ESSENTIAL COMPONENTS FOR STATE HAI EFFORTS

Focus Group

Held on September 14, 2011

Goals

- Identify & prioritize essential thematic components of a comprehensive baseline state HAI program
- Identify lead stakeholders for each component
- Identify required resources & infrastructure
- Describe federal & regional support

When Selecting Essential Components

- One-size will not fit all
  - States have taken different approaches
  - States are at different stages of development
  - Some states are working in the context of legislative mandates
  - Resources and commitment are variable
- Efforts should not be limited to hospitals – move across the continuum of care
- Some components may be better suited for certain stakeholders to implement
- Some states may have difficulty developing the infrastructure for certain components
  - How can the federal government & national stakeholders aid states to overcome barriers?
  - How can the HHS Regions aid states?

Coordination, collaboration, integration and stakeholder engagement

- Multidisciplinary Advisory Group
- Leveraging limiting resources
- Partnership outreach and development
- Coordination and alignment of programs
- Open stakeholder communication
- Trust building

Surveillance, Analysis and Reporting of Data across the continuum of care

- Surveillance
  - Standardized definitions, methods, and system
- Data reporting with goals and metrics
- Harmonization of reporting requirements across federal, state and local
  - Avoid redundancy
- Electronic data capture
- Data validation

Quality Improvement/Best Practices

- Education and training on QI and best practices
- Dissemination of information on best practices
- Identification, utilization and development of expertise
- Design, implement and evaluate collaborative HAI prevention projects

Culture Change

- Establish a culture of safety
- Establish a culture of learning
- Commitment from leadership
- Commitment of followers
- Non-punitive approaches

Summary

(1) Coordination, collaboration, integration and stakeholder engagement – Multidisciplinary Advisory Group

- **Lead: State and Local Health Departments**

(2) Surveillance, analysis and reporting of HAIs, validation, electronic capture of data, alignment of measures

- **Lead: State and Local Health Departments**

(3) Culture of safety, health and learning

- **Lead: QIO**

(4) Quality improvement/best practices implementation and evaluation

- **Lead: QIO**

Status Report: US HHS Action Plan Tier 1, September 2011					
Metric	**Source**	**Oregon Baseline**	**Baseline Information or Notes**	**Proposed Oregon 2013 Target**	**Progress Information or Notes**
CLABSI	NHSN	2009	2009: 1.37 per 1,000 central line days 52% reported zero (23/44)	50% reduction in ICUs	2010: 0.77 per 1,000 central line days 61% reported zero (28/45)
MRSA	EIP*	2008	2008: 13.1 per 100,000 persons	50% reduction	2009: 9.9 per 100,000 persons MRSA EIP catchment area is 13 hospitals in Portland tri-county area. MRSA EIP initiated in 2004 with rate of 21.1 per 100,000. Decrease of 53% from 2004 through 2009.
SSIs-KPRO	NHSN	2009	2009: 0.91% 54% reported zero (27/50)	25% reduction	2010: 0.79% 46% reported zero (22/48)
SSIs-CBGB/C	NHSN	2009	2009: 2.10% 7% reported zero (1/14)	25% reduction	2010: 2.27% 29% reported zero (4/14)
SSI/SCIP Measures	SCIP	2008	2008: SCIP-Inf-1: 85% SCIP-Inf-2: 94% SCIP-Inf-3: 89%	95% adherence for all process measures	2009: 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	2009-2010: Hospitals: 62% 100% reporting rate Long-Term Care: 54% 81% reporting rate	Healthy People Interim Target 2015: 70% vaccination rate Healthy People Target 2020: 90% vaccination rate	2010-2011: Hospitals: 69% 100% reporting rate Long-Term Care: 52% 91% reporting rate Reporting for ambulatory surgical centers will be added to 2010-2011 season.

* Invasive MRSA rates represent Hospital-acquired (HO) and Hospital Associated, Community Onset (HACO) based on 2009 epidemiological definitions provided by the CDC.

Healthcare Facility HAI Reporting to CMS via NHSN – Current and Proposed Requirements

DRAFT (8/5/2011)

HAI Event	Facility Type	Reporting Start Date
CLABSI	Acute Care Hospitals Adult, Pediatric, and Neonatal ICUs	January 2011
CAUTI	Acute Care Hospitals Adult and Pediatric ICUs	January 2012
SSI	Acute Care Hospitals Colon and abdominal hysterectomy	January 2012
I.V. antimicrobial start *(proposed)*	Dialysis Facilities	January 2012
Positive blood culture *(proposed)*	Dialysis Facilities	January 2012
Signs of vascular access infection *(proposed)*	Dialysis Facilities	January 2012
CLABSI	Long Term Care Hospitals *	October 2012
CAUTI	Long Term Care Hospitals *	October 2012
CAUTI	Inpatient Rehabilitation Facilities	October 2012
MRSA Bacteremia	Acute Care Hospitals	January 2013
C. difficile LabID Event	Acute Care Hospitals	January 2013
HCW Influenza Vaccination	Acute Care Hospitals	January 2013
HCW Influenza Vaccination	OP Surgery, ASCs	October 2013
SSI *(proposed)*	Outpatient Surgery/ASCs	January 2014

* Long Term Care Hospitals are called **Long Term Acute Care Hospitals** in NHSN

Validation of Central-Line Associated Bloodstream Infection (CLABSI) Data Reporting, Oregon, 2009

Zintars Beldavs, MS
Manager Healthcare-Associated Infections Program
Acute and Communicable Disease Prevention Section
Office of Disease Prevention and Epidemiology
Public Health Division
October 13, 2011

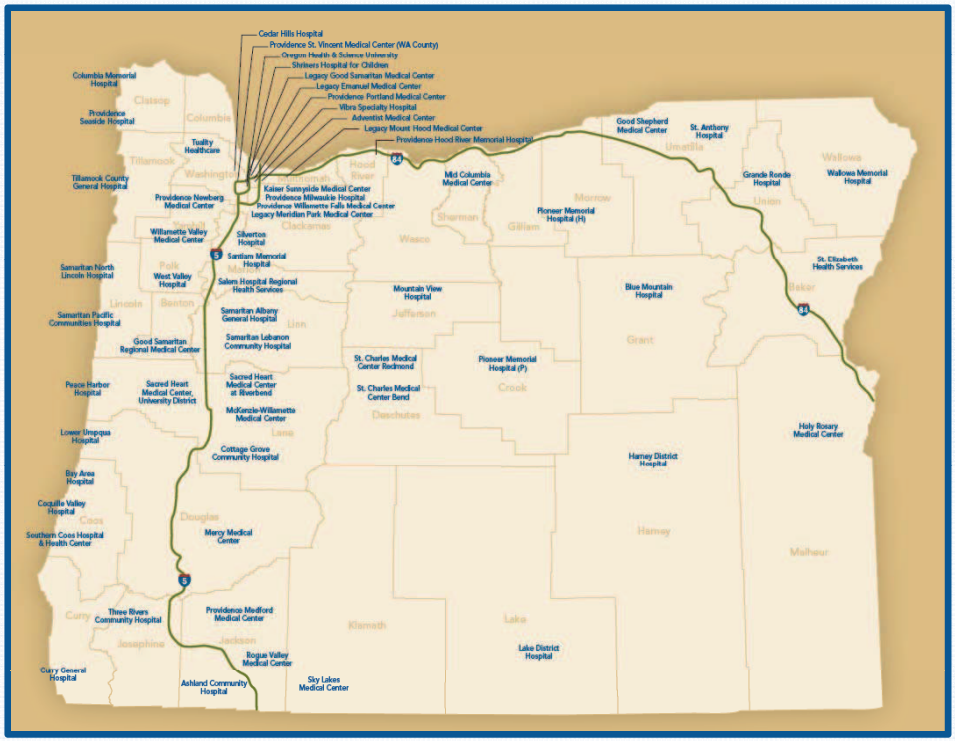
Oregon Health Authority

Objectives

- Evaluate quality of reported data
  - Assess under- and over-reporting
  - Gauge the reliability and consistency of surveillance case definitions
- Provide feedback and guidance to facilities on surveillance case definitions, reporting methods, and use of NHSN

Methods

- Study period: calendar year 2009
- Included: 44 acute care hospitals
  - 28 with <50 beds
  - 10 with >200 beds
  - Median central line days 210, range 4-4956
- OPHD validation team:
  - Research analyst
  - Epidemiologist
  - Physician
  - 3 public health nurses



Map: Oregon Association of Hospitals and Healthcare Systems, oahhs.org

Methods

Spring 2009: letter to hospital stakeholders (administration, IP staff, lab) requesting medical records access for OPHD reviewers

March 2009- April 2010: on-site hospital visit for chart review

- retrospective record review by 1-4 members of OPHD team
- At 37 hospitals, reviewed records for **all** ICU patients with positive blood cultures
- At 7 largest hospitals, reviewed all reported CLABSI plus random sample of 60 blood-culture(+)ICU pts. not reported as CLABSI
- Validators **blinded** as to whether cases reported as CLABSI

Methods

After visit, **all cases with discordant CLABSI determinations** (suspected false positives or false negatives) adjudicated by phone with hospital staff

- Participants
  - Hospital IP staff
  - Hospital physician
  - OPHD validators
  - OPHD physician
- Review of all findings for final CLABSI determination
- If no consensus reached, case referred to CDC NHSN staff

This step unique to Oregon's validation project (not previously attempted by other states)

Results

1199 medical records reviewed

- 549 at 7 highest-volume facilities (records sampled)
- 722 at small- and medium- volume facilities

817 record reviews included in final analysis

- 382 records censored because positive blood cultures were obtained <48 hours after admission to ICU, thus could not meet CLABSI case definition

Importance of inter-agency follow-up discussion

Among **27** CLABSIs identified by OPHD reviewers but not reported by hospitals, the final status after follow-up adjudication call was CLABSI in **16** (59%)

Sensitivity of reporting:

- **72%** based on follow-up adjudication
- *vs*. **60%** based on OPHD review alone (P= 0.07)

ABSI rate before and after validation

alidation increased the statewide ICU CLABSI rate from 1.21 (95% CI: 0.95–1.51) to 1.54 (95% CI: 1.25–1.88) CLABSI per 1,000 central-line days

ange after validation in CLABSI rate	No. hospitals	%
te decreased 0.70	1	2
o change	33[a]	75
01–0.50 higher	2	5
51–1.00 higher	2	5
.00 higher	6[b]	14
tal	**44**	

23/33 had no CLABSI identified either before or after the validation.

Reasons for discrepancies:
False negatives (under-reports)

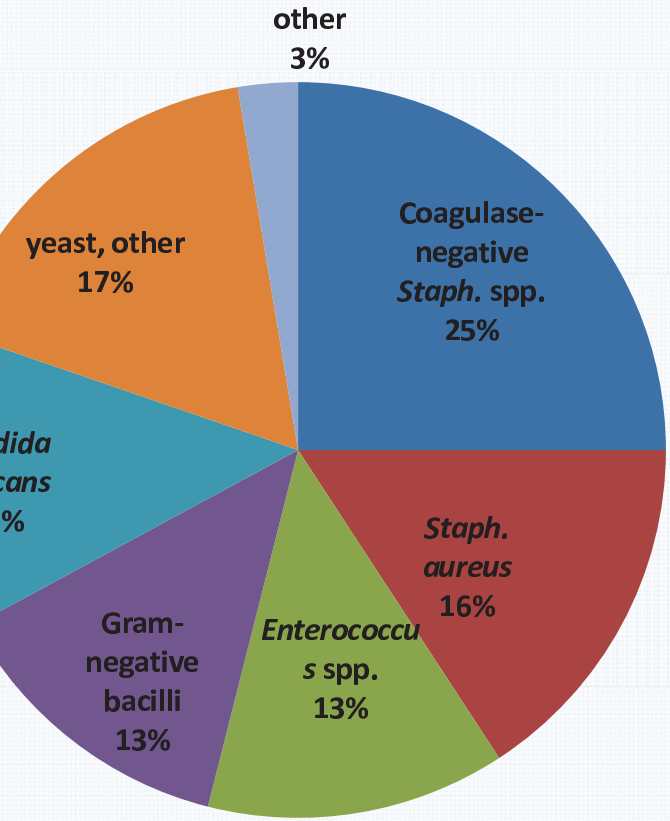
ason for discrepancy for under-reported CLABSI	No.	%
sattributed to other source of infection	7	44
cognized CLABSI but failed to attribute to ICU	1	6
sclassified as present at admission	1	6
se definition interpretation (NHSN organism rules)	1	6
ner/ unknown/ "just missed"	6	38
al	16	100

LABSI "just missed": at some facilities, IP staff had changed since 2009 and current staff unaware of rationale for previous CLABSI reporting/ non-reporting decisions.

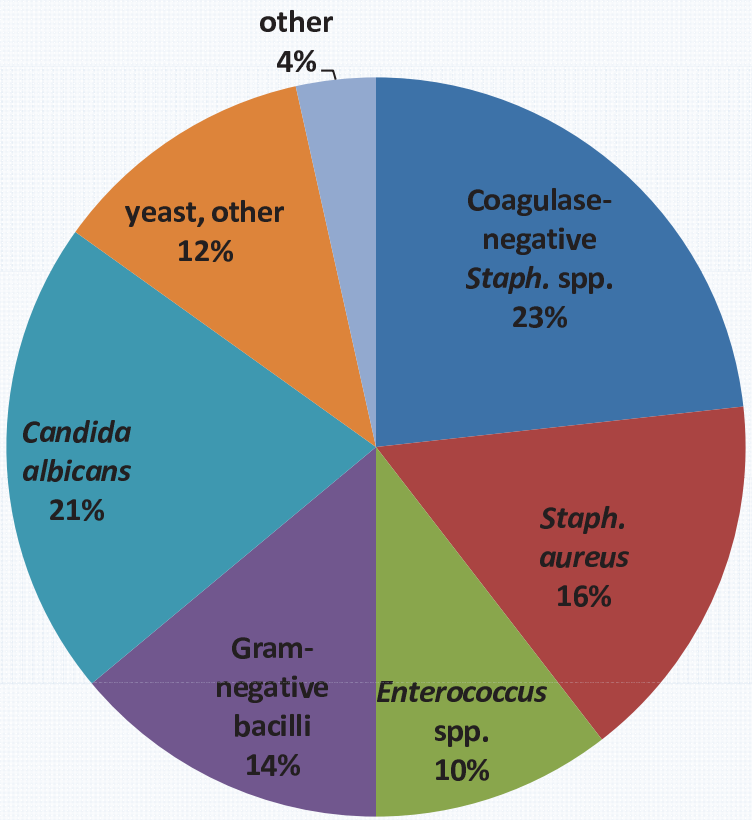
Reasons for discrepancies:
False positives (over-reports)

son for discrepancy for under-reported CLABSI	No.	%
ction attributable to another site	2	33
ction not attributable to ICU	2	33
gle blood culture for probable contaminant	1	16.5
known why reported as CLABSI	1	16.5
al	**6**	

CLABSI Pathogens before and after validation



Before validation (n=76)



After validation (n= 86)

Conclusions

Validating hospital CLABSI reporting improves accuracy of hospital-based CLABSI surveillance

Discussing discordant findings improves the quality of validation

Thank you!

Questions?

971-673-1111

zintars.g.beldavs@state.or.us

Oregon Health Authority

Validation of Coronary Artery Bypass Graft Surgical Site Infections

Zintars Beldavs, Manager HAI Program, Acute and Communicable Disease Prevention Section, Office of Disease Prevention and Epidemiology, Oregon Public Health Division, Oregon Health Authority

October13th, 2011

Surgical Site Infection Validation Research

- **Somewhat uncharted territory**

- **More complicated than CLABSI**
  - No obvious indicator (positive cultures in CLABSI)
  - Random sample underpowered (small # SSIs in procedures)
  - Post discharge surveillance (infections 1 year out)

Surgical Site Infection Validation Research

- **Discussed with other states/CDC**
- **Significant literature/resource investigation**
- **No ideal method for sampling proxy indicator:**
  - Considered home infusion – multiple sources, inconsistent data
  - Considered pharmacy – many sources/difficult to access data
  - Considered NNIS risk index – found not great predictor our SSIs

Pilot Surgical Site Infection (SSI) Validation

- **Pilot – conducted June 2011**
  - Single hospital
  - Refine methods
  - Determine sampling scheme
- **All procedures 2009 where SSIs would be reportable**
  - KPRO
  - CABG
- **Post-discharge surveillance**
  - Only re-admissions to the same hospital

Full SSI Validation: Design

- **Only CABG**
  - Public health import
  - Realistic within time budget constraints
- **Data included**
  - All 14 hospitals in Oregon
  - 2009 and 2010 data
  - All procedures with reported infections and sample of procedures not reported
- **Post-discharge surveillance**
  - Only re-admissions to the same hospital up to one year following discharge (sternal wires are NHSN defined implants)

Full SSI Validation: Design

- **Sampling**
  - All reported infections
  - 20 **longest duration** from each year
    - Most associated NHSN risk factor readily available reported infections
- **Validate denominator data**
  - Comparison of number of surgeries reported to NHSN with number in administrative discharge codes
- **On site medical record review 1-2 days**

Full SSI Validation: Implementation

- **CEO and IP receive letter from Katrina**
  - Hospital Name (for epidemiology)
  - Medical record number (for hospital identification & de-duplication)
  - NHSN procedure number (for de-duplication and validation)
  - Whether procedure was associated with NHSN reported infection (for over-reporting)
  - Procedure Date (for validation)
  - Procedure Duration (for sampling)

Full SSI Validation: Implementation

- **Validation**
  - Receive list of procedures
  - Diane Roy schedules review
  - Review sample of records for 2009 and 2010
  - Compare results with reported
  - Follow up phone call
    - ACDP (Paul, Zints, Margaret, validators (mainly PH nurses)
    - Hospital (ID physician, IPs)
  - If needed, change of reported results

- **Analysis, Presentation, Publication**

Thanks!

Questions?

Protocol for Validation of Mandatory Reporting of Coronary Artery Bypass Graft Surgical Site Infections

INTRODUCTION

Objective

The objectives of the Oregon Public Health Division Acute and Communicable Disease Prevention Program (ACDP) in validating the mandatory reporting of Surgical Site Infection (SSI) data are to:

1. Determine the reliability and consistency of surveillance definitions,
2. Evaluate current surveillance methods used to detect infections,
3. Assess completeness of reporting to the Centers for Disease Control (CDC) National Healthcare Safety Network (NHSN), and
4. Based on the findings of this exercise, provide guidance to hospitals on surveillance definitions, reporting methods, and use of NHSN.

Background

Healthcare-associated infections (HAI) are a significant cause of morbidity and mortality. They are among the top ten leading causes of death in the US, accounting for an estimated 1.7 million infections and 99,000 deaths in hospitals alone in 2002 [i]. The annual cost to hospitals for these HAI was recently estimated at $33 billion. [ii] HAI are not limited to acute care hospitals, but have also been reported in same day surgical centers, dialysis facilities, outpatient ambulatory clinics, and in long-term care facilities, such as nursing homes and rehabilitation facilities.[iii] Hospital stays for methicillin-resistant *Staphylococcus aureus* (MRSA) have more than tripled since 2000 and increased nearly ten-fold between 1995 and 2005.[iv] The CDC's Emerging Infections Program (EIP) invasive MRSA surveillance system estimated that 94,360 invasive MRSA infections occurred in 2005, resulting in 18,650 deaths. [v]

In 2007, the Oregon state legislature passed House Bill 2524 with the intent of creating a mandatory HAI reporting program. The Oregon HAI Reporting Program initially published rules on July 1, 2008, and the National Healthcare Safety Network (NHSN) was chosen as the reporting system to be used for inpatient HAI outcome measures. [vi] Quarterly inpatient reporting to NHSN began January 1, 2009 and includes central line-associated bloodstream infections (CLABSI) in ICUs and surgical site infections (SSI) associated with three procedures: coronary artery bypass graft surgery with both chest and graft incisions (CBGB); coronary artery bypass graft surgery with chest incision only (CBGC); and knee prosthesis procedures (KPROs). Beginning on January 1, 2011, infections associated with laminectomy, hip prosthesis, colon surgery, and abdominal hysterectomy were included as reportable conditions. These infection types were selected based on their public health importance and measurability.

Need for Validation

A method to validate data must be considered in any mandatory reporting system to ensure that HAIs are being accurately and completely reported. Comprehensive validation of SSIs within the US is relatively uncharted territory but drawing from the literature on previous international SSI validation efforts as well as other US HAI validation efforts, there is reason to indicate validation is necessary to ensure accurate reporting.

The most attention to HAI validation in the US has probably been with CLABSI, possibly as the relatively simple NHSN definitions for CLABSI point to clear methods both for surveillance and validation. These efforts have provided indication of the importance of data validation. For example, in 2008, the New York State Health (NYS) Department reported on their CLABSI data validation process[vii]. Their findings indicated that the hospitals reported inconsistent infection data because they interpreted the HAI case definitions differently. Of the 168 CLABSI cases identified by the NYS HAI validation study, 43 (25.6%) had not been reported by the hospitals to NHSN. Of the 921 non-CLABSI cases identified by the NYS HAI validation study, 44 (4.8%) had been reported by the hospitals to NHSN as a CLABSI case.

