

Research is also needed to assess the impact of existing prevention recommendations and policies. Experts in the field propose 5 phases of translational research to address gaps in knowledge: (1) epidemiologic studies, (2) discovery of potential interventions, (3) evaluating promising interventions leading to the development of evidence-based guidelines, (4) moving evidence-based guidelines into health practice, and (5) evaluating the "real world" health outcomes of population health practice.<sup>26</sup> The current level of evidence for HAI pre-

vention varies for each type of infection and also by type of healthcare setting. For example, knowledge of the prevention of CLABSI in ICUs<sup>18,19</sup> is well understood and more adequate to move toward elimination. To expand prevention efforts to other HAIs in all healthcare settings and to move closer to elimination, knowledge gaps need to be addressed. Experts in healthcare epidemiology, in collaboration with stakeholders in prevention, must develop science-based, systematic approaches to the design of studies that will provide definitive answers to the critical questions of HAI prevention.<sup>27</sup>

#### 4. Data for Action and Responding to Emerging Threats

Timely and accurate data on HAI occurrence are necessary to define the scope of the problem (and its variability across locations) and to assess progress toward elimination. Incidence data allow healthcare epidemiologists and infection preventionists to detect HAIs, to inform clinicians about how best to prioritize prevention interventions, and to assess the impact of those interventions. Data also allow public health officials to identify local and regional facilities requiring improvement. Measurement can also provide institutions and the public with information for comparisons across facilities and regions to better understand current risks for HAIs as well as risks over time. With accurate data, both providers and patients can make informed decisions about risks and prevention strategies for HAIs. Investments for timely and high-quality data should be focused on (1) reshaping standard definitions and surveillance methods to fit the new, emerging information system paradigms (eg, electronic health information records and data mining); (2) creating national and global data standards for key HAI prevention metrics; and (3) creating or refining the data analysis and presentation tools available to prevention experts, clinicians, and policy makers at the local, state, national, and international levels.

Healthcare delivery is complex and dynamic. New devices and invasive procedures are developed and introduced at an extraordinary rate, creating the need for prospective assessment of hazards associated with new technology. Experts in healthcare epidemiology, infectious diseases, and infection prevention should identify and should address potential infections associated with these newer technologies and procedures through collaboration with developers and those who test new devices. In addition, new and emerging pathogens and resistance remain an ongoing threat in all healthcare settings. Public health agencies have a unique role to play in HAI prevention. Federal, state, and local public health agencies investigate outbreaks of emerging infections or adverse events, such as inappropriate medical device use, medical product contamination, or unsafe clinical practices. By discovering new or previously unrecognized problems, we gain information on what needs to be measured, and we identify research gaps and educational needs. Through the investigation of these outbreaks, preventable causes of emerging infections can be identified and incorporated into practice

guidelines. State and local health departments are in a unique and important position to assess emerging trends or gaps in prevention, particularly given shifts in healthcare delivery from acute care settings to ambulatory and long-term care settings. The public health model's population-based perspective in state and local health departments and its collaboration with other experts in infection prevention and with professional associations will provide increased national capacity to assess emerging risks from HAIs.

#### CALL TO ACTION

Progress toward the elimination of HAIs is real. The opportunities to build on successes described here and at the recent Fifth Decennial International Conference on Healthcare-Associated Infections 2010 provide momentum to achieve aggressive goals for the elimination of HAIs. The expertise and resourcefulness of healthcare epidemiologists, infection preventionists, infectious disease physicians, and other clinicians together with public health professionals can build on and can accelerate recent progress. We must continue to work together to increase adherence to practices supported by the body of knowledge on existing prevention interventions and toward the alignment of incentives such as institutional and personal accountability to accelerate the elimination of HAIs. We must invest in research to find innovative solutions to combat challenges, such as antimicrobial resistance, the increasing burden of HAIs outside of traditional hospital settings, and the refinement of existing intervention bundles to be the safest and most cost-effective. We must be flexible and responsive to emerging challenges and the changing healthcare environment. Most of all, we must focus on the patient and must challenge ourselves to no longer accept the unacceptable. HAIs are preventable. We must work together to eliminate HAIs for the generations to come.

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