More recently, the Connecticut Department of Public Health conducted a validation project of all CLABSI reported from ICU patients of thirty acute care hospitals in the fourth quarter of 2008. Of the 49 CLABSI cases identified by the Connecticut DPH validation study, 26 (53.1%) had not been reported by the hospitals to NHSN. Of the 427 non-CLABSI cases identified by Connecticut DPH, 4 (.09%) had been reported by the hospitals to NHSN as CLABSI cases.

Though there is considerable variance in published studies of CLABSI validation, as stated previously, the literature on SSI validation is even less conclusive with most published studies conducted outside of the US and demonstrating a wide range of sensitivity values from 75%[viii] to 96.7%[ix] for reported data. The apparent variation in SSI validation efforts might be a result of the current lack of comprehensive studies of the validity of SSI reported data and might also reflect the complicated case definitions for NHSN-defined SSIs, particularly in regard to post discharge surveillance and sampling methodology. Unlike the definition for CLABSI, NHSN-defined SSIs do not necessarily require positive microbiology cultures, and infections involving implants can be identified up to one year following surgery.

METHODS

Objectives of study

The objective of this study is to validate reporting of coronary artery bypass graft (CABG) surgical site infections in 2009 and 2010 for all hospitals performing this procedure in Oregon. This procedure and time frame is chosen to establish a baseline for comprehensive validation of Oregon's reportable HAI data. Data from the pilot validation of June 2011 will be included in analysis and further implementation of the full validation of Oregon acute care facilities will take place between September 2011 and June 2012.

Facility selection

Data will be validated for all 14 hospitals required to report CABGs statewide.

Selection of patients within hospitals

We will validate the data for all patients who had CABG surgery between January 1, 2009 and December 31, 2010. As procedures with implants can have NHSN defined infections up to a year out and sternal wires used in CABGs are defined as implants, we will request data for each record from January 1, 2009 through December 31, 2011. The data collection period for the pilot project will be June 1, 2011 – June 30, 2012. We will validate all records for procedures associated with reported infections and a sample of 40 procedures which were not reported as infections.

Sampling of procedures
Along with the census of all reported infections, a total of 40 other procedures will be sampled with 20 from 2009 and 20 from 2010. The total sample is convenience based to allow for a maximum of two days of record review with two reviewers for each hospital. To increase the likelihood of sampling potential infections, records will be sampled based on reported procedure duration. Procedures will be sorted by duration and the 20 procedures with longest duration from each year that were not reported as associated with infections will be included in the sample. These procedures will then be randomized with all procedures associated with reported infections. Reviewers will be blinded as to which records were reported as infections.

Data collection
We will request a list all patients who had coronary artery bypass graft surgery in 2009 or 2010 (request letter found in Appendix A). We will also request that the following information for each surgery, which should be readily available via NHSN, be included in the report sent to OPHD ACDP:

- Hospital Name (for epidemiology)
- Medical record number (for hospital identification & de-duplication)
- NHSN procedure number (for de-duplication and validation)
- Whether procedure was associated with NHSN reported infection (for over-reporting)
- Procedure Date (for validation)
- Procedure Duration (for sampling)

Once the list of surgeries has been received by ACDP, we will create a final patient list using the sampling scheme defined above. We will then request access from the medical record department of each hospital to the complete medical records for all patients on the final patient list. Some facilities have electronic medical records and a special password might be needed to access the patient's record. This issue will be resolved by the medical records department of each facility.

A retrospective chart review methodology will be used. The chart abstractor(s) will be blinded as to whether or not a healthcare associated infection was reported to NHSN. Medical records and hospital admission data will be reviewed using a standardized form (appendix B, "Surgical Site Infections Reporting") to determine if an NHSN defined surgical site infection occurred within the study time frame. Validator ratings of ease of access for different pieces of information will be recorded using the "SSI validation post-review form" found in Appendix C.

The study time frame will include surgical procedures completed between January 1, 2009 and December 31, 2010. NHSN-defined SSIs can happen up to 30 days following non-implant surgery and up to one year following surgery if an implant is used. To account for this time frame, we will examine all relevant data between January 1, 2009, the start of the period under study, and December 31, 2011, one year following the last day of the period under study, potentially including readmissions to the same facility, to determine whether any surgery evinced an NHSN-defined SSI. All definitions used for determining the presence of an infection will follow the CDC NHSN Surveillance Protocol[x].

Validation of denominator data
In order to validate whether all surgeries are entered into NHSN we will compare the number of CABG surgeries reported to the NHSN database with number of CABG surgeries found in an independent hospital discharge database managed by Oregon Public Health Division. We will also examine the data using descriptive statistical methods to identify any anomalous patterns or outliers that might indicate potential problems with the reporting of denominator data. The forms found in Appendix D ("Denominator validation pre-audit summary report template" and "Post-review denominator validation form") will be used to collect this data.

Analysis and Follow-up
Any discrepancies found by the validators will be discussed in a follow-up phone call or in-person meeting. The meeting will be composed of hospital infection prevention staff, OPHD validators, and an OPHD physician with infectious disease experience. Any questionable case that needs clarification regarding NHSN eligibility will be reviewed with CDC NHSN consultants for final determination regarding NHSN SSI case criteria. Data from the standardized data collection form will be entered into an electronic database at OPHD ACDP. The "SSI validation adjudication form" found in Appendix E will be used to record the process and outcome of adjudication.

Staff training
At the pilot sites, medical record review will be performed by ACDP staff or contractors, who have, at a minimum, completed self-directed training in NHSN data entry, management, and analysis through webinar sessions (all required modules) and review of the Patient Safety Component manual.

Data management and security
All information and identifiers (both electronic and hard copy) will be kept confidential. Validation data will be abstracted onto standardized reporting forms during the on-site hospitals visits and chart reviews. Paper copies of abstracted data will be kept in locked briefcases and not left unattended in vehicles. In situations in which ACDP staff are unable to return to the Portland State Office Building on the same day as the data are collected, all hard copies will be sent via US mail to ACDP. Once returned to ACDP, all paperwork will be maintained in locked file cabinets in ACDP. Data from these forms will be entered by ACDP staff into a secure password protected electronic database. Two years after the data validation project has ended, all confidential information will be destroyed.

Data analysis and reports
The data from the validation study will be electronically matched by medical record number to the dataset containing the NHSN SSI cases reported by the respective hospital for the same time period. The NHSN SSI cases reported by the hospital surveillance system will be compared to the true SSI cases determined by the retrospective analysis. The dataset match will yield cases that fall into 4 categories:

1. Cases reported by hospital to NHSN and identified by ACDP staff as SSI cases ("true positives")
2. Cases not reported by hospital and ruled out as SSI cases by ACDP staff ("true negatives")

3. Cases reported by hospital to NHSN but ruled out as SSI cases by ACDP staff ("false positive")
4. Cases not reported by the hospital but identified as SSI cases by ACDP staff ("false negatives")

Use of project data

The purpose of the data validation project is to monitor the accuracy of data submitted by hospitals to NHSN, and assess the hospital's surveillance system and use of NHSN definitions. Any unreported case(s) will be analyzed individually to determine why the case(s) went undetected and what action is necessary to correct the problem. ACDP staff will review and follow-up with each hospital that have been identified as having reported data inaccuracies or data irregularities. Cases determined to have been reported but not meeting NHSN criteria will also be reviewed and discussed with hospital surveillance personnel to correct any misinterpretation of criteria. The reviews with hospital staff will serve to provide on-site education on the definitions, surveillance mechanisms, and use of NHSN. The final report on this validation study will present all facilities' data in aggregate form.

Participants

ACDP Participants:

Zintars Beldavs, MS, HAI Program Manager, Principal Investigator for Project
Paul Cieslak, MD, Infectious Disease Consult for project, ACDP Section Manager
Margaret Cunningham, MPH, HAI Epidemiologist
Valerie Ocampo, BSN, MPH, Public Health Nurse
Jennifer Tujo, MSN, Infection Preventionist

September 15, 2011

«CEO_or_admin»
«Hospital_Name»
«Address»
«City», OR «ZIP»

Dear ,

Oregon law mandates the reporting of surgical site infections (SSIs) associated with coronary artery bypass grafts (CABGs) to the National Healthcare Safety Network (NHSN). To validate the completeness and accuracy of this reporting during 2009 and 2010, we ask your assistance. Specifically, we need a list of all coronary artery bypass grafts performed in your facilities during 2009 and 2010. We will review a sample of medical records and compare reported data with data from the statewide database of hospital discharges. This validation of data is required by House Bill 2524, enacted in 2007; it is not research.

Please forward a list of all coronary artery bypass surgeries reported to NHSN by your facility during January 1, 2009, through December 31, 2010, including the following data:

- Hospital Name
- Medical record number (for de-duplication)
- NHSN procedure number (for de-duplication and validation)
- Whether the procedure was associated with an NHSN-reported infection (to assess for possible over-reporting)
- Procedure Date (for validation)
- Procedure Duration (for sampling)

Most of these data are reported to NHSN and should be available to personnel responsible for such reporting (most commonly Infection Preventionists) in your facility. For a sample of these procedures, our staff will also request access to charts or electronic medical records for review in «review_in».

Please submit the list by «submit_list_date» , to:
Zintars Beldavs, MS, Manager Healthcare-Associated Infections
800 NE Oregon St, Suite 772
Portland OR 97232
Fax: 971-673-1100 E-mail: zintars.g.beldavs@state.or.us

If you need assistance in compiling this list of patients, please contact Zintars with the above contact information, and he will make arrangements to provide support. Once the list of surgical procedures has been submitted, our staff will schedule visit to your facility with your hospital's Infection Prevention staff to review medical records using standard NHSN surveillance definitions for surgical site infections.

Should you require additional information or have questions, please do not hesitate to contact Zintars. Thank you very much for helping to assure the accuracy and completeness of reporting.

Sincerely,
Katrina Hedberg, MD, MPH
State Epidemiologist, Oregon Public Health Division
CC: «IP», «dir_quality», «others»

Appendix B: Case Report Form

Surgical Site Infections Reporting

Hospital: _____

MR #: _____ **Procedure Date:** _____ **Age:** _____ **Sex:** _____ **Height:** _____ **Weight:** _____ **BMI:** _____

Date of Hosp Admit: _____ **Hosp Disch/Exp Date:** _____

Admitting Diagnoses:

Discharge / Final Diagnoses:

UNDERLYING CONDITIONS: check all that apply	
□ DM	□ Current smoker or smoking within past year
□ CHF	□ Cancer:_____
□ CAD	□ Other underlying condition: _____
□ Dialysis	
Notes:	

Discharge Status: □ **Alive** □ **Deceased**

Procedure type: □ **CBGB** (donor site) □ **CBGC** (chest incision only)

Type of graft used:

□ Left internal mammary/thoracic (LIMA or LITA) □ Right internal mammary □ Great saphenous □ Radial □ Other: _____

Anaesthesia start time: _____ **Surgery start time:** _____ **Surgery end time:** _____

ASA classification:	**Wound classification (at time of operation):**
□ 1 – Normally healthy patient	□ Class I [Clean]
□ 2 – Patient with mild systemic disease	□ Class II [Clean Contaminated]
□ 3 – Patient with severe systemic disease that is not incapacitating	□ Class III [Contaminated]
□ 4 – Patient with an incapacitating systemic disease that is a constant threat to life	□ Class IV [Dirty-Infected]
□ 5 – Moribund patient not expected to survive for 24 hours with or without the operation	
□ EMERGENCY	

Does the case meet NHSN case definition for SSI?

□ **YES** (Fill out appropriate table below)

□ **NO If not, why?**

- □ No infection detected
- □ No re-admission notes at this hospital
- □ Infection detected does not meet criteria of an NHSN operative procedure (i.e. not a closed incision)
- □ Infection detected past reportable time frame
- □ Infection detected was unrelated to surgical site
- □ Infection detected is a non-reportable infection
- □ Other:

□ **UNSURE** (Requires further discussion)

Notes:

CRITERIA for Superficial Incisional SSI [SUP INC]: □ **PRIMARY (SIP)** □ **SECONDARY (SIS); Site:**

Occurs within 30 days after operative procedure, **AND** involves only skin and subcutaneous tissue of the incision, **AND**

At least one of the following:	**Date observed**	**Where documented** (e.g. nurses notes, vitals, lab, etc.)
□ a. Purulent drainage from the superficial incision		
□ b. Organisms isolated* from an aseptically obtained culture of fluid or tissue from the superficial incision		
□ c. At least **one** of the following signs/symptoms: □ pain □ tenderness □ localized swelling □ redness □ heat □ superficial incision deliberately opened by surgeon AND is either culture (+) or not cultured		
□ d. Diagnosis of superficial incisional SSI by surgeon or attending physician		

*Please complete microbiology table

Appendix B: Case Report Form

Surgical Site Infections Reporting

Hospital: _____

CRITERIA for Deep Incisional SSI [DEEP INC]: □ PRIMARY (DIP) □ SECONDARY (DIS); Site: Occurs within **30** days of operative procedure if no implant is left in place (or within **one** year if implant in place and infection appears related to the operative procedure), **AND** involves deep soft tissues of the incision, **AND**		
At least one of the following:	**Date observed**	**Where documented** (e.g. nurses notes, vitals, lab, etc.)
□ a. Purulent drainage from the deep incision but not from the organ/space component of the surgical site		
□ b. Deep incision spontaneously dehisces or is deliberately opened by a surgeon **and** is culture (+) or not cultured **and** the patient has at least **one** of the following signs or symptoms: □ fever (>38°C) □ localized pain □ tenderness		
□ c. An abscess or other evidence of infection involving the deep incision is found on direct examination, during reoperation, or by histopathologic or radiologic examination		
□ d. Diagnosis of a deep incisional SSI by a surgeon or attending physician		

CRITERIA for Organ/Space SSI [ORGAN/SPACE]: **Please indicate site: □ BONE □ JNT □ CARD □ENDO □ MED □ VASC □ OTHER:_____(refer to appendix)** Occurs within **30** days after operative procedure if no implant is left in place (or within **one** year if implant is in place and the infection appears to be related to the operative procedure), **AND** infection involves any part of the body, excluding the skin incision, fascia, or muscle layers, that is opened or manipulated during the operative procedure, **AND**		
At least one of the following:	**Date observed**	**Where documented** (e.g. nurses notes, vitals, lab, etc.)
□ a. Purulent drainage from a drain that is placed through a stab wound into the organ/space		
□ b. Organisms isolated* from an aseptically obtained culture of fluid or tissue in the organ/space		
□ c. An abscess or other evidence of infection involving the organ/space that is found on direct examination, during reoperation, or by histopathologic or radiologic examination		
□ d. Diagnosis of an organ/space SSI by a surgeon or attending physician.		

*Please complete microbiology table

CASE AUDITED BY: **Date**

Was case entered by hospital into NHSN? □ YES □ NO **NHSN EVENT ID #**

If not, explain

□ **Reviewed with facility staff (Name/Title):** □ **no follow-up call** **Date**

Outcome of call:	**Reasons for discrepancies: check all that apply**
□ Case IS SSI	□ Key data unavailable to OPHD validators
□ Case IS NOT SSI	□ Data available but missed by OPHD validators
□ More information needed (explain below)	□ Case definition interpretation issue
	□ Other (explain below)

CALL NOTES:

DATA ENTRY BY: **DATE:**

Appendix B: Case Report Form

Surgical Site Infections Reporting

Hospital: ________________

MR #: _________________ Procedure Date: _____________ Age: _____ Sex: ____ Height: ____ Weight: ____ BMI: ____

Relevant Clinical Data: FORM _________ of_________

SUBSEQUENT INPATIENT/OUTPATIENT VISITS (including hospitalizations, wound care follow-up, etc.)

DATE of Admission/ Appt	Location (e.g. hospital, outpatient care)	Reason for Admission	Date of Discharge or Transfer	Location (e.g. transfer to hospital, discharge home, etc.)

ALL CULTURES (blood and other)

DATE	TIME	SITE	IN patient	OUT patient	Specific location of collection	ORGANISM
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
			☐	☐		
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			☐	☐		

Appendix B: Case Report Form

Surgical Site Infections Reporting

Hospital: _____

VITALS

Date	Time	BP	HR	Temp	WBC

PHARMACY

Date		Medication	Purpose
Start	Stop		

Notes:

DATA ENTRY BY: **DATE:**

Appendix C: Post review facility review form

SSI Validation Post-Review

Facility Name _____ **Visit date** _____

Validator name _____ Facility staff present _____

Total time spent reviewing records _____ Number of records reviewed _____

Types of records reviewed (check all that apply):
☐Paper chart ☐Electronic medical record system (name_____) ☐Other

Computer terminals available? ☐YES ☐NO
Necessary logins provided? ☐YES ☐NO
Did review start on time? ☐YES ☐NO

Rate availability of the following data elements (1 = easily accessible, 5 = unavailable)

		Best location to find relevant data? Any issues w/ accessing the data?
Admit – Discharge – Transfer	1 2 3 4 5	
Microbiology results	1 2 3 4 5	
Vitals	1 2 3 4 5	
Discharge summary	1 2 3 4 5	
Operative Procedure notes	1 2 3 4 5	
ASA/Wound classification	1 2 3 4 5	
Progress notes	1 2 3 4 5	
Histopathology/Radiology notes	1 2 3 4 5	

Should anything be changed in the form design to make it easier for data collection?

Thoughts on how to target actual infections based on the experience of reviewing the record?

Comments (including any obstacles, factors that contributed to success of the validation visit, notes for future validation teams, etc)

Template (populate with merge fields)

Pre-visit denominator report for Hospital X –*for ACDP use PRIOR to visit*

2009 procedure counts by month

	Reported to NHSN				
	CBGB	CBGC	Total	Per HDI	Possible missing procedures? (dates)
January					
February					
March					
April					
May					
June					
July					
August					
September					
October					
November					
December					

Observed denominator statistics for 2009

	CBBG		CBGC	
	Hospital X	State	Hospital X	State
Procedure duration				
mean				
median				
range				
sd				
Proportion of procedures with wound class:				
I (Clean)				
II (Clean- contaminated)				
III (Contaminated)				
IV (Dirty- Infected)				
Unknown				
Proportion of procedures with ASA score :				
1				
2				
3				
4				
5				

Observed denominator statistics for 2010

	CBBG		CBGC	
	Hospital X	State	Hospital X	State
Procedure duration				
mean				
median				
range				
sd				
Proportion of procedures with wound class:				
I (Clean)				
II (Clean- contaminated)				
III (Contaminated)				
IV (Dirty- Infected)				
Unknown				
Proportion of procedures with ASA score :				
1				
2				
3				
4				
5				

Major procedure time outliers/ possible errors

Missing and otherwise anomalous data:

Appendix D: Denominator Data Collection Forms

Post-review SSI denominator validation form --*for ACDP use FOLLOWING visit*

	Chart review findings (MRN:_____)	Per NHSN data (proc ID _____)
Admission date		
Procedure date		
Discharge date		
Anaesthesia start time		
Surgery start time		
Surgery end time		
ASA	□1 □2 □3 □4 □5	□1 □2 □3 □4 □5
Wound class	□ I (C) □ II (CC) □ III (CO) □IV (D) □ Unk	□ I (C) □ II (CC) □ III (CO) □IV (D) □ Unk
Notes on discrepancies:		
Date of review:	**Reviewer name:**	**Hospital :**

	Chart review findings (MRN:_____)	Per NHSN data (proc ID _____)
Admission date		
Procedure date		
Discharge date		
Anaesthesia start time		
Surgery start time		
Surgery end time		
ASA	□1 □2 □3 □4 □5	□1 □2 □3 □4 □5
Wound class	□ I (C) □ II (CC) □ III (CO) □IV (D) □ Unk	□ I (C) □ II (CC) □ III (CO) □IV (D) □ Unk
Notes on discrepancies:		
Date of review:	**Reviewer name:**	**Hospital :**

Appendix E: Adjudication form

SSI Validation: post-visit adjudication form *(facility name)*_____

Dear _____(mailmerge field),
Thank you for your cooperation and assistance with the Oregon Public Health Division (OPHD)'s validation of surgical site infection (SSI) data reported by your facility for 2009 and 2010.
We would like to schedule a conference call to discuss our team's findings.

We recommend that call participants include those responsible for NHSN reporting (typically Infection Control Practitioners) and, when available, a physician associated with your facility who is knowledgeable in regards to infectious diseases.

A summary of our staff's questions, including a list of cases for adjudication is listed below. If you have any questions or comments prior to the scheduled call date, please contact Diane Roy at 971-673-1093.

Please indicate your staff's availability:		
Date	Time	Available?
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO
		☐YES ☐NO

Please provide a number where OPHD can reach you for this call:
(____) ____ - _____
☐ **or check here** if you prefer to call in to OPHD's conference line
(number and instructions will be sent)

Names and roles of staff to participate in call:

_____
_____
_____
_____
_____

Please fax the completed form to Diane Roy at **971-673-1100** or call **971-673-1093**.

Summary of validation team findings

Visit date(s): Validation team member(s) present:
Facility staff present:

Specific cases for discussion

MRN	comments

Other notes and questions:

SSI Validation: post-visit adjudication for *(facility name)*___________________________________

Page 2: For ACDP use

Date of follow-up call/ meeting : ________________________

OPHD Participants:

Facility Participants:

Specific cases discussed

MRN	NHSN procedure ID	Nature of discrepancy or question	Outcome of discussion	comments
		☐possible SSI under-report (FN) ☐ possible SSI over-report (FP) ☐procedure/ denominator data issue ☐other:	Case is NHSN SSI yes ☐ no ☐ Case should be reported yes ☐ no ☐ ☐ infection other facility/community ☐ NHSN defined infection but not SSI	
		☐possible SSI under-report (FN) ☐ possible SSI over-report (FP) ☐procedure/ denominator data issue ☐other:	Case is NHSN SSI yes ☐ no ☐ Case should be reported yes ☐ no ☐ ☐ infection other facility/community ☐ NHSN defined infection but not SSI	
		☐possible SSI under-report (FN) ☐ possible SSI over-report (FP) ☐procedure/ denominator data issue ☐other:	Case is NHSN SSI yes ☐ no ☐ Case should be reported yes ☐ no ☐ ☐ infection other facility/community ☐ NHSN defined infection but not SSI	
		☐possible SSI under-report (FN) ☐ possible SSI over-report (FP) ☐procedure/ denominator data issue ☐other:	Case is NHSN SSI yes ☐ no ☐ Case should be reported yes ☐ no ☐ ☐ infection other facility/community ☐ NHSN defined infection but not SSI	
		☐possible SSI under-report (FN) ☐ possible SSI over-report (FP) ☐procedure/ denominator data issue ☐other:	Case is NHSN SSI yes ☐ no ☐ Case should be reported yes ☐ no ☐ ☐ infection other facility/community ☐ NHSN defined infection but not SSI	

Other comments/feedback on validation process:

[i] Klevens RM, Edwards J, Richards C, Horan T, Gaynes R, Pollock D, Cardo D. Estimating healthcare-associated infections and deaths in U.S. hospitals, 2002. Public Health Reports 2007; 122:160-166.

[ii] Scott R, Douglas. The direct medical costs of healthcare-associated infections in US hospitals and the benefits of prevention. March 2009. http://www.cdc.gov/ncidod/dhqp/pdf/Scott_CostPaper.pdf

[iii] Thompson ND, Perz JF, Moorman AC, et al. Nonhospital healthcare-associated hepatitis B and C virus transmission: united States, 1998-2008. Ann Intern Med 2009;150:33-9.

[iv] Elixhauser A and Steiner C. Infections with methicillin-resistant Staphylococcus Aureus (MRSA) in U.S. hospitals, 1993–2005. AHRQ Healthcare Cost and Utilization Project Statistical Brief 2007; 35:1-10.

[v] Klevens RM, Morrison MA, Nadle J, et al. Invasive methicillin-resistant *Staphylococcus aureus* infections in the US. JAMA 2007;298:1763-1771.

[vi] 7 The text of HB 2524 can be accessed at: http://www.oregon.gov/OHPPR/docs/HCAIAC/Reporting/HB_2524.pdf

[vii] New York State Hospital-Acquired Infection Reporting System: Pilot Year-2007. Report June 30, 2008.

[viii] Huotari, K, Agthe, N., and Lyytikäinen, O. Validation of surgical site infection surveillance in orthopedic procedures. AJIC 2007;35(4); 216-221.

[ix] Mcoubrey, J, Reilly, J, Mullings, A, Pollock, K, and Johnston, F.Validation of surgical site infection surveillance data in Scotland. Journal of Hospital Infection 2005: 61(3);194-200.
J McCoubrey, J Reilly, A Mullings, K Pollock, F Johnston

[x] 13. The Centers for Disease Control, National Healthcare Safety Network (NHSN) Manual. http://www.cdc.gov/ncidod/dhqp/pdf/nhsn/NHSN_Manual_PatientSafetyProtocol_CURRENT.pdf

Office for

Oregon Health Policy and Research

Ambulatory Surgical Centers

Survey on Elements of Patient Safety Performance

September 2011

Oregon Health Authority

TABLE OF CONTENTS

EXECUTIVE SUMMARY

This is the first report in Oregon to provide information on infection control practices in all 85 ASCs in the state. Findings are summarized below for five topics of the report.

ASC Characteristics. Of the 85 ASCs operating in Oregon as of May 2011, ASCs have been in operation an average of 10 years, with one facility that opened 40 years ago and two in 2011. The majority of Oregon ASCs began operating between 1996 and 2010, during which 70 facilities opened. Twenty-two percent (18) of Oregon ASCs are accredited by a federally recognized accrediting body. In Oregon, 88% (74) of ASCs have physician partners who perform surgeries in the center that own part or all of the facility. The primary specialty of ASCs are as follows: 25% (23) gastroentestinal endoscopy, 22% (19) ophthalmalgic, 16% (14) orthopedics, 12% (10) plastic/reconstructive, and 7% (6) pain management. These five categories repesent 84% of the ASCs in Oregon.

Staff Training in Infection Control. Ninety-one percent (77) of Oregon ASCs have registered nurses (RN) who are responsible for infection control. Most ASCs (98%) indicated that the person responsible for infection control is an ASC employee. Of the 85 ASCs in Oregon, 13% (11) have staff with a certificate in infection control from the Certification Board for Infection Control and Epidemiology, and two additional ASCs indicate staff are in process of obtaining this certification. Of the 74 ASCs that do not have a certified person in charge of infection control, about half (48%, n=41) indicated they had attended infection control trainings sponsored by the state ASC assocation. All ASCs noted that nursing staff were trained in infection control procedures, and higher training rates were reported for staff responsible for equipment disinfection (95%, n=81) and staff providing direct patient care (91%, n=77).

Infection Control Program. All ASCs reported using one or more national infection control guideline for its infection control program. In its Action Plan to address HAIs, the US Health and Human Services recommends that ASCs conduct regular self-audits on infection control practices using the CMS Audit Tool. Ninety-five percent (80) of ASCs report they conduct infection-control self-audits, and the most frequently reported interval is quarterly or more frequently (57%, n=48). Sixty-nine percent of ASCs (59) use the CMS tool for self-audits. Most (78%, n=66) ASCs educate patients about methods to reduce infections after the procedure in their discharge plans.

Infection Control Practices. ASCs reported on specific infection control practices, such as policies for the use of gloves and equipment decontamination. Twenty ASCs provided answers that are outside the standard scope of practice. Seventy-six percent (65) of ASCs provided answers consistent with federal guidelines for infection control.

Post-Discharge Surveillance. When asked about the main methods to identify post-discharge infections, the majority (72%; n=61) of ASCs reported that they rely on the physician performing the procedure to report it back to the ASC. Sixty-six percent (56) of ASCs noted they did not use an electronic data system to track post-discharge infections. Seventy-eight percent (66) of ASCs reported using one or more of the following post-discharge survey methods: patient surveys, surgeon surveys or exchange patient lists with surgeons. Fifty-one percent (43) of ASCs reported conducting surveillance for one month after the procedure for procedures without implants, in accordance with federally recognized standards. Forty-seven percent (33 of 70) reported conducting surveillance for one year for surgeries with implants, in accordance with federally recognized standards. All ASCs reported collecting at least one process measure. Eighty-nine percent (76) ASCs reported collecting one or more outcome measures related to surgical site infections or transmission of infectious agents.

The Healthcare Acquired Infection (HAI) Advisory Committee will review the results of this report to consider the following issues:

1. Reporting of infections for selected procedures based on morbidity/mortality and volume in the state.
2. Making recommendations regarding consistent and regular infection control training standards for all ASC staff.
3. The use of standard federally recognized infection control definitions and measurement tools.
4. Dissemination and reinforcement of standard infection control practices.
5. Standards for infection prevention in patient education and discharge reports for all ASCs.
6. The communication of standards in the use of data and reporting of process and outcome measures within the ASC.

BACKGROUND

An Ambulatory Surgical Center (ASC) is a healthcare facility in which procedures that do not require an overnight stay are conducted. ASCs perform a wide range of procedures. In the 1980s and 1990s, many surgeries and procedures that used to be performed exclusively in hospitals began taking place in ASCs. Typical surgical procedures conducted in ASCs include endoscopies and colonoscopies (including removal of identified polyps), orthopedic procedures, plastic/reconstructive surgeries, and eye, foot, and ear/nose/throat surgeries.

Recently, there has been much focus on HAIs associated with ASCs. In 2008, an outbreak of Hepatitis C was traced to two gastrointestinal specialty ASCs in Nevada. It was estimated that 40,000 individuals were potentially exposed to Hepatitis C and other infectious agents and the attendant alert to these individuals was the largest public health notification in US history.[1] The cause of the outbreak was traced to lapses in infection control, including reusing syringes and drawing medication to be injected into multiple patients from single-dose vials. Subsequent inspections of other ASCs in other states found similar problems, suggesting that such lapses are not isolated events.[2,3]

This report is part of the Healthcare Acquired Infections (HAI) Reporting Program, promulgated in ORS 442.851, Notes Following, and OARs 409-023-0000 through 409-023-3500. It summarizes the results of a survey conducted by the Office for Oregon Health Policy and Research (OHPR) of 86 free-standing ASCs in Oregon on evidence-based elements of patient safety performance. The goal of this survey is to provide an overview of current safety practices in ASCs, and to provide information for policymakers, providers, professional associations, and the public. The Oregon HAI Advisory Committee will use this data to evaluate reporting and other policies for ASCs related to HAI.

The survey tool is presented in Appendix A. A list of acronyms for the report is in Appendix B.

METHODS

A standard survey to collect data on patient safety best practices in ASCs did not exist, so the following resources were consulted to create this survey:

[1] Fisher, GE et al., Hepatitis C virus infections from unsafe injection practices at an endoscopy clinic in Las Vegas. Clin Infect Dis 2010 Aug 1:51(3):267-73.

[2] Schaefer, MK, et al. Infection control assessment of ambulatory surgical centers. JAMA 2010 Jun 9 303(22):227-39.

[3] US Government Accountability Office, February 2009. Health-care associated infections. HHS action needed to obtain representative data on risks in ambulatory surgical centers. GAO-09-213.

- Phase 2 of the US Department of Health and Human Services Action Plan to Prevent Healthcare Associated Infections[4]
- The Centers for Medicare and Medicaid Services (CMS) Infection Control Audit Tool for Ambulatory Surgical Centers[5]
- The Washington State Department of Health Post-Discharge Surgical Site Infection Surveillance Practice Survey[6]
- Input from the HAI Advisory Committee and Dana Selover, MD, MPH, Office of Community Health and Health Planning, Oregon Health Authority

The survey was field tested by the ambulatory surgical center subcommittee. The final survey was input into Survey Monkey and distributed to the administrators of 86 ASCs via email on March 1, 2011, with a due date of March 31, 2011. Follow-up calls were made to facilities that did not complete the survey within the allotted time. During the survey fielding period, OHPR learned that of the 86 ASCs addressed in the survey, two ASCs had closed and one had opened. Thus, the survey represents the 85 ASCs opened in the Oregon during the data collection period, and OHPR received surveys from all 85 Oregon ASCs.

RESULTS

The survey consisted of five parts:

- ASC Characteristics
- Staff Training
- Infection Control Program

[4] US Department of Health and Human Services. Action Plan to Prevent Healthcare Associated Infections: Phase 2: Ambulatory Surgical Centers, End-Stage Renal Dialysis Facilities, and Increasing Influenza Vaccination Among Healthcare Personnel. http://www.hhs.gov/ash/initiatives/hai/tier2_ambulatory.html. Accessed 7/4/2011.

[5] Centers for Medicare and Medicaid. Exhibit 351, Ambulatory Surgical Center Infection Control Surveyor Worksheet *(Rev. 68 Issued: 11-24-10, Effective: 11-24-10, Implementation: 11-24-10).* http://www.cms.gov/manuals/downloads/som107_exhibit_351.pdf. Accessed 7/4/2011.

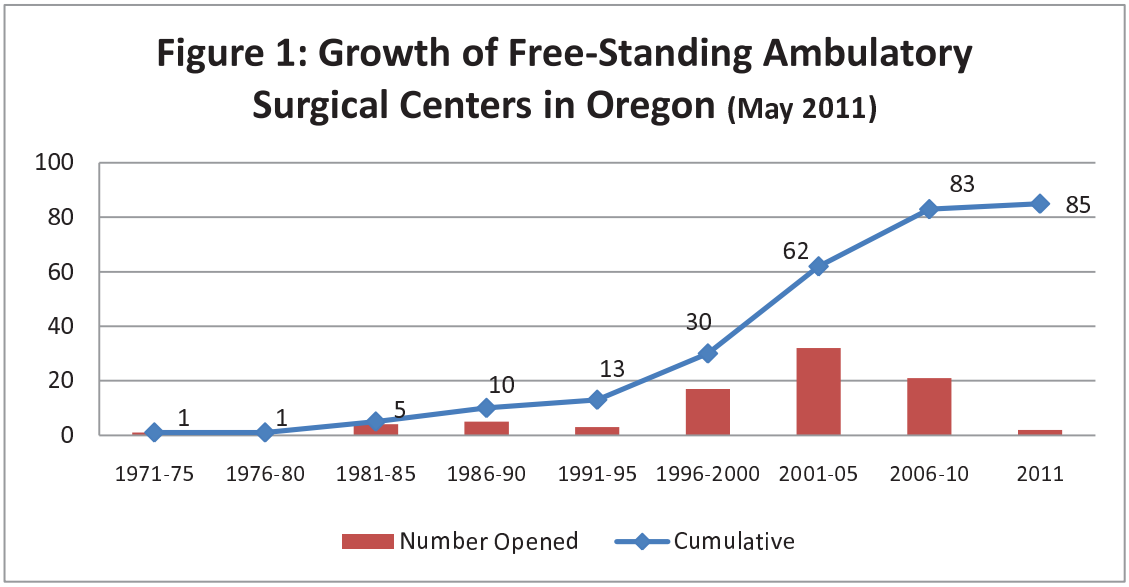
[6] Zarate R, Birnbaum D. Post-Discharge Surgical Site Infection Surveillance in Washington Acute Care Hospitals. Abstract #1060568. Council of State & Territorial Epidemiologists annual conference, Pittsburgh Pennsylvania, June 2011.

- Infection Control Practices, and
- Post-Discharge Surveillance and Reporting.

This document summarizes results from each section.

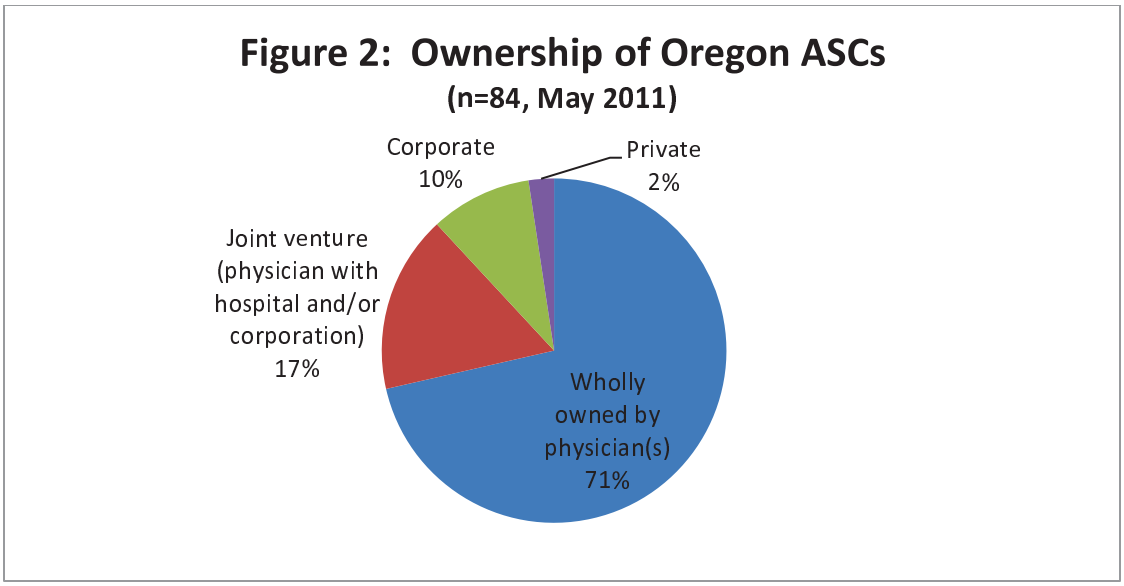
ASC Characteristics

Of the 85 ASCs operating in Oregon as of May 2011, ASCs have been in operation an average of 10 years, with one facility that opened 40 years ago and two in 2011. The majority of Oregon ASCs began operating between 1996 and 2010, during which 70 facilities opened. *Figure 1* shows the count of ASCs opened by period and the cumulative count for Oregon ASCs in operation as of May 2011.

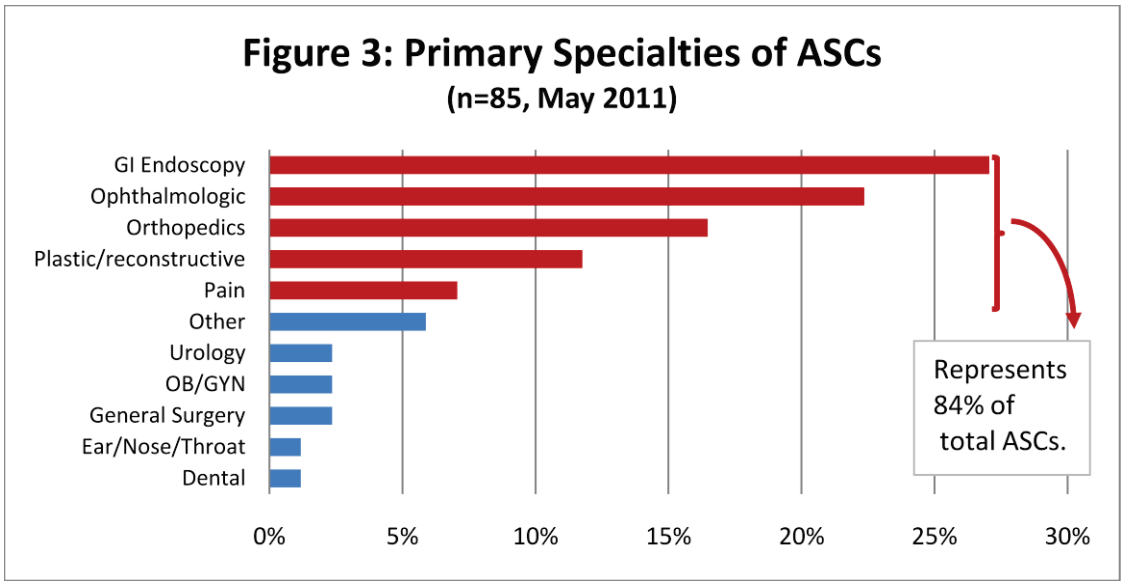


Currently, CMS recognizes four accrediting organizations that it allows to survey ASCs for CMS standards. Twenty-two percent (18) of Oregon ASCs are accredited by a federally recognized accrediting body. Twelve percent (10) are accredited by the Association for Ambulatory Health Care (AAHC), 6% (5) by the Joint Commission, and 4% (3) by the American Association of Ambulatory Surgery Facilities (AAASF). No ASC reported accreditation by the American Osteopathic Association (AOA).

ASCs have different ownership models. In Oregon, 88% (74) of ASCs have physician partners who perform surgeries in the center that own part or all of the facility (see *Figure* 2). Of these 74 ASCs, 60 (71% of total ASCs) are wholly owned by physicians and 14 (17%) are held as joint ventures with physicians, hospitals and/or corporations. Twelve percent (10) do not have physician ownership. Of these ten facilities, 8 (10% of total ASCs) are owned by a corporation and 2 (2%) are privately owned.



ASCs perform a variety of outatient procedures. When asked for their primary specialty, 25% (23) indicated gastroentestinal endoscopy, 22% (19) ophthalmalgic, 16% (14) orthopedics, 12% (10) plastic/reconstructive, and 7% (6) pain management (*Figure* 3). These five categories repesent 84% of the ASCs in Oregon. The remaining categories (urology, OB/GYN, general surgery, ear/nose/throat) each comprise less than 3% of ASCs. The "other" category include multispecialty, orthognathic, gynecology, neurosurgery, and spine surgery by neurosurgeons.



When asked if the ASC performed additional procedures beyond its specialty, all but one ASC indicated additional procedures were performed. The top four additional procedures were pain management (35%, n = 30), ophthalmologic (35%, n = 30), GI endoscopy (29%, n = 25), and

general surgery (27%, n = 23). The average ASC has 3 procedure rooms, with a range of 1 to 11 procedure rooms per ASC in the state.

ASCs were also analyzed by volume of procedures performed in the state. *Table 1* lists the top 10 principle procedures performed by ASCs in 2009 and the percentage of total procedures represented by each category. Of the top ten principle procedures (representing 37% of the total), five of them are performed by gastrointestinal (GI) ASCs and represent a quarter of ASC procedures performed in the state during 2009. This data is from a separate OHPR data collection effort, not from the survey.

Table 1: Top 10 ASC Principal Procedures, 2009[7]

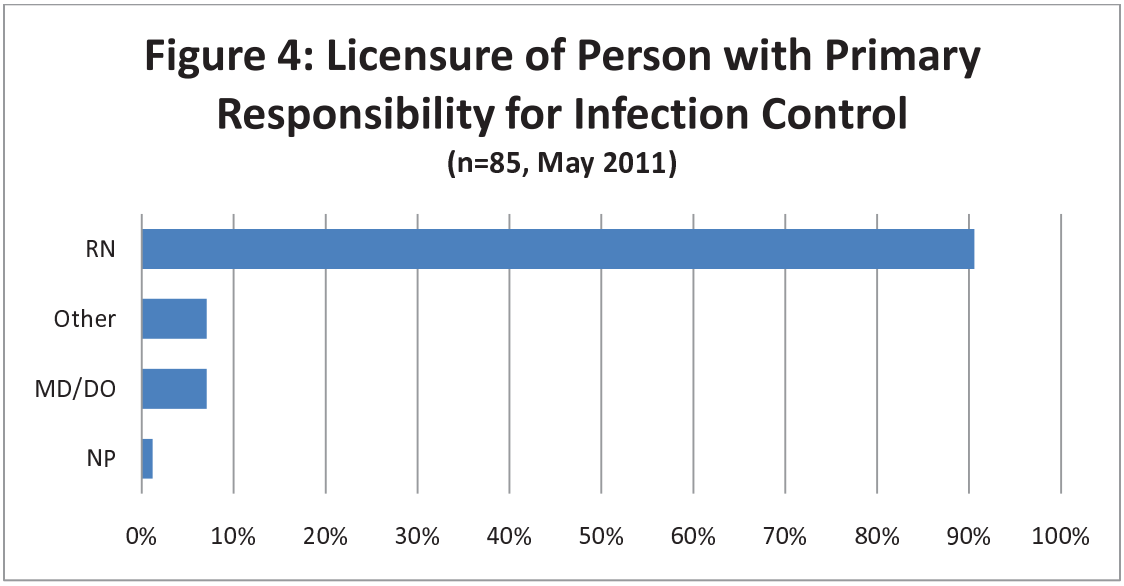
Rank	Procedure	Count	Percentage
1	Diagnostic Colonoscopy	16,262	8.5%
2	Colonoscopy and Biopsy	13,064	6.8%
3	Cataract Surgery, with Insertion of Intraocular Lens Prosthesis, 1 Stage	9,826	5.1%
4	Lesion Removal Colonoscopy	8,559	4.5%
5	Upper GI Endoscopy, Biopsy	7,793	4.1%
6	Injection Foramen, Epidural Lumbar/Sac	5,611	2.9%
7	Abortion	3,002	1.6%
8	After Cataract Laser Surgery	2,557	1.3%
9	Cystoscopy (endoscopy of the urinary bladder via the urethra)	2,519	1.3%
10	Upper GI Endoscopy, Diagnosis	1,915	1.0%

Staff Training in Infection Control

As required by state licensure, each ASC is required to have a person charged with primary responsibility for the infection control program at the ASC. Ninety-one percent (77) of Oregon ASCs have registered nurses (RN) who are responsible for infection control. Six ASCs have physicians (MD/DO) that are charge of infection control. Other responses include instrument technician, certified medical assistant, and medical technologist with American Society for

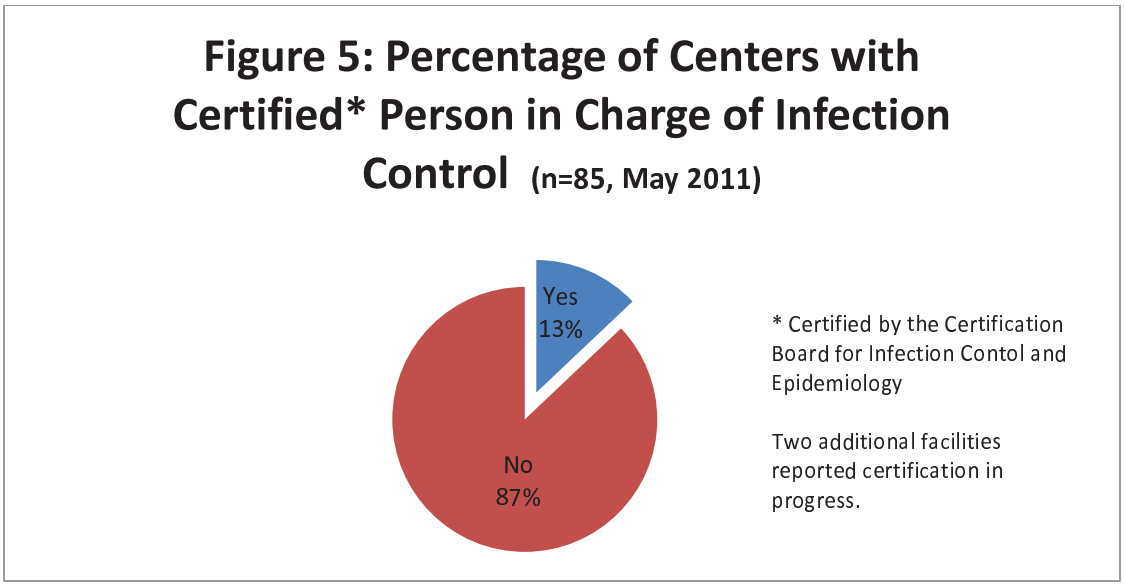
[7] Office for Oregon Health Policy and Research, Analysis of 2009 ASC Discharge Data based on data available as of June 30, 2011. Oregon Health Authority.

Clinical Pathology certification. *Figure 4* presents licenses held by the person responsible for infection control in ASCs.



Most ASCs (98%) indicated that the person responsible for infection control was an ASC employee. One ASC indicated that the person responsible for infection control was a contractor. ASCs reported that on average this person spent 6 hours per week on infection control; one ASC reported no hours spent on infection control and 18% (15) reported spending 10 or more hours on infection control per week. No relationship was noted between procedure room counts and specialty type and the hours reported spent on infection control per week.

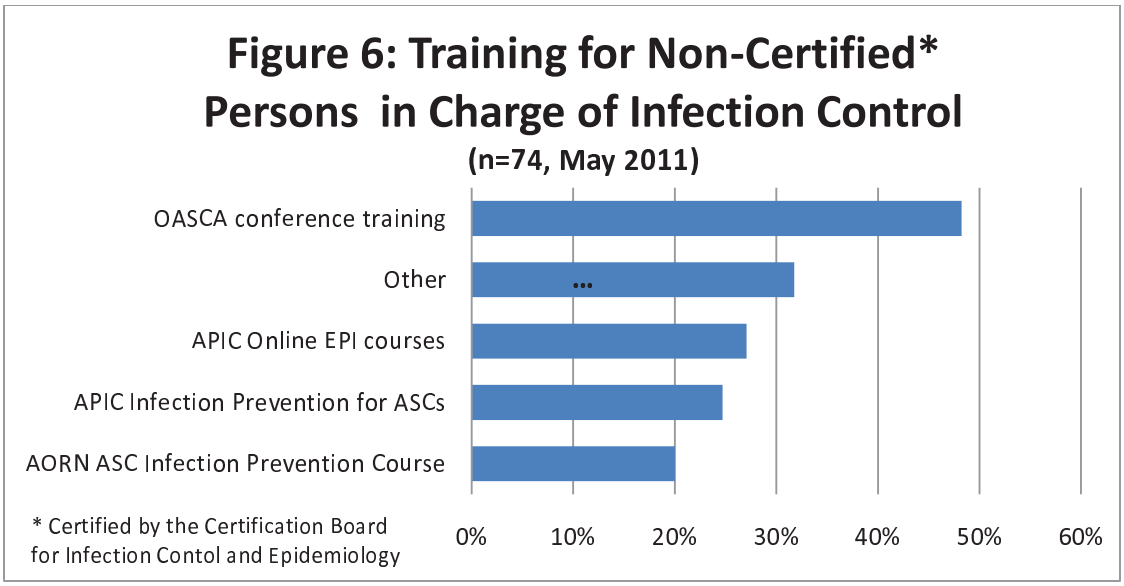
An internationally recognized standard of mastery of infection control knowledge in health care is the Certified in Infection Control certificate offered by the Certification Board for Infection Control and Epidemiology (CBIC). Of the 85 ASCs in Oregon, 13% (11) have staff with a certificate in infection control from CBIC; two additional ASCs indicate staff is in process of obtaining this certification, as noted in *Figure 5*.



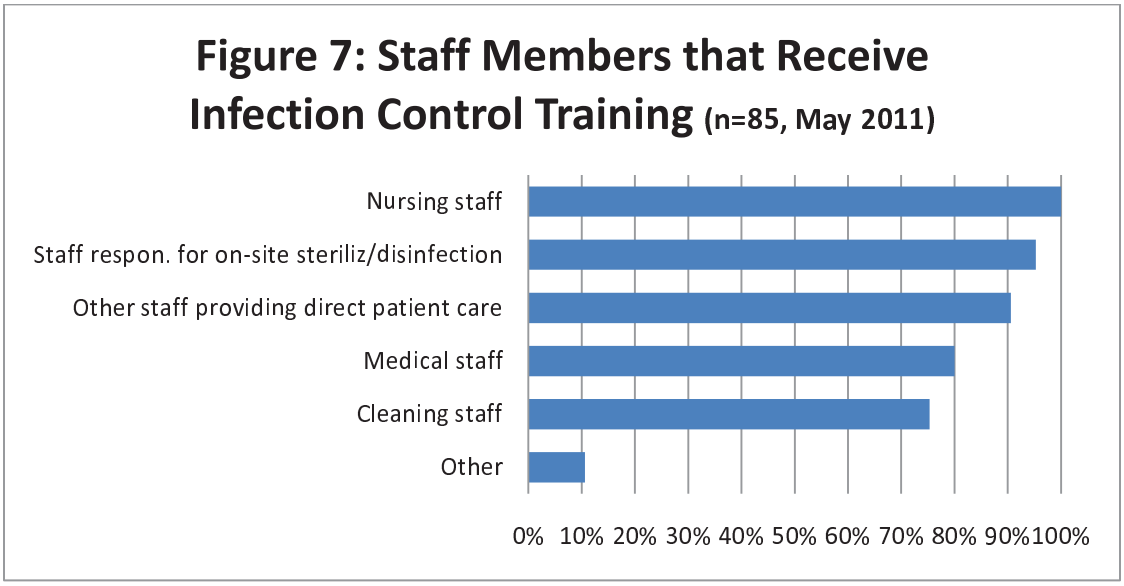
In *Figure 6*, of the 74 ASCs that do not have a certified person in charge of infection control, about half (48%, n=41) indicated they had attended an Oregon Ambulatory Surgical Center Association (OASCA) training[8]. Thirty-two percent (27) of respondents cited other infection prevention training, which included corporate and national training programs, the New York State Mandatory Training program for ASCs, other APIC trainings, and CDC and Occupational Safety and Health Administration (OSHA) training programs. Between 20 and 27% of respondents indicated they had attended professional infection control trainings, which include APIC epidemiology courses, APIC courses for infection control in ASCs, and the ASC course developed by the Association of periOperative Registered Nurses (AORN).

Four ASCs did not report participating in the standard infection control trainings. Of these ASCs, two indicated that the person in charge of infection control was new to the position and a future training program was identified; of the other two, it was listed that "RN" and "MD" consisted of their infection control training.

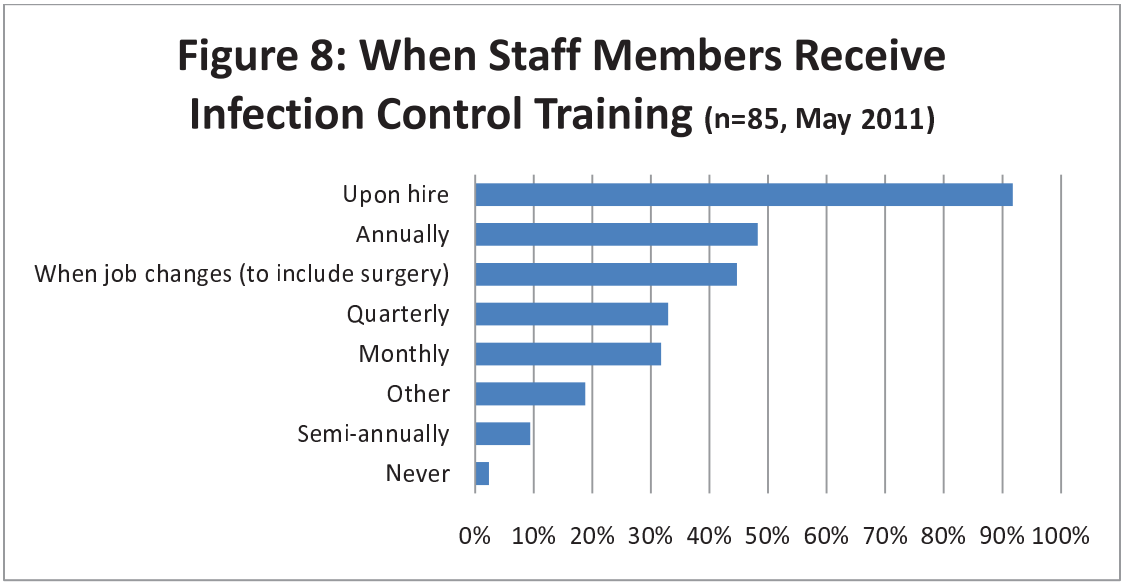
[8] It should be noted that although the Oregon Patient Safety Commission is conducting an infection control training at the OASCA conference in 2011, OASCA does not have a regular, annual infection control training program based on federally recognized standards.



Training in infection control practices extends beyond the primary person responsible for infection control. All ASCs noted that nursing staff were trained in infection control procedures. About half (42) of ASCs reported all five staff categories included in the survey were trained in infection control practices; 28% (24) reported four staff categories were trained (*Figure* 7). Higher training rates were reported for staff responsible for equipment disinfection (95%, n=81) and staff providing direct patient care (91%, n=77; see *Figure 7*). Lower rates were noted for medical staff and cleaning staff of 80% (68) and 75% (64), respectively. The "other" category included front office staff, vendors, and all staff that work in the surgery center.



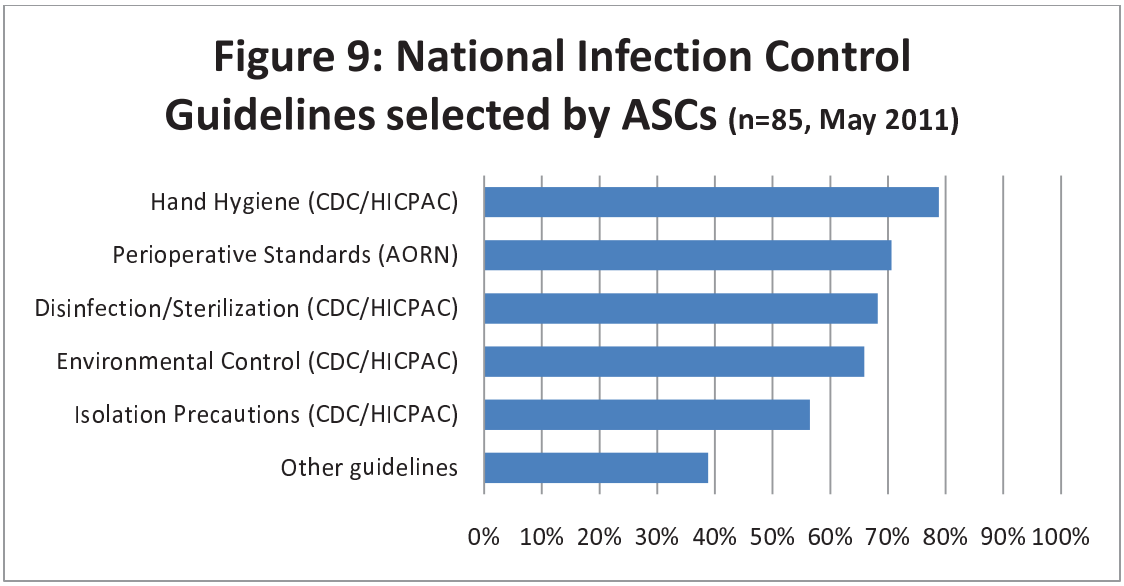
The survey included a question about when staff receive training in infection control. Ninety-two percent (78) of ASCs responded that staff were trained upon hire (*Figure 8*). With respect to the interval of training, 48% (41) indicated staff were trained annually, 33% (28) quarterly, and 32% (27) monthly. Forty-five percent (38) indicated that training occurs when a job changes to include sugery involvement. The "other" category generally represented trainings occuring more frequently than monthly, including daily, periodically, at staff meetings, and whenever new information was available or policy changed. Two ASCs responded that staff were never trained in infection control.



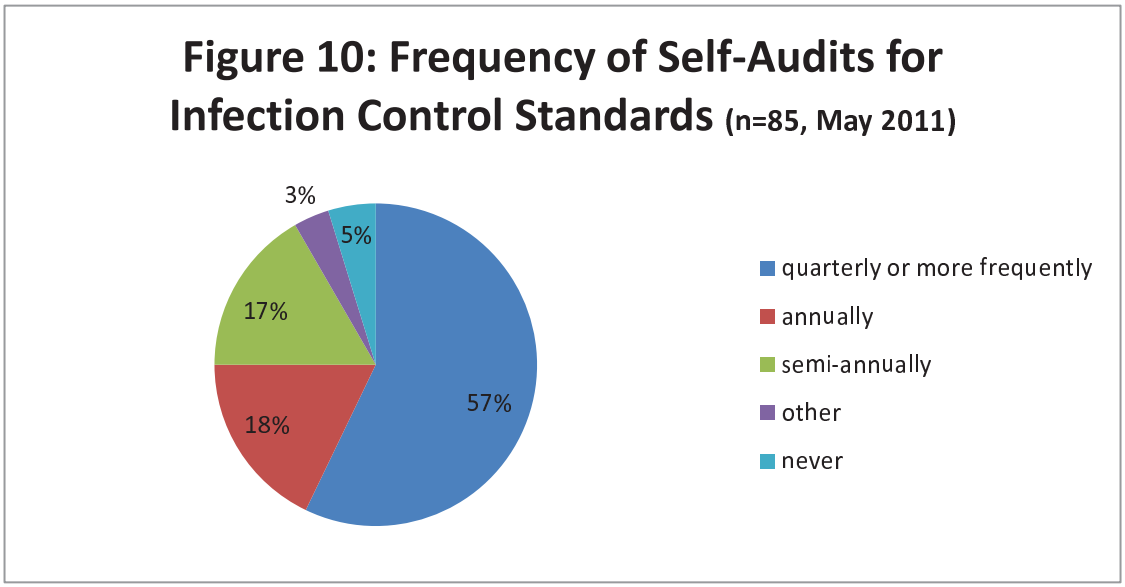
Infection Control Program

To meet state and federal guidelines, ASCs maintain an active infection control program to minimize infections and communicable diseases. Seventy-nine Oregon ASCs provided information on when its infection control program was most recently updated. On average, ASCs had updated their programs in the past seven months. The time reported since the most recent update ranged from less than one month (11 ASCs) to 23 months (1 ASC).

All ASCs reported using one or more national infection control guideline for its infection control program (*Figure* 9). Seventy-nine percent (67) indicated that they used hand hygiene guidelines issued by the Centers for Disease Control and Prevention (CDC)/Healthcare Infection Control Practices Advisory Committee (HICPAC). Between 66% and 71% cited the following CDC/HICPAC standards: Perioperative Standards for Recommended Practices, Disinfection and Sterilization in Healthcare Facilities, and Environmental Infection Control in Healthcare Facilities. In the other category, ASCs noted a number of other guidelines, most notably APIC (16%; n=14), Society of Gastroenterology Nurses and Associations (SGNA; 13% n=11), and Association for the Advancement of Medical Instrumentation (AAMI; 12%, n=10).

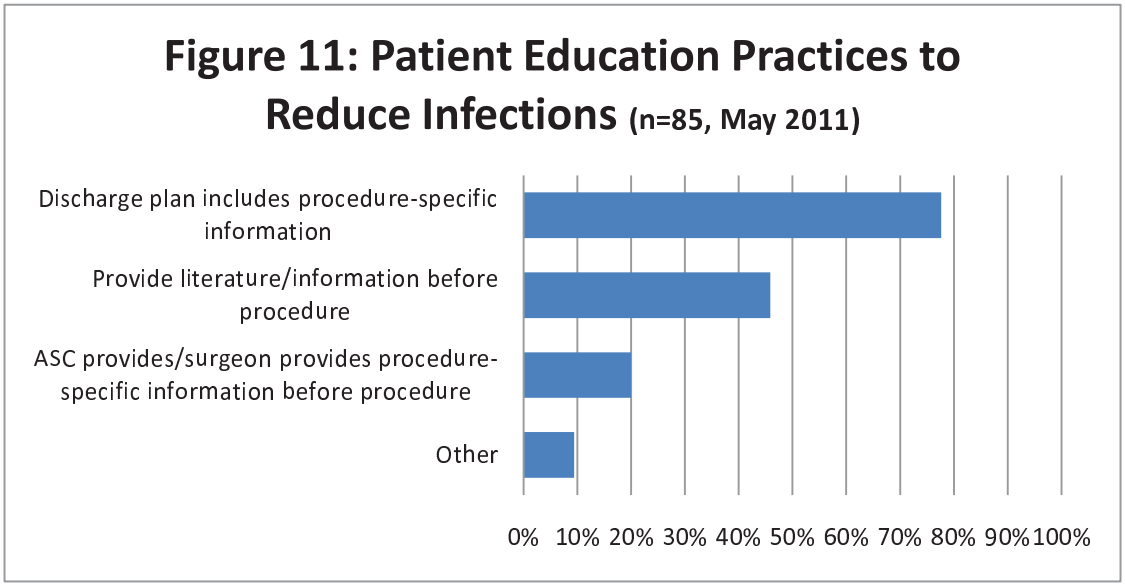


One recommendation of the HHS Action Plan for ASCs to prevent HAI is to conduct self-audits on infection control practices using the CMS Audit Tool. Ninety-five percent (80) of ASCs report they conduct infection-control self-audits, and the most frequently reported interval is quarterly or more frequently (57%, n=48; *Figure* 10). Four ASCs indicated they have never conducted a self-audit for infection control.

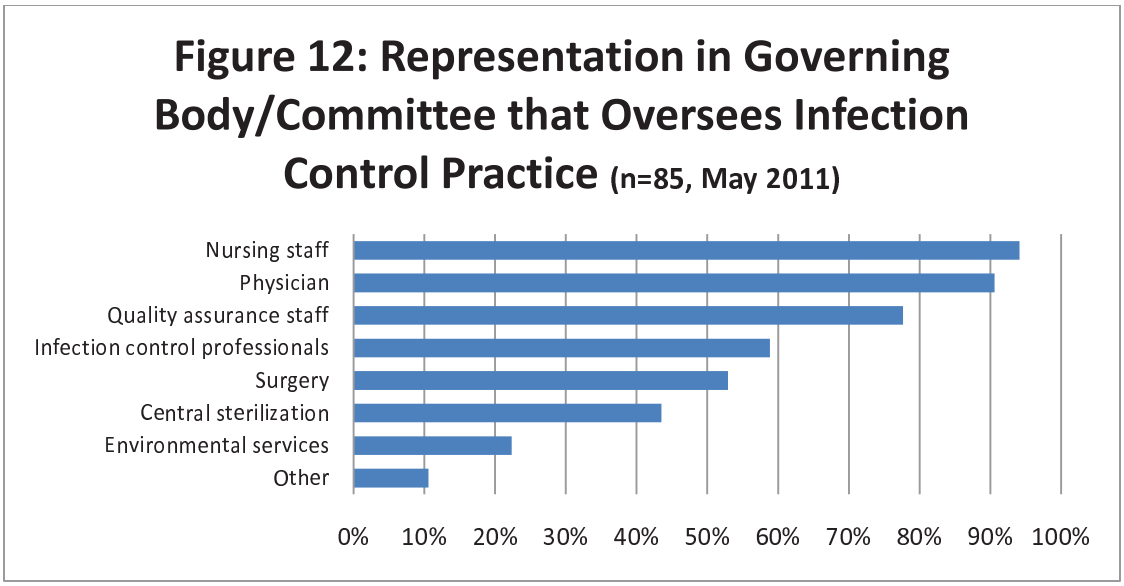


Most ASCs (69%, n=59) are using the CMS tool for self-audits. About one-third (31%; n=26) are using other tools, which include those created by professional societies, such as AAASF, OSHA, AAHC, as well as the CDC hand hygiene and safe injection practices, and the AORN Perioperative Competencies. Twelve ASCs report using self-created tools.

Most (78%, n=66) ASCs educate patients about methods to reduce infections after the procedure in its discharge plan (*Figure* 11). Forty-six percent (39) report two or more methods to educate patients. About half (46%, n=39) of ASCs provide general literature to patients before the procedure, and 20% (17) provide procedure-specific information regarding infection prevention before the procedure. Other education methods were noted as computer-based education modules, infection prevention literature (i.e., regarding hand hygiene and droplet transmission) in the preoperative area, and providing chlorhexidine scrub and instructions for its use before the procedure.



Ninety-five percent (81) of ASCs have a written plan in place to respond to an infection outbreak. Four ASCs reported they did not have such a plan. ASCs also reported on the groups/organizations that are represented in the committee that oversees infection control for its facility. Most ASCs reported nursing staff (94%, n=80) and physicians (91%, n=77) were represented on this committee (see *Figure 12*). A majority reported participation by quality assurance (78%, n=66), infection control professionals (59%, n=50) and surgery (53%, n=45). The "other" category included anesthesia services and clinical directors.



Infection Control Practices

In this section of the survey, ASCs reported on specific infection control practices, such as policies for the use of gloves and equipment decontamination (see *Table 2*). Seventy-six percent (65) of ASCs provided answers consistent with federal guidelines for infection control. Twenty ASCs provided answers that are outside the standard scope of practice. Out of the 13 categories of practice, 85% (11) contain responses that are outside the scope of standard practices; these responses are flagged in red in *Table 2.*

Table 2: Infection Control Practices Reported by ASCs (n=85, May 2011)

Infection Control Practice	Never	Rarely	Sometimes	Often	Always	Not Applicable
Staff wear gloves for procedures that might involve contact with blood or bodily fluids	0	0	0	1	83	1
Staff wears gloves when handling potentially contaminated patient equipment.	0	0	0	3	81	1
Staff remove gloves before moving to next task or patient	0	0	0	4	80	1
Needles and syringes are	0	0	0	0	84	1

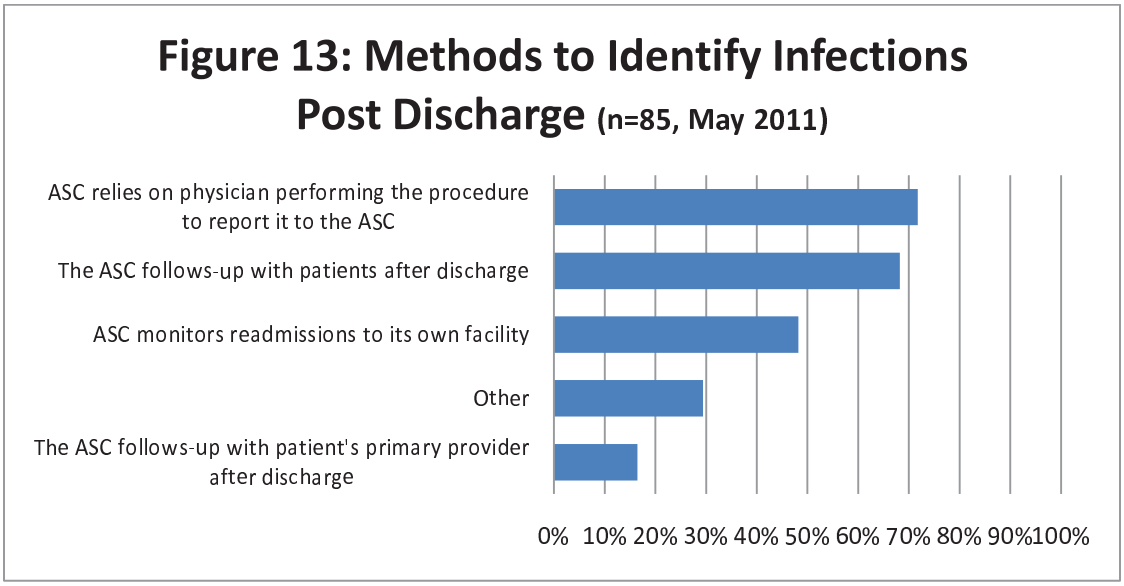
Table 2: Infection Control Practices Reported by ASCs (n=85, May 2011)						
Infection Control Practice	**Never**	**Rarely**	**Sometimes**	**Often**	**Always**	**Not Applicable**
used for only one patient						
Medication vials are always entered with a new needle/new syringe	0	0	0	0	83	1
Single-dose medications used for more than one patient	74	5	3	0	1	2
Prefilled syringes used for more than one patient	76	0	1	0	1	7
High-level disinfectants prepared, tested, and replaced according to manufacturer's instructions	0	0	0	2	71	12
Medical devices and instruments are inspected for visual soil and re-cleaned before high-level disinfection.	1	0	0	1	74	9
Operating rooms are cleaned and disinfected after each surgical or invasive procedure with an EPA-registered disinfectant	1	0	0	2	77	5
Operating rooms are terminally cleaned daily	1	1	1	3	74	5
The glucose meter is cleaned and disinfected after every use	1	0	0	0	78	6
A new single-use auto-disabling lancing device is used for each patient	1	0	0	0	75	9

Post-Discharge Surveillance

"Epidemiologists often say 'You can't prevent what you can't measure.' When it comes to healthcare associated infections, we know this holds true."[9] An ASC faces apparent challenges in measuring infections associated with its procedures. Because patients are only in the ASC for a short period of time, ASCs are required to collect information after the patient's discharge to identify infections associated with the procedure. The final section of the survey covers the post-discharge surveillance practices. This section includes questions on methods to collect data post discharge, definitions used to identify infections, and metrics collected and reported.

Methods to Collect Data Post Discharge

When asked about the main methods to identify post-discharge infections, the majority (72%; n=61) of ASCs reported that they rely on the physician performing the procedure to report it back to the ASC (see *Figure 13*). Sixty-eight percent (58) report they also follow-up with the patient. About half (48%; n=41) of ASCs report monitoring readmissions to its facility. Six facilities reported that the physician's offices were attached to the ASC, and regular meetings were held to discuss patient follow-up issues. Four ASCs reported that they exchanged patient lists with surgeons, and seven ASCs reported that they follow-up procedures with physicians.



9 Dr. Arjun Srinivasan, MD, Associate Director for Healthcare-Associated Infection Prevention Programs, Center for Disease Control and Prevention, Division of Healthcare Quality Promotion. Viewpoints: How can caregivers reduce hospital-acquired infections? The Atlanta Journal Constitution, June 28, 2011, p. 11.

ASCs were additionally asked to report on three specific post-discharge surveillance methods:

- Patient surveys: in which a patient is contacted by phone, email or postal mail and asked if any infection has occurred post discharge.
- Surgeon surveys: in which the ASC surveys the surgeon via phone, email or postal mail regarding any infections that have occurred for patients during a specific time period.
- Surgeon lists: in which the ASC sends the surgeon a list of patients and has the surgeon sign off by each patient name if an infection has or has not occurred.

Table 3 summarizes the results of this section of the survey. It includes the counts of methods reported by each ASC, the interval at which it conducted the method, and the response rates.

Post-Discharge Survey Methods (May 2011)			
	Patient Surveys	**Surgeon Surveys**	**Surgeon Lists**
How many facilities reported using this method?			
Count	39	47	46
How often do you sent out your survey?			
Weekly	11	4	3
Monthly	6	34	38
Semiannually	2	2	0
Other (typically daily)	20	7	5
What is the return rate for the survey?			
Average	62%	86%	94%
Min	10%	0%	0%
Max	100%	100%	100%
How many prompts are sent to improve the return rate?			
None	25	13	11
One	11	10	10
Two or more	3	24	25

This section of the survey indicates:

- Seventy-eight percent (66) of ASCs reported using one or more of the three methods noted above. Of the total 85 ASCs, 46% conduct patient surveys; 55% conduct surgeon surveys, and 54% exchange patient lists.
- Patient surveys were most often conducted on a daily basis. These surveys also had the lowest return rate and typically ASCs did not send prompts to increase the return rate.

Twenty-two percent (19) ASCs reported using a patient survey in combination with either a surgeon survey or patient list exchange with surgeons.

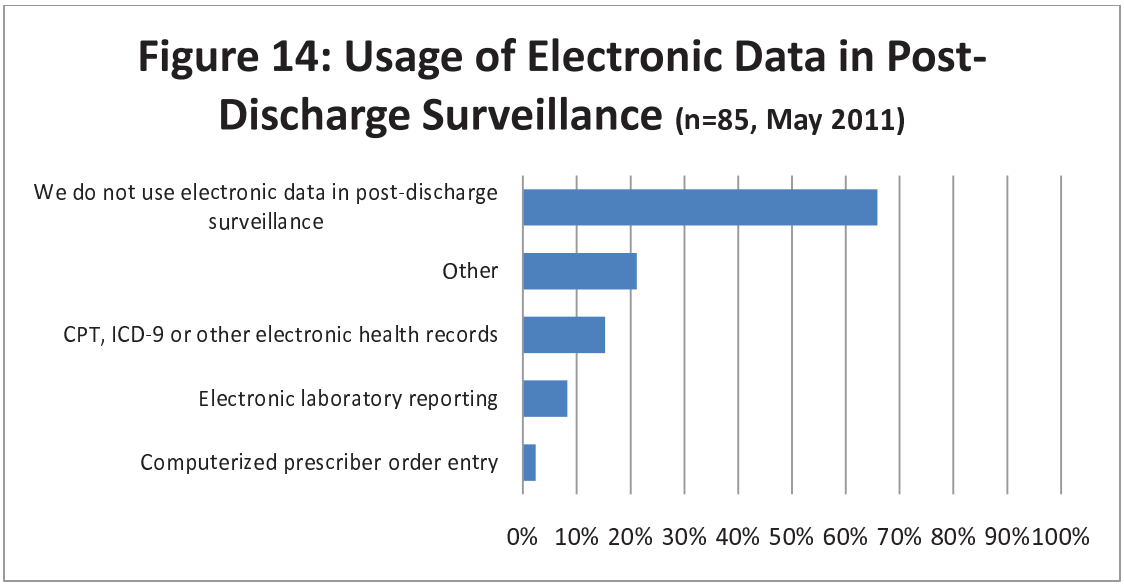
- Surgeon surveys and the exchange of patient lists with surgeons most often occurred on a monthly basis, had a higher return rate than patient surveys, and more often had two or more prompts to increase the return rate. Sixty-eight percent (55) of ASCs reported using either a surgeon survey or exchanging patient lists with surgeons.

The relationship between the use of prompts to complete surveys and return rates was also evaluated (See *Table* 4). This analysis shows that in general return rates increase with the use of prompts. Patient surveys increased from a 56% return rate with no prompts to over 70% with the use of prompts. Surgeon surveys increased from a 70% return rate to over 95% for facilities that used two or more prompts. The return rate for the exchange of patient lists was over 90% whether or not prompts were used; the highest return rate (98%) was noted for facilities that used one prompt.

Table 4: Use of Prompts and Return Rates in Surveys (May 2011)

	Patient Surveys		Surgeon Surveys		Surgeon Lists	
	Return Rate	N	Return Rate	N	Return Rate	N
No Prompts	56%	25	70%	13	90%	11
One Prompt	71%	11	84%	10	98%	10
Two or More Prompts	76%	3	95%	24	94%	25

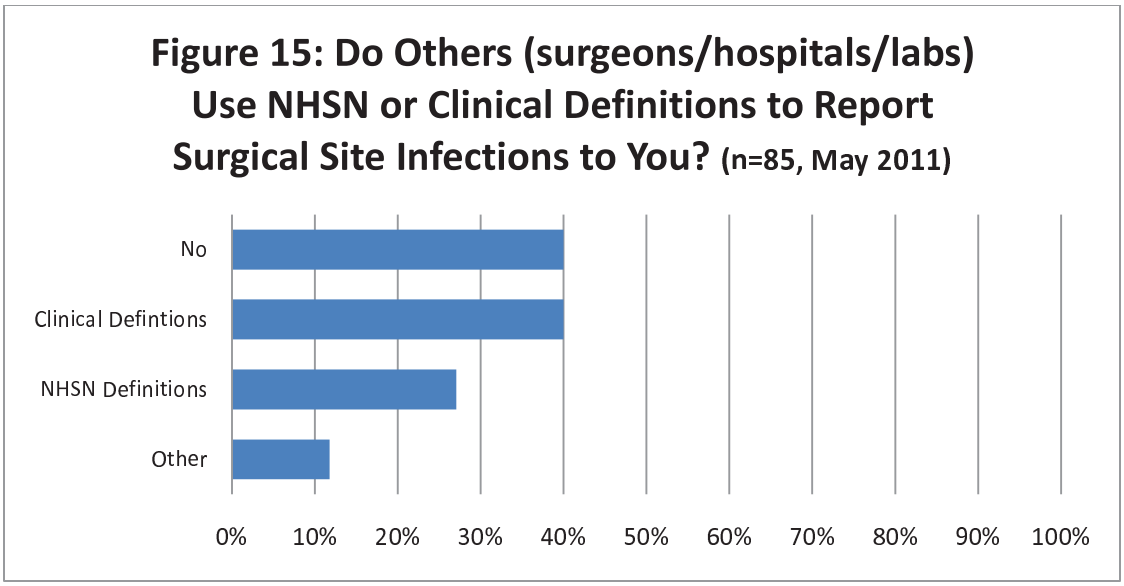
In addition to these survey methods, ASCs were asked if they collected post-discharge surveillance data with electronic systems. Sixty-six percent (56) of ASCs noted they did not use an electronic data system to track post-discharge infections. Fifteen percent (13) noted the use of electronic health records (e.g., CPT, ICD-9) and 8% (7) noted the use of electronic lab reporting. In the "other" category, five ASCs reported the use of electronic medical records, four the use of other commercial tracking programs, three paper or spreadsheet systems, and two the use of an electronic trigger tool. Additional methods are provided in *Figure 14*.



Definitions used for Infections

For our hospital-based reporting system, OHPR uses the CDC's National Healthcare Safety Network (NHSN) to conduct surveillance for healthcare associated infections. Sixty-five percent (55) of ASCs noted that they did use NHSN definitions to define surgical site infections.

The ASC was also asked if others, such as surgeons, hospitals, laboratories, use NHSN or clinical definitions to report infections to the ASC (*Figure 15*). In response, 40% (34) of ASCs stated that others used clinical definitions and 40% (34) stated neither NHSN nor clinical definitions were used. Twenty-seven percent (23) indicated that others used NHSN definitions to report infections to them. Ten ASCs reported other definitions were used; in this section, respondents noted that it was not known the definitions that were used, or a combination of NHSN and clinical definitions that were used. One ASC cited American Society for Gastrointestinal Endoscopy **(**ASGE) standards.



ASCs were also asked for the time period post-discharge that surveillance was conducted for infections related to the procedure. The NHSN standard is the surveillance is to be conducted for one month for infections post-discharge without implants and one year for procedures with an implant.[10]

Fifty-one percent (43) ASCs reported conducting surveillance for one month after the procedure for procedures without implants (*Table* 4), in accordance with federally recognized standards. Twenty-one percent (18) reported they did not conduct surveillance. Of these 18 facilities, six reported they rely on physicians to report infections to them, five noted they had office-based ASCs and regular case review is conducted for infections, and two noted this question was not applicable to them. One ASCs noted that with spinal injections infections are evident within 3 days and this clinic performs regular self-audits. Two facilities noted surveillance was not applicable to their facility.

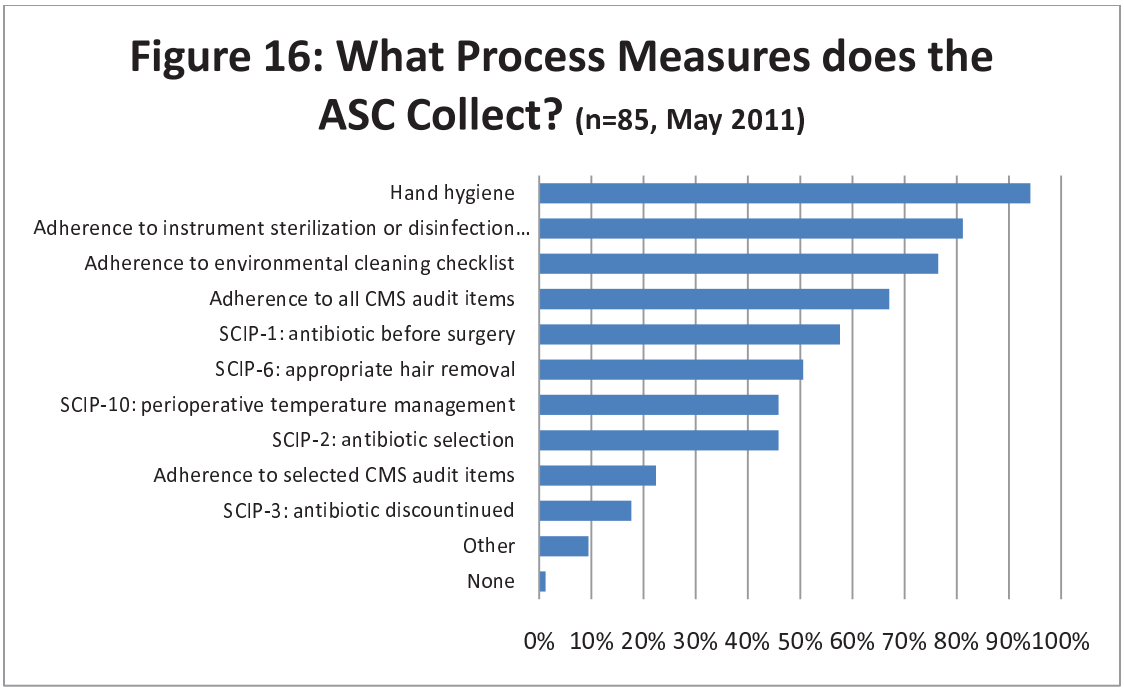
Of the 85 facilites surveyed, 15 were identified as not performing procedures with implants and were excluded from the data set. Forty-seven percent (33 of 70) reported conducting surveillance for one year for surgeries with implants, in accordance with federally recognized standards. Twenty-one percent (15) reproting conducting surveillance for one month and 10% (7) for one week. Sixteen percent (11) reported not conducting surveilliance.

10 The NHSN definition of an implant: "a nonhuman-derived object, material, or tissue that is permanently placed in a patient during an operative procedure and is not routinely manipulated for diagnostic or therapeutic purposes. Examples include but are not limited to: porcine or synthetic heart valves, mechanical heart, metal rods, mesh, sternal wires, screws, cements, and other devices."
http://www.cdc.gov/nhsn/PDFs/pscManual/16pscKeyTerms_current.pdf. Implants also include lenses.

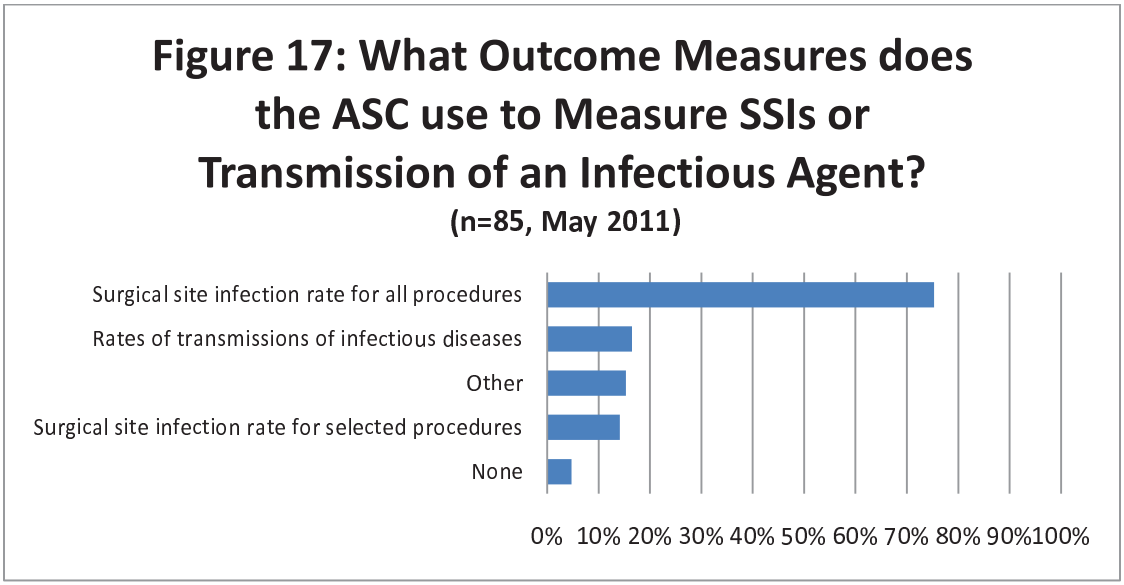
Table 4: Surveillance Periods for Surgical Procedures with and without Implants (May 2011)				
	ASC Surveillance for surgical site infections without implants (n=85)		**ASC Surveillance for surgical site infections with implants (n = 70; 15 facilities reported not performing surgeries with implants)**	
Yes, for at least one week after the procedure	12	14%	7	10%
Yes, for 2 weeks after the procedure	2	2%	0	0%
Yes, for 30 days after the procedure	43	51%	15	21%
Yes, for 3 months after the procedure	5	6%	4	6%
Yes, for 6 months after the procedure	1	1%	0	0%
Yes, for 1 year after the procedure	4	5%	33	47%
No	18	21%	11	16%

Metrics Collected and Reported

ASCs reported on process and outcomes measures that were collected related to infection control. All ASCs reported collecting at least one process measure; 8% (7) reported one process measure; 78% (66) reported two measures, and 13% (11) reported collecting three or more process measures (*Figure* 16). Ninety-four percent (80) of ASCs reported collecting data on hand hygiene using either the observation or product use method. High rates were also reported for adherence to an instrumentation sterilization/disinfection checklist (81%), to an environmental cleaning list (76%) and to all CMS audit items (67%). Fifty-eight percent (49) ASCs report the Surgical Care Improvement Project (SCIP) measure 1 regarding prophylactic use of an antibiotic and 51% (43) report reporting SCIP-6 regarding appropriate hair removal. *Figure* 16 provides additional details on process measures collected by the ASCs.



Eighty-nine percent (76) ASCs reported collecting one or more outcome measures related to surgical site infections or transmission of infectious agents. Seventy-five percent (64) of ASCs reported collecting surgical site infection rates for all procedures and 16% track rates of transmission of infectious diseases (see *Figure 17*). In the "other" category, ASCs noted that infections are rare events and two ASCs noted that any occurrence of infection that is related to a procedure is reported.



Thirty-one percent (26) of ASCs noted that their post-discharge surveillance system revealed cases of post-discharge infection that would not have been counted without surveillance. Twenty-six percent (22) reported that its post-discharge surveillance program did not reveal cases of infection that were not accounted for in other methods. Twenty-one percent (18) ASCs reported never identifying a post-discharge infection, and six ASCs (7%) reported not having a post-discharge surveillance program.

Ninety-two percent (78) of ASCs report providing these process and outcome measures to others. The highest rates were reported for sharing this data with the ASC's governing body (84%; n=71), surgeons (82%; n=70), nurses (78%, n=66), and ASC's other staff (67%, n=57). Lower rates were reported for the ASC's accrediting body/regulatory agency (33%; n=28) and ASC patients (15%; n=13). Thirteen ASCs noted additional reporting to data, including internal and public web sites, the Patient Safety Commission, Medical Executive Committee. One ASC noted it uses its data with its insurance carriers.

The final question of the survey asked if a patient were ever admitted to the ASC with an infection related to a procedure conducted at another facility. Twenty-two percent (19) responded affirmatively. Of those 19 ASCs, 12 reported the infection to the facility of the original surgery.

CONCLUSIONS

This is the first report in Oregon to provide information on infection control practices in all 85 ASCs in the state. The data in the survey are self-reported by the ASCs, and are not validated.

This report indicates that current ASCs in the state have been in operation for an average of 10 years, and that ASCs provide a broad array of surgical procedures. The majority of ASCs specialize in providing GI endoscopy, ophthalmologic, orthopedic, and pain management services. This conclusion is supported by analysis of ASCs by both specialty type and volume of procedures.

In the majority of ASCs, the infection control program is directed by registered nurses. Thirteen percent of ASCs have infection control directors that are nationally certified in infection control programs, and two additional ASCs have individuals completing coursework to obtain this certification.

There is no consistency in infection control training, including the curriculum, who is trained, and when training occurs. Patients are not pro-actively involved in infection prevention. Most ASCs are educating patients about infection prevention in post-discharge instructions. One ASC

reported posting infection prevention literature in pre-operative areas, and one ASC reported providing chlorhexadine scrub to patients preoperatively for open surgical procedures.

When reporting infection control practices, 11 out of 13 standards include responses outside the standard scope of practice. The standards that most ASCs include in their infection control program are those for hand hygiene, perioperative standards, and disinfection and sterilization. Most ASCs (95%) are conducted self-audits for adherence to infection control practices and conduct these audits quarterly or more frequency (57%). Although 69% of ASCs report using the CMS tool, it is not used consistently in the state.

ASCs do not share a common definition to identify infections. Sixty-five percent of ASCs stated they followed NHSN definitions; however, when asked how others (such as other physicians, labs, or hospitals) report infection to the ASC, only 27% reported NHSN definitions were used. In addition, although 65% of ASCs stated they use NHSN definitions, these ASCs did not consistently report follow-up surveillance periods consistent with these definitions.

There is low usage of electronic data surveillance systems to conduct follow-up surveillance. Sixty-five percent (56) of ASCs stated they did not use electronic data systems post-discharge. Seventy-two percent of ASCs rely on physicians to report infections to the ASC, and 68% report that they follow-up with patients. The majority of ASCs report using one or more of the following post-discharge survey methods: patient surveys, surgeon surveys or exchanging patient lists with a surgeon.

ASCs appear to collect a wider range of process measures than outcome measures. Most frequently, they are collecting hand hygiene, adherence to sterilization/disinfection checklist and adherence to environmental cleaning checklists. Some ASCs are collecting SCIP data; SCIP 1 (prophylactic antibiotic use) and SCIP-6 (appropriate hair removal) are most often collected. In terms of outcome measures, 70% report collecting SSIs for all procedures, and 16% reporting collection of transmission of infectious agents.

The Healthcare Acquired Infection (HAI) Advisory Committee will review the results of this report to consider the following issues:

1. Reporting of infections for selected procedures based on morbidity/mortality and volume in the state.
2. Making recommendations regarding consistent and regular infection control training standards for all ASC staff.
3. The use of standard federally recognized infection control definitions and measurement tools.
4. Dissemination and reinforcement of standard infection control practices.
5. Standards for infection prevention in patient education and discharge reports for all ASCs.

6. While considering the differences among specialty types of ASCs, the communication of standards in the use of data and reporting of process and outcome measures within the ASC.

Oregon Healthcare Worker Influenza Vaccination Rates

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August 2011

Oregon Health Authority

Office for Oregon Health Policy & Research

Background

- The collection and reporting of healthcare worker (HCW) influenza vaccination rates is part of the Healthcare Acquired Infection Reporting Program.
- OHPR has collected HCW influenza vaccination rates for hospitals and long-term care facilities for the 2009-2010 and 2010-2011 flu season.
- Plan to collect from ambulatory surgical centers for the 2011-2012 flu season.

Survey Methods

- Sources to develop the survey include the CDC's healthcare worker (HCW) survey and HICPAC guidance on best practices for improving HCW vaccination rates
- Surveys were distributed to Human Resource Directors of hospitals/Administrators of long-term care facilities via Survey Monkey.
- Response Rates:

	Hospitals	Long-Term Care
2009-2010	100% (60)	100% (140)
2010-2011	100% (60)	100% (141)

Healthcare Worker Definition (2009-2010)*

All paid and unpaid persons working in health-care settings who have the potential for exposure to patients and/or infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air.

* Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP) definition of healthcare workers.

Healthcare Worker Definition (2010-2011)*

- Employees: all persons who receive paycheck from facility
- Non-Employees, Credential: licensed independent practitioners (physicians, advanced practice nurses, physician assistants)
- Non-Employees, Others: students/trainees and volunteers

* Definition from the Centers for Disease Control and Prevention.

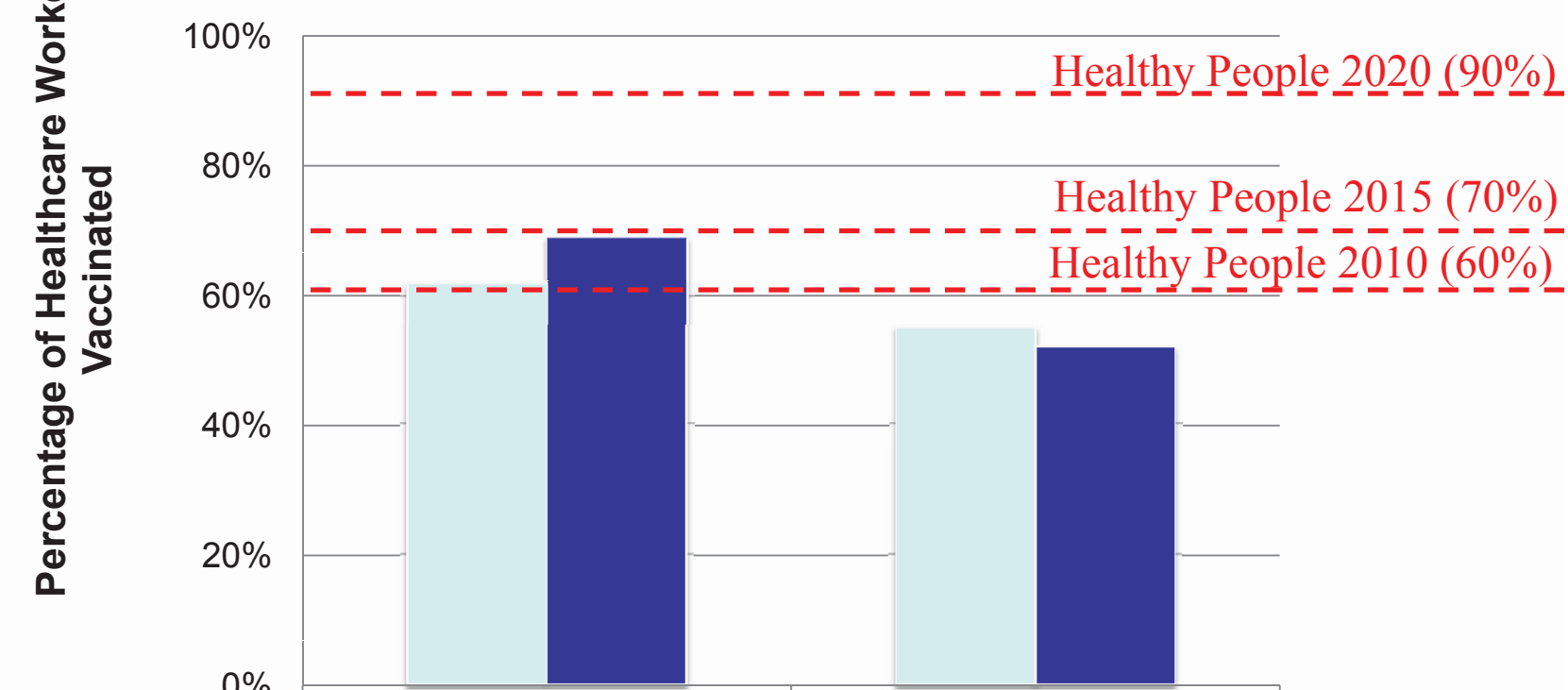
Ability to Report Vaccination Rate

	Hospitals	Long-Term Care
2009-2010	100% (60)	81% (113)
2010-2011*	98% (59)	91% (128)

*draft data; refers to “employees” category only.

Vaccination Rates

(n=60/59 hospitals and 113/126 long-term care facilities for 2009-10 and 2010-11 seasons, respectively)

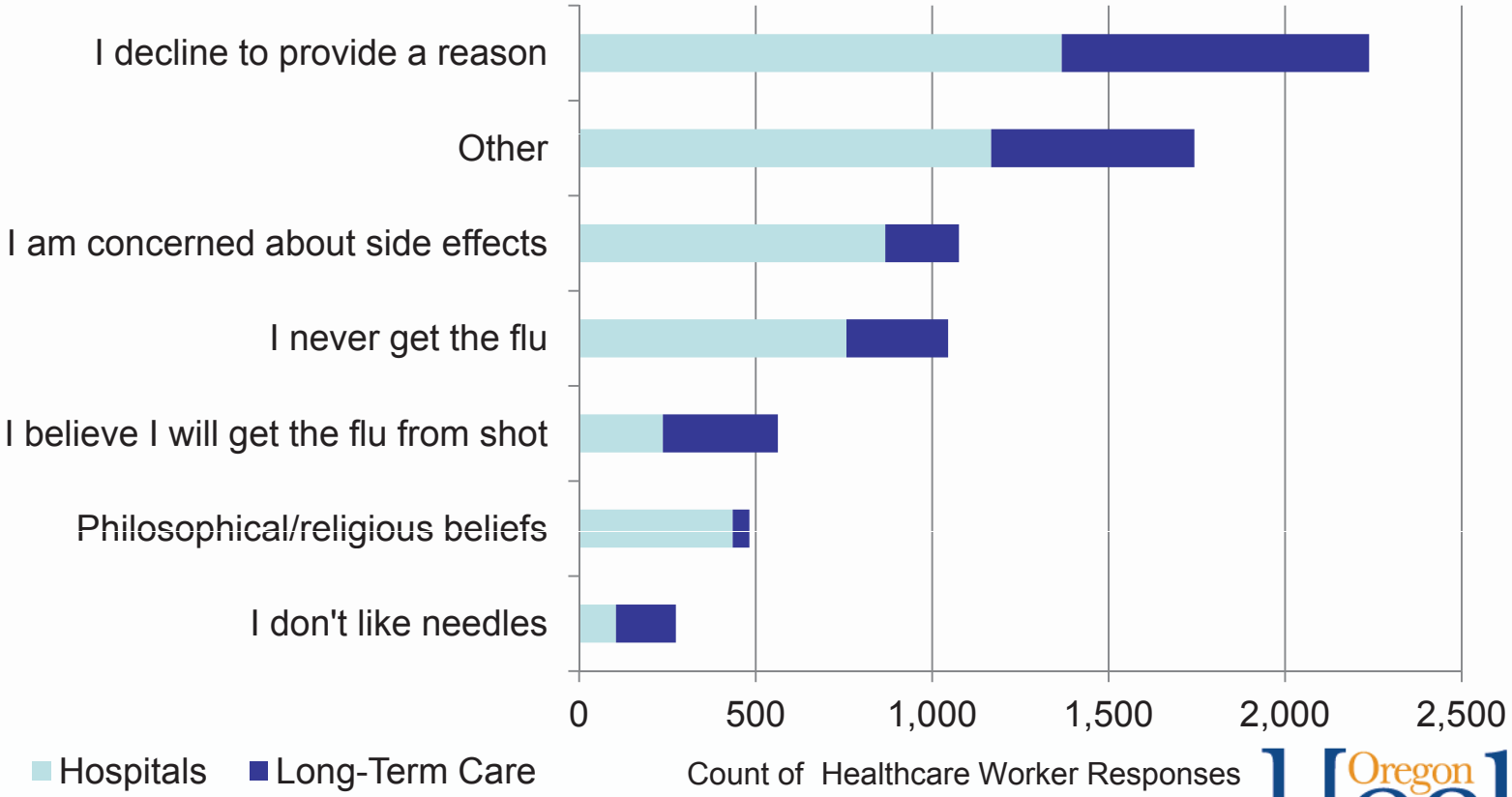


	Hospitals	Long-Term Care
2009-2010	62%	55%
2010-2011*	69%	52%

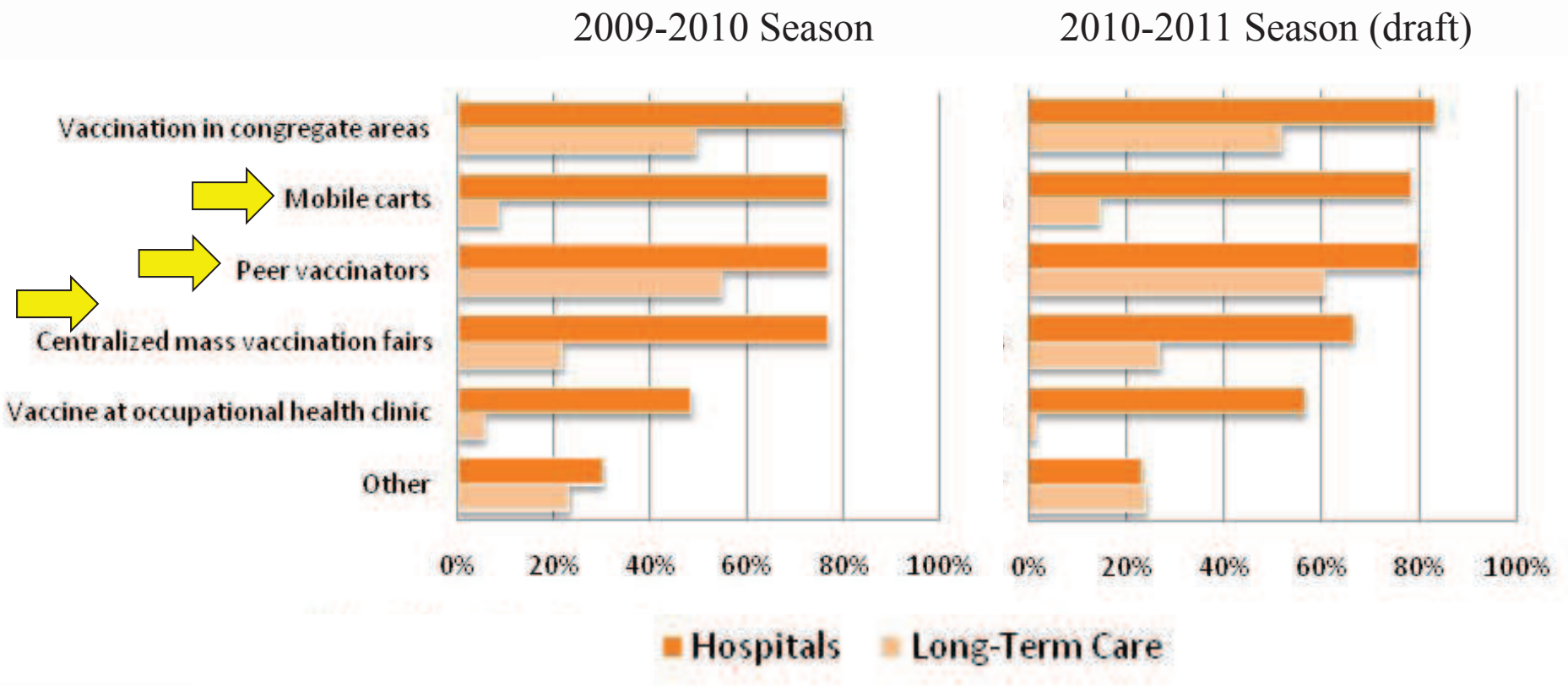
* draft data; only refers to "employee" category.

What about those Who Refuse to be Vaccinated?

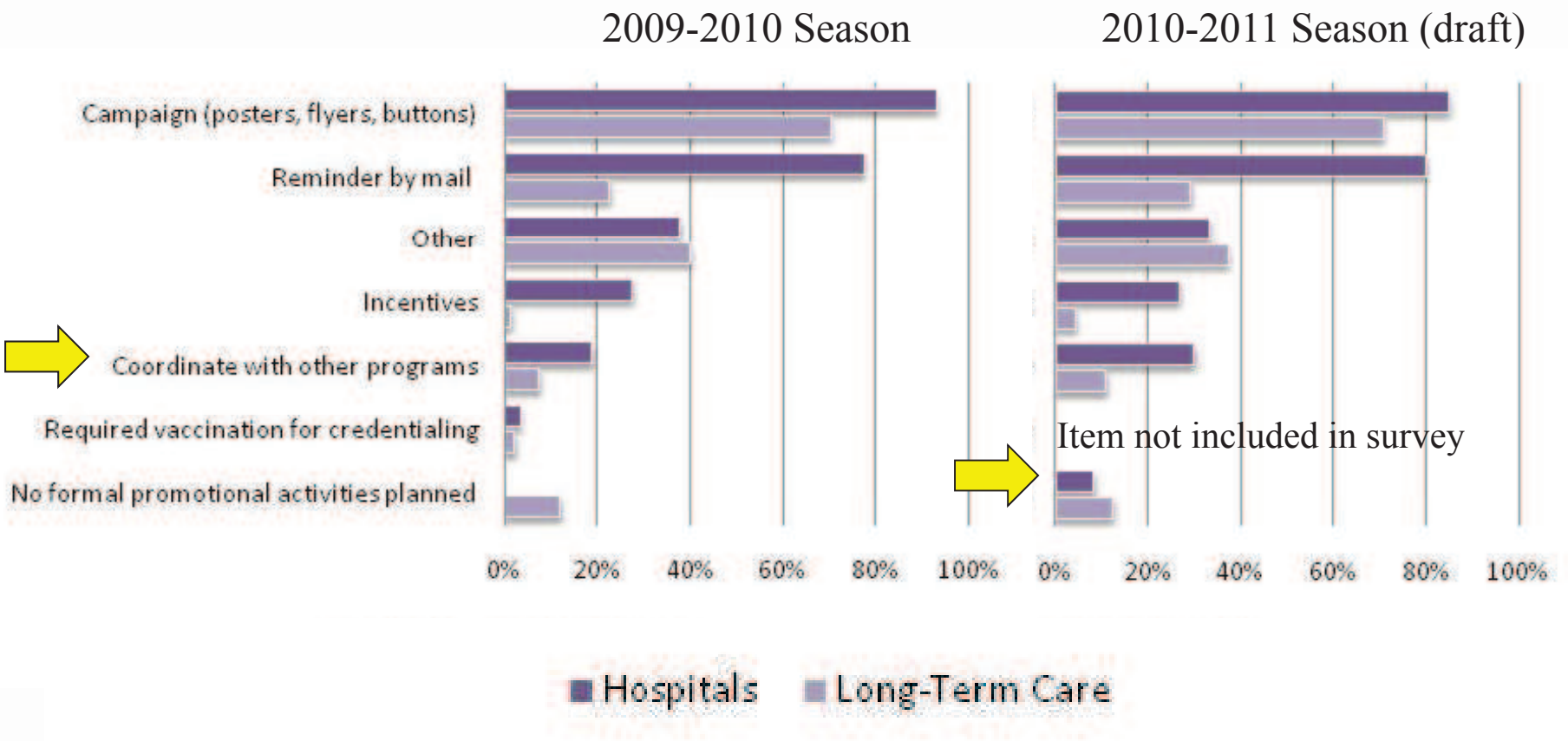
(n = 37 hospitals and 55 long-term care facilities, 2010-2011)



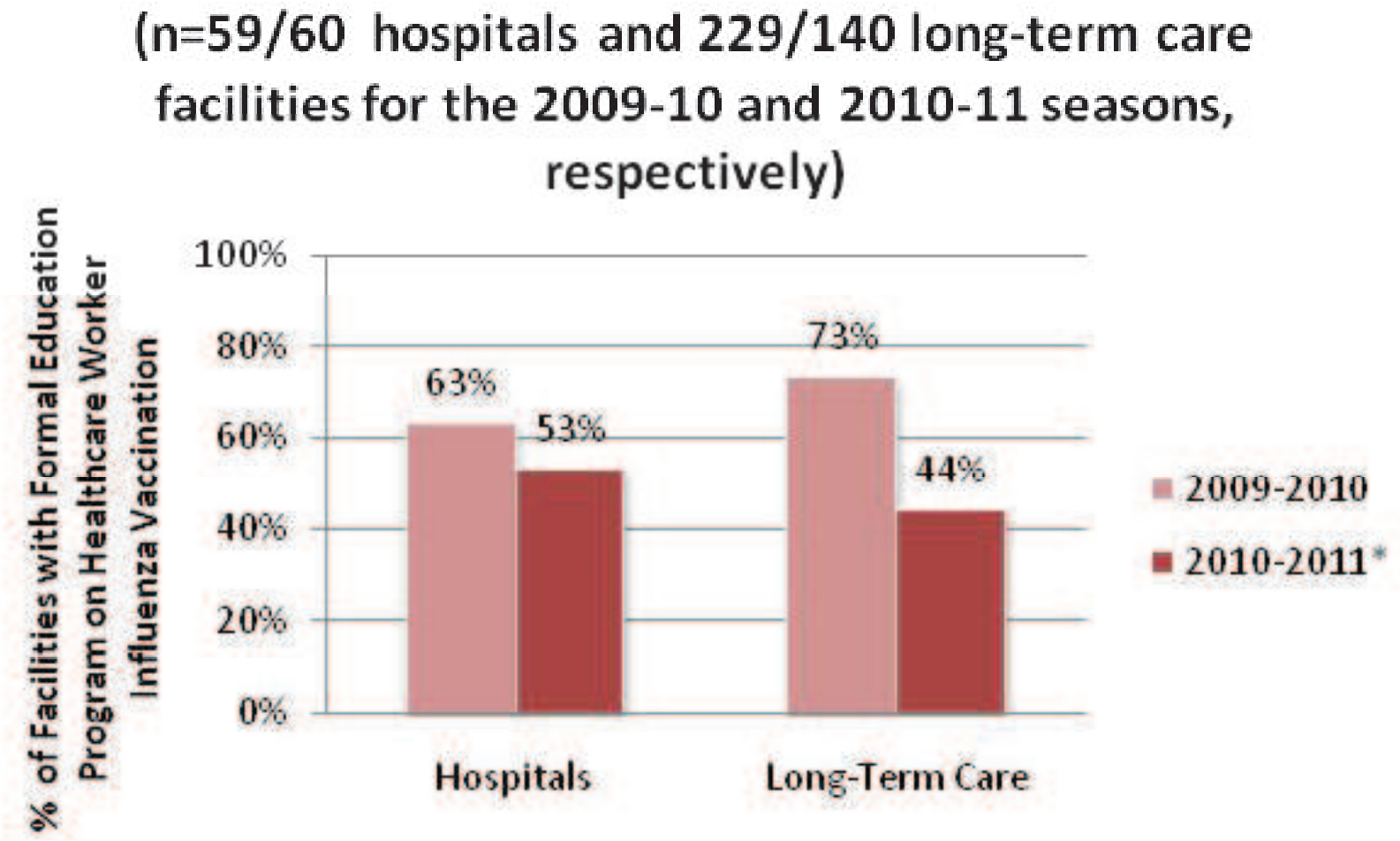
Vaccination Delivery Methods



Vaccination Promotion Methods



Formal Education on Healthcare Worker Vaccination Decreased



Questions

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Oregon HAI Program Web Site
http://www.oregon.gov/OHPPR/Healthcare_Acquired_infections.shtml

Office for
Oregon Health Policy and Research

Healthcare Worker Influenza Vaccination Rates

Hospitals and Long-Term Care Facilities
2009-2010

August 2011

Oregon Health Authority

Table of Contents

Executive Summary

Healthcare workers (HCW) can acquire and transmit influenza from patients or transmit influenza to patients and other staff. Vaccination remains the single most effective preventative measure available against influenza, and can prevent many illnesses, deaths and losses in productivity. This research brief provides HCW influenza vaccination data for Oregon hospitals and long-term skilled nursing facilities ("long-term care facilities"). This report is based on a survey, created and fielded by the Office for Oregon Health Policy and Research (OHPR). ***Appendix A*** includes a copy of the survey.

The definition of HCW encompasses a broad range of healthcare workers, with the goal of providing a safe environment for patients. HCW includes workers that provide direct patient care (e.g., physicians, nurses, and other healthcare professionals), as well as workers that can spread this infectious disease to patients and direct care workers (e.g., dietary, maintenance, and administrative staff). Seventy percent (42) of Oregon hospitals and 72% (97) of long-term care facilities indicated they could provide data for all or at least 90% of HCW. An analysis of data submitted for this survey indicates that one-third of HCW are not included in vaccination counts for 2009-2010.

Appendix B contains detailed facility-level information from the survey for hospitals and long-term care facilities. Vaccination rates were reported for 60 Oregon hospitals with an average rate of 62% and a range of 27% to 88%. Vaccination rates were reported for 113 long-term care facilities, with an average rate of 55%, and range of 0% to 100%. These rates were evaluated against the U.S. Department of Health and Human Services Healthy People targets. The target for 2010 is a 60% vaccination rate. For the 2009-2010 season, 67% (40) hospitals and 42% (48) long-term care facilities reported exceeding this target.

The report details methods that hospitals and long-term care facilities are using to promote, deliver, and formally educate HCW regarding influenza vaccination. Ninety-five percent (57) of hospitals and 42% (54) of long-term care facilities reported using two or more vaccine delivery methods. Eighty percent (48) of hospitals and 44% (58) of long-term care facilities reported using two or more delivery methods. Sixty-three percent (37) of hospitals and 76% (98) of long-term care facilities reported having a formal educational program.

OHPR is collecting HCW vaccination rates for the 2010-2011 flu season from hospitals and long-term care facilities and has added mandatory reporting for ambulatory surgical centers starting with the 2011-2012 season. These data will be used by the Healthcare Worker Vaccination Legislative Workgroup to promote patient safety through its annual healthcare worker vaccination program.

HEALTHCARE ACQUIRED INFECTION REPORTING PROGRAM
HEALTHCARE WORKER INFLUENZA VACCINATION RATES
2009 – 2010 SEASON

Background

Influenza transmission to patients by healthcare workers (HCW) is a healthcare acquired infection (HAI), which is an infection that occurs during or after treatment for a separate medical condition. HCW can acquire and transmit influenza from patients or transmit influenza to patients and other staff. [1,2,3] Vaccination remains the single most effective preventive measure available against influenza, and can prevent many illnesses, deaths, and losses in productivity. [1,4] Despite this evidence, from 1989 through 2008, the influenza vaccine coverage among HCW in the U.S. was estimated to be below 50%, and a preliminary estimate for 2009 indicates a rate of 62%.[5,6]

The Oregon state legislature passed House Bill 2524 in 2007 to create a mandatory HAI Reporting Program in an effort to raise awareness, promote transparency for healthcare consumers, and motivate hospitals and other health care facilities to prioritize prevention. HB 2524 assigned responsibility for the HAI Reporting Program to the Office for Oregon Health Policy and Research (OHPR), part of the Oregon Health Authority (OHA), and created a 16-member committee to advise OHPR on the HAI Reporting Program. This program is promulgated in ORS 442.851, Notes Following, and OARs 409-023-0000 through 409-023-3500.

This research brief focuses on reporting HCW influenza vaccination data for Oregon hospitals and long-term care skilled nursing facilities ("long-term care facilities") during the 2009 – 2010 influenza season.

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[1] Talbot TR, Bradley SF, Cosgrove SE, Reuf C, Siegel JD, Weber DJ. Influenza vaccination of healthcare workers and vaccine allocation for healthcare workers during vaccine shortages. Infect Control Hosp Epidemiol 2005; 26:882-90.

[2] Talbot TR, Dellit TH, Hebden J, Sama D, Cuny J. Factors associated with increased healthcare worker influenza vaccination rates: results from a national survey of university hospitals and university medial centers. Infect Control Hos Epidemiol 2010;31: 456-62.

[3] Pavia AT. Mandate to protect patients from health care-associated influenza. CID 2010; 50:465-67. Fiore AE, Shay DK, Broder K, Iskander JK, Uyeki TM, Mootrey G, Bresee JS, Cox, NJ. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. MMWR Recomm Rep 2009; 58 (RR08);1-52.

[4] Fiore AE, Shay DK, Broder K, Iskander JK, Uyeki TM, Mootrey G, Bresee JS, Cox, NJ. Prevention and control of seasonal influenza with vaccines: recommendations of the Advisory Committee on Immunization Practices (ACIP), 2009. MMWR Recomm Rep 2009; 58 (RR08);1-52.

[5] Walker FJ, Singleton JA, Lu P, Wooten KG, Strikas RA. Influenza vaccination of healthcare workers in the United States, 1989-2002. Infection Control and Hospital Epidemiology 2006; 27:257-265.

[6] Centers for Disease Control and Prevention. Interim results: Influenza A (H1N1) 2009 and Monovalent Seasonal Influenza Vaccination Coverage Among Health-Care Personnel—United States August 2009-January 2010. Morbidity and Mortality Weekly Report (MMWR) Recommendations and Report 2010; 59:357-362. Available at: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5912a1.htm . Accessed 7/26/2011.

Methods

HCW vaccination rates were collected using a survey created by OHPR. The definition for Healthcare Personnel was obtained from the US Health and Human Services (US HHS) Action Plan to Prevent Healthcare Associated Infections: Influenza Vaccination of Healthcare Personnel.[7]

> HCP refers to all paid and unpaid persons working in health-care settings who have the potential for exposure to patients and/or to infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air.
>
> HCP might include (but are not limited to) physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by the health-care facility, and persons (e.g., clerical, dietary, house-keeping, laundry, security, maintenance, billing, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from HCP and patients.
>
> These recommendations apply to HCP in acute care hospitals, nursing homes, skilled nursing facilities, physician's offices, urgent care centers, and outpatient clinics, and to persons who provide home health care and emergency medical services.

OHPR added questions to evaluate a facility's ability to collect data from all categories of staff included in this broad definition and questions from the National Healthcare Safety Network (NHSN) Facility Surveys for Influenza Programs[8]. A copy of the OHPR survey is presented in ***Appendix A***.

The survey was sent to the 60 hospitals and 140 long-term care facilities in the state. The survey for hospitals was sent via email to hospital human resource directors and infection control professionals. The survey for long-term care facilities was distributed via registered mail to facility administrators. Facilities were given 30 days to complete the survey. Follow-up was conducted via phone and email to obtain a survey from each facility and to address inconsistencies reported in the surveys. OHPR received surveys from 100% of the facilities.

[7] The US HHS Action Plan to Prevent Healthcare Associated Infections: Influenza Vaccination of Healthcare Personnel: http://www.hhs.gov/ash/initiatives/hai/tier2_flu.html#_ftn5. (Accessed 7/26/2011.) The cited definition was adapted from Adapted from Influenza Vaccination of Health-Care Personnel: Recommendations of the Healthcare Infection Control Practices Advisory Committee (HICPAC) and the Advisory Committee on Immunization Practices (ACIP). MMWR 2006;55(RR02):1-16.

[8] National Healthcare Safety Network (NHSN) Pre-Season Survey on Influenza Vaccination Programs for Healthcare Personnel (OMB No. 0920-0666 Exp. Date: 09-30-2012). http://www.cdc.gov/nhsn/forms/57.211_FluVaccSurveyPRE_BLANK.pdf (Accessed 7/26/2011.) NHSN Post-Season Survey on Influenza Vaccination Programs for Healthcare Personnel (OMB No. 0920-0666 Exp. Date: 09-30-2012). http://www.cdc.gov/nhsn/forms/57.212_FluVaccSurveyPOST_BLANK.pdf

Prior to publication, the completed survey forms were sent via email to the person that signed the survey and to the facility Chief Executive Officer or Administrator for review. During the review period, 13 hospitals and 15 long-term care facilities responded, and data was corrected for four facilities.

Results

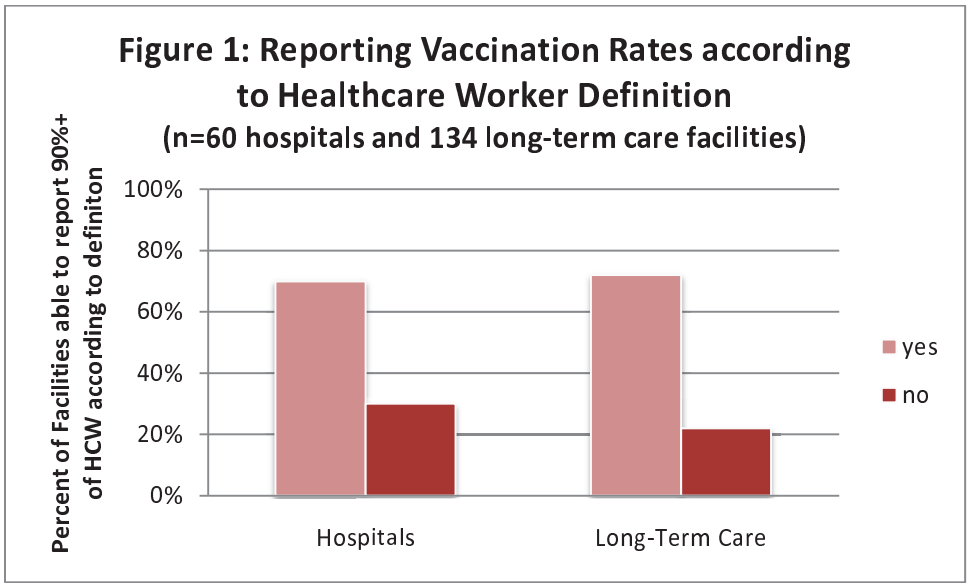
Results are provided for the three sections of the survey:

- Reporting Ability: The reported ability to provide data for all categories of staff covered in the healthcare worker definition.
- Staff Vaccination Counts: Counts of total staff, staff vaccinated, staff with documented contraindication, and staff with documented refusal.
- Promotion, Delivery, and Formal Education: Flu vaccination promotion and delivery methods and existence of formal education program(s) regarding HCW vaccination.

Appendix B contains detailed facility-level information from the survey.

Reporting Ability

The first three questions on the survey addressed the ability of the facility to collect vaccination data from a broad range of staff categories as outlined in the HCW definition. All hospitals (60) and 96% (134) of long-term care facilities provided data for this section. OHPR summarized data as "yes" for facilities that reported they were able to collect data from all or 90% of their HCW. A "no" answer means that the facility was not able to collect data according to this broad definition and it was missing data from greater than 10% of its staff.



Seventy percent (42) of hospitals indicated they could report data for all, or at least 90% of all, of the staff categories represented in the broad defintion of HCW. This 70% includes 38% (23) that can report data for all staff and 32% (19) than can report data for at least 90% of staff. The most common missing staff categories are volunteers, agency/contract staff, students/trainees, and licensed independent physicians.

Seventy-two percent (97) long-term care facilities indicated that they could report data for all or at least 90% of HCW. This 72% includes 54% (72) that can report data for all staff and 18% (25) than can report at least 90% of HCW. The most common missing staff categories are volunteers, physical/occupational therapists, and physicians.

Another means to gauge a facility's ability to report vaccination data is to calculate the percentage of workers without a vaccination status (e.g., the sum of those vaccinated or with documented contraindication or refusal divided by total HCW). The undocumented vaccination rates at hospitals and long-term care facilities are 30% and 32%, respectively.

Staff Vaccination Counts

The second set of questions addressed the vaccination rate at the facility and included information on how many HCW were vaccinated, how many declined for medical contraindications, and how many refused to be vaccinated. Seasonal vaccination rates are calculated for all hospitals and 81% (113) of long-term care facilities. Of the 140 long-term care facilities, 23 did not have sufficient data to calculate a vaccination rate. In addition, four critical access hospitals combined their hospital and long-term staff data on one form, and were not able to retroactively separate the information. For this report, these data are reported under the name of the hospital, and staff at these facilities has been notified to provide data for each facility separately for subsequent data collection periods. The four hospitals that include long-term care vaccination data are Lake District Hospital, Lower Umpqua Hospital, Providence Seaside Hospital, and St. Alphonsus Medical Center – Baker City.

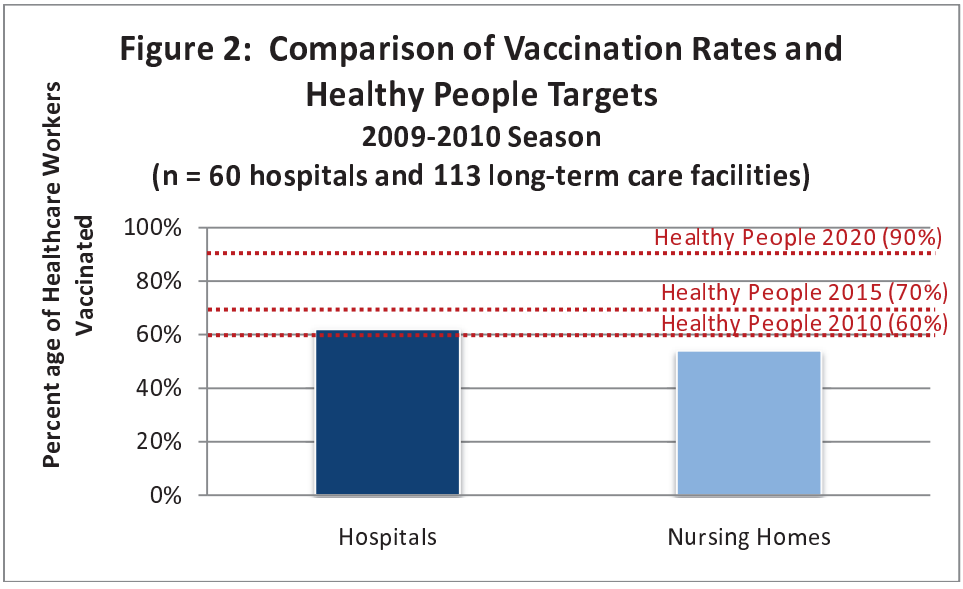
The response rate for reporting H1N1 vaccinations is lower than for seasonal vaccine, with 97% (58) for hospitals and 77% (108) for long-term care facilities. This decreased response rate may be attributable to the H1N1 vaccine shortage and the practice of facilities sending HCW to public health clinics for H1N1 vaccination.

Vaccination rates were calculated by taking the count of healthcare workers and subtracting those with medical contraindications and dividing by the sum of healthcare workers. The average seasonal vaccination rate for hospitals was 62% (range of 27% to 88%) and 55% for long-term care facilities (range of 0% to 100%). Rates for the seasonal and H1N1 vaccination rates are presented in Table 1; ***Appendix B*** presents vaccination rates per facility.

Table 1:
Calculation of Influenza Vaccination Rates
2009-2010 Season

	Count of facilities	Sum of vaccinations	Sum of HCW	Subtract medical contra-indication	Percentage vaccinated
Hospitals					
Seasonal Rate	60	44,955	73,193	476	62%
H1N1 Rate	58	42,603	72,819	390	59%
Long-Term Care Facilities					
Seasonal Rate	113	5,581	10,288	116	55%
H1N1 Rate	108	2,596	10,288	52	25%

The vaccination rates were compared to the benchmarks sets by the Healthy People program. A program of the US Department of Health and Human Services (HHS), Healthy People 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.[9]



During the 2009-2010 season, 67% (40) hospitals reported having rates exceeding the Healthy People 2010 target, 35% (21) exceeding the 2015 target, and no hospitals reported exceeding the 2020 target. Of the 113 long-term care facilities reporting, 42%

[9] The US HHS Action Plan to Prevent Healthcare Associated Infections: Influenza Vaccination of Healthcare Personnel: http://www.hhs.gov/ash/initiatives/hai/tier2_flu.html#_ftn5. (Accessed 7/11/2011.)

(48) of long-term care facilities reported exceeding the 2010 target, 28% (32) the 2015 target, and 7% (8) the 2020 target.

Promotion, Delivery and Formal Education

The third set of questions addressed what activities facilities were undertaking to promote, deliver and formally educate its workers regarding influenza vaccination. All hospitals and 93% (130) long-term care facilities provided responses to this question. Figure 3 presents data on delivery methods for seasonal influenza vaccine during the 2009-2010 flu season.

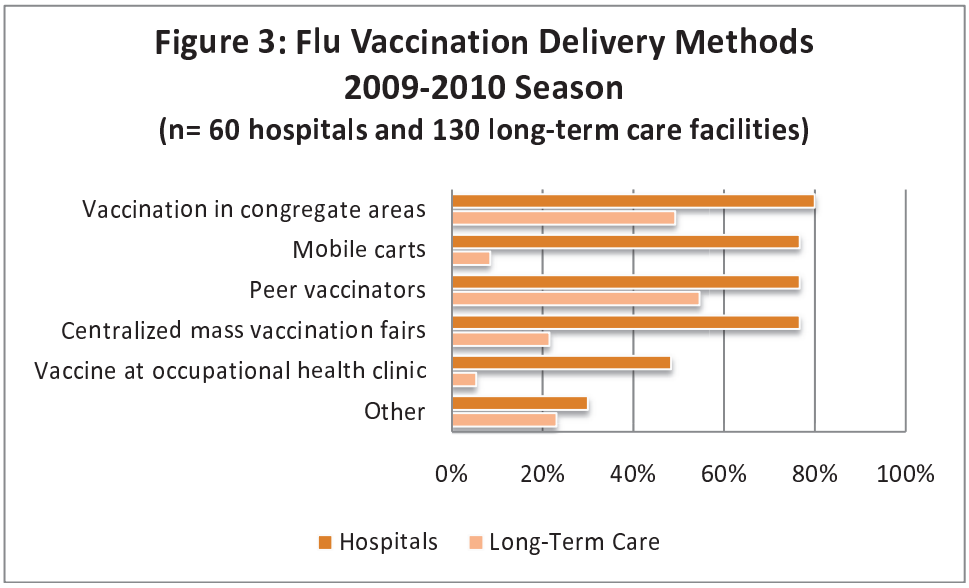


Figure 3 shows that hospitals used more delivery methods than nursing homes. Hospitals favored vaccination in congregate areas, the use of mobile carts, peer vaccinators, and vaccination fairs. Ninety-five percent (57) of hospitals reported using two more more delivery methods. Other reported delivery methods for hospitals include that the vaccine was offered at the employee health office via drop in or appointments, delivered during employee rounds/department visits, and at off-site clinic buildings.

Long-term care facilities favored using peer vaccinators and vaccination in congregate areas. Forty-two percent (54) of long-term care facilities reported using two or more methods. Other methods reported included offering the vaccine at staff meetings, by appointment, 24 hours a day, and at the nurses' station.

Facilties also reported on activtites to promote influenza vaccination (Figure 4). All hospitals and 94% (132) long-term care facilities provided responses to this question.

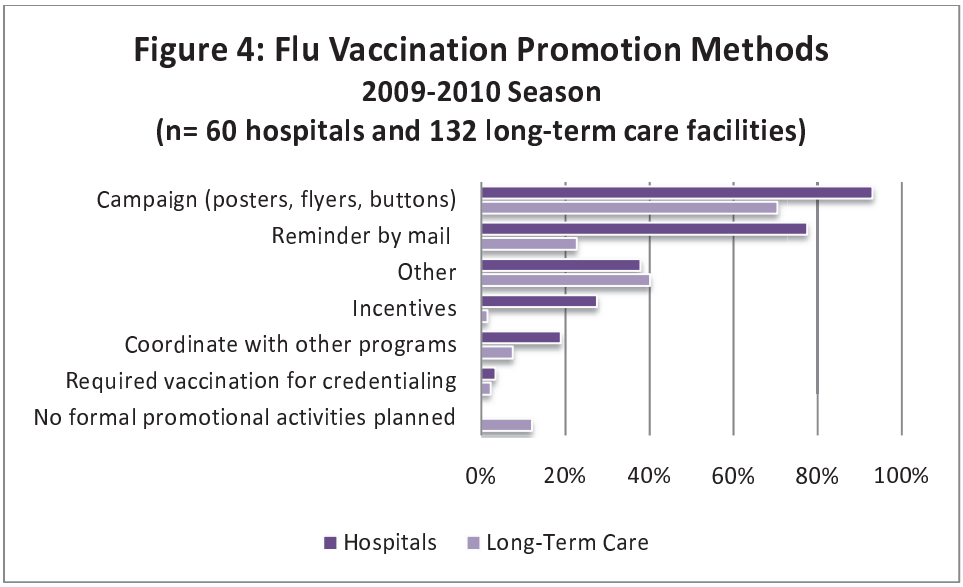
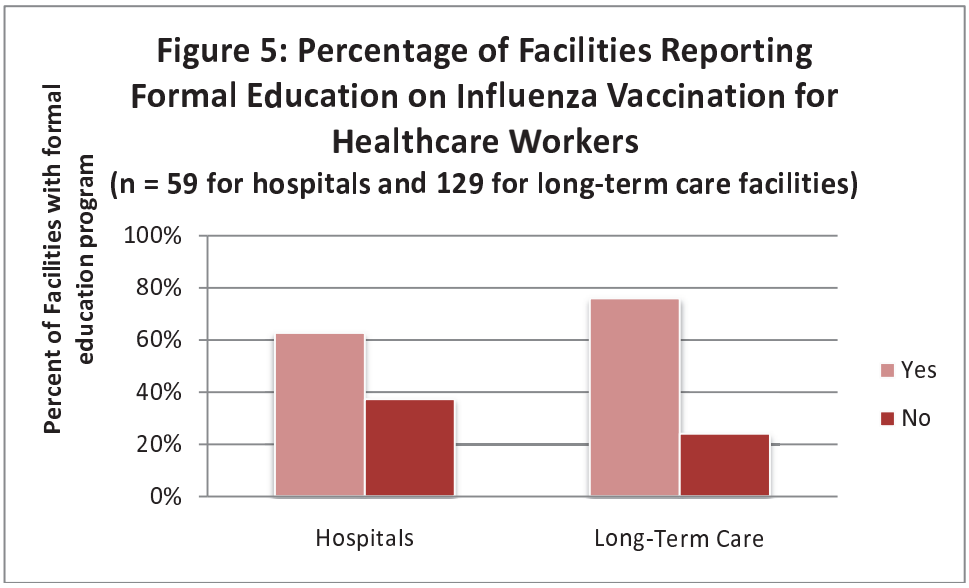


Figure 4 shows that both hospitals and long-term care facilities selected the methods of campaigns (including posters, flyers, buttons, fact sheets) and reminders by mail/email as their top two methods to promote HCW vaccination. Eighty percent (48) of hospitals reported using two or more promotion methods. Other promotion methods include newsletters, daily email briefings, "flu fighter" t-shirts, mandatory on-line education, grand rounds, informational vaccination/declination form, and one-to-one staff interaction.

Forty-four percent (58) of long-term care facilities reported using two or more promotion methods. Other promotion methods include email notices from administration, staff meetings (some with formal education sessions), educational handouts, informational inserts with paycheck, vaccine paid by the facility, and one-to-one staff interaction. Twelve percent (16) long-term care facilities reported no formal promotional activities were planned.

The final survey question asked if the facility had a formal educational program on influenza vaccination. Ninety-eight percent (59) hospitals and 92% (129) of long-term care facilities provided responses to this question. As noted in Figure 5 below, 63% (37) of hospitals and 76% (98) of long-term care facilities reported having a formal educational program.



Limitations

The data reported here are subject to three important limitations:

1. Data are self-reported by the facility.
2. Surveillance methods and resources vary across facilities, which may affect a facility's ability to report vaccination rates. Lower rates may be due to more comprehensive surveillance activities.
3. This represents the first year of data collection for this measurement set. In follow-up contact with facilities, some indicated that they were working to improve their data collection systems to be able to better report these data in subsequent years.

Future Activities

OHPR is collecting HCW vaccination rates for the 2010-2011 flu season from hospitals and long-term care facilities. The HAI Advisory Committee has drafted rules to add ambulatory surgical centers to start this reporting as of the 2011-2012 seasons. The data for this program will also be used by the Healthcare Worker Vaccination Legislative Workgroup[10] for its work to promote patient safety through an annual healthcare worker vaccination program.

[10]Oregon Legislative Workgroup on Health Care Worker Influenza Vaccination. http://flu.oregon.gov/articles/Pages/HCWInfluenzaWorkgroup.aspx. (Accessed 7/26/2011.)

June 25, 2010

TO: Accrediting and Licensing Department, Hospital / Long-Term Care Facilities

SUBJECT: Annual Survey on Influenza Vaccination of Staff for 2009-2010

Each hospital is requested to report influenza vaccination, documented contraindication, and informed declination rates for all staff for the 2009-2010 flu season and to submit this data to the Office of Health Policy and Research (OHPR) by July 31, 2010.

This document provides the survey forms for Reporting of Influenza Vaccination, Medical Contraindication and Declination Rates for Staff, 2009-2010, for compliance with Oregon Administrative Rule 409-023-0013(4).

The following information is provided to complete this form:

1. Staff is defined as healthcare personnel (HCP), which refers to all paid and unpaid persons working in health-care settings who have the potential for exposure to patients and/or infectious materials, including body substances, contaminated medical supplies and equipment, contaminated environmental surfaces, or contaminated air.

   HCP might include (but are limited to) physicians, nurses, nursing assistants, therapists, technicians, emergency medical service personnel, dental personnel, pharmacists, laboratory personnel, autopsy personnel, students and trainees, contractual staff not employed by health-care facility, and persons (e.g., clerical, dietary, house-keeping, laundry, security, maintenance, billing, and volunteers) not directly involved in patient care but potentially exposed to infectious agents that can be transmitted to and from HCP and patients.

2. The cutoff date for tabulation of the data Attachment A is the count of vaccinations, declinations, or documented medical contraindications between September 1, 2009 and March 31, 2010. The total count of staff is the count on March 31, 2010.

3. Attachment A is due to OHPR by July 31, 2010. Upon completion, please email to ohpr.datasubs@state.or.us or fax to Jeanne Negley at (503) 378-5511.

If you have any questions about this survey, please contact Jeanne Negley, HAI Program Coordinator, at Jeanne.Negley@state.or.us or phone (503) 373-1793.

Sincerely,

Elyssa Tran, MPA
Health Systems Data and Research Manager
Oregon Health Policy and Research

cc: HAI Advisory Committee
Oregon Association of Hospitals and Health Systems

APPENDIX A

ATTACHMENT A

Influenza Vaccination/Declination Surveillance for Long-Term Care Facilities

Collection Start Date: September 1, 2009; End Date: March 31, 2010

Hospital Name:_____

Name and Title of Person Completing Form:_____

The undersigned certifies that the information in this form is accurate and true.

Signature of Person Completing Form: _____ **Date:** _____

Contact Information: Email: _____ **Phone:** _____

Components	Number	
1. Can you provide influenza vaccination data for **all** staff categories according to the healthcare worker definition provided in the cover letter? □ Yes □ No. If yes, proceed to question 2. 1a. Estimate percentage of healthcare workers not counted: □ ≤ 10% □ 20% □ 30% □ 40% □ 50%+ 1b. List categories of healthcare workers not counted: _____		
2. Total number of staff with a documented influenza vaccination during the influenza season (includes influenza vaccines administered in settings other than reporting facility).	Seasonal	H1N1
3. Total number of staff (include part-time; total count as of March 31, 2010).		
4. Total number of staff with a documented medical contraindication of influenza vaccination during the influenza season.	Seasonal	H1N1
5. Total number of staff with a documented refusal of influenza vaccination during the influenza season.	Seasonal	H1N1
6. Which of the following methods did you use during the influenza season to deliver vaccine to your healthcare workers? (check all that apply) □ Mobile carts □ Centralized mass vaccination fairs □ Peer vaccinators □ Provided vaccination in congregate areas (e.g., conferences/meetings or cafeteria) □ Provided vaccination at occupational health clinic □ Other, specify: _____		
7. Which of the following strategies did you use to promote/enhance healthcare worker influenza vaccination at your facility? (check all that apply) □ No formal promotional activities are planned □ Incentives □ Reminders by mail, email or pager □ Coordination of vaccination with other annual programs (e.g., tuberculin skin testing) □ Required receipt of vaccination for credentialing (if no contraindications) □ Campaign including posters, flyers, buttons, fact sheets □ Other, specify: _____		
8. Did you conduct any formal educational programs on influenza and influenza vaccination for your healthcare workers? □ Yes □ No		

Hospitals: Healthcare Worker Influenza Vaccination Data (September 1, 2009 - March 31, 2010)

Hospital	Can Report All or 90%+ of HCW Data	Seasonal Influenza HCW Vaccination Rate	Count of reported vaccine delivery methods	Count of reported vaccine promotion methods	Formal education conducted?
Adventist Medical Center	Yes	77%	3	3	Yes
Ashland Community Hospital	Yes	46%	2	2	No
Bay Area Hospital	No	62%	3	3	Yes
Blue Mountain Hospital	Yes	63%	4	3	No
Columbia Memorial Hospital	Yes	68%	5	3	Yes
Coquille Valley Hospital	Yes	27%	2	2	Yes
Cottage Grove Community Hospital	No	33%	5	3	No
Curry General Hospital	Yes	47%	4	3	Yes
Good Samaritan Regional Medical Center	Yes	78%	4	4	Yes
Good Shepherd Medical Center	Yes	79%	3	2	Yes
Grand Ronde Hospital	Yes	71%	5	2	Yes
Harney District Hospital	Yes	63%	2	1	Yes
Kaiser Sunnyside Medical Center	Yes	62%	2	2	No
Lake District Hospital	Yes	65%	2	1	Yes
Legacy Emanuel Hospital & Health Center	No	54%	5	3	Yes
Legacy Good Samaritan Hospital & Medical Ctr	No	63%	5	3	Yes
Legacy Meridian Park Hospital	No	54%	5	3	Yes
Legacy Mount Hood Medical Center	No	53%	5	3	Yes
Lower Umpqua Hospital	Yes	68%	1	2	Yes
McKenzie-Willamette Medical Center	No	77%	2	2	No
Mercy Medical Center	Yes	61%	4	3	Yes
Mid-Columbia Medical Center	Yes	62%	4	3	Yes
Mountain View Hospital	Yes	78%	3	2	Yes
Oregon Health & Science University Hospital	Yes	60%	5	6	Yes
Peace Harbor Hospital	No	69%	3	3	No
Pioneer Memorial Hospital, Heppner	No	53%	2	1	No
Pioneer Memorial Hospital, Prineville	Yes	43%	2	2	Yes
Providence Hood River Memorial Hospital	Yes	75%	5	1	No
Providence Medford Medical Center	Yes	65%	5	1	No
Providence Milwaukie Hospital	Yes	63%	5	1	No
Providence Newberg Medical Center	Yes	72%	5	1	No
Providence Portland Medical Center	Yes	54%	5	1	No
Providence Seaside Hospital	Yes	76%	5	1	No
Providence St. Vincent Medical Center	Yes	56%	5	1	No
Providence Willamette Falls Medical Center	Yes	69%	5	4	Yes
Rogue Valley Medical Center	No	85%	4	2	Yes
Sacred Heart Medical Center at RiverBend	No	38%	5	3	No
Sacred Heart Medical Center University District	No	36%	5	3	No
Salem Hospital	Yes	57%	4	4	No
Samaritan Albany General Hospital	Yes	83%	5	4	Yes
Samaritan Lebanon Community Hospital	Yes	87%	5	4	Yes
Samaritan North Lincoln Hospital	Yes	88%	5	3	Yes
Samaritan Pacific Communities Hospital	Yes	74%	5	4	Yes
Santiam Memorial Hospital	Yes	46%	4	3	No
Shriners Hospital for Children	No	75%	5	3	Yes
Silverton Hospital	Yes	74%	4	2	Yes
Sky Lakes Medical Center	Yes	59%	3	3	No
Southern Coos Hospital & Health Center	Yes	73%	1	1	No
St. Alphonsus Medical Center - Baker City	No	86%	3	2	No

Hospitals: Healthcare Worker Influenza Vaccination Data (September 1, 2009 - March 31, 2010)

Hospital	Can Report All or 90%+ of HCW Data	Seasonal Influenza HCW Vaccination Rate	Count of reported vaccine delivery methods	Count of reported vaccine promotion methods	Formal education conducted?
St. Alphonsus Medical Center - Ontario	No	81%	5	4	Yes
St. Anthony Hospital	Yes	68%	3	2	Yes
St. Charles Medical Center - Bend	Yes	57%	4	4	Yes
St. Charles Medical Center - Redmond	Yes	60%	4	4	Yes
Three Rivers Community Hospital	No	63%	5	3	Yes
Tillamook County General Hospital	No	75%	4	2	Yes
Tuality Healthcare	Yes	65%	4	2	Yes
Vibra Specialty Hospital	No	40%	3	3	Yes
Wallowa Memorial Hospital	Yes	45%	2	1	No
West Valley Hospital	Yes	51%	3	4	No
Willamette Valley Medical Center	Yes	78%	6	4	Yes

Vaccination delivery methods:

Mobile Carts
Centralized mass vaccination fairs
Peer vaccinators
Provided vaccination in congregate areas (e.g., conferences/meetings or cafeteria)
Provided vaccination at occupational health clinic
Other

Vaccination promotion methods:

No formal promotional activities are planned (was not counted as a method)
Incentives
Reminders by mail, email or pager
Coordination of vaccination with other annual programs (e.g., tuberculin skin testing)
Required receipt of vaccination for credentialing (if no contraindications)
Campaign including posters, flyers, buttons, fact sheets
Other

Long-Term Care Facilities: Healthcare Worker Influenza Vaccination Data (September 1, 2009 - March 31, 2010)

Long-Term Care Facility	Can Report All or 90%+ of HCW Data	Seasonal Influenza HCW Vaccination Rate	Count of reported vaccine delivery methods	Count of reported vaccine promotion methods	Formal education conducted?
Avamere at Three Fountains	Yes	27%	1	2	Yes
Avamere Court at Keizer	Yes	39%	4	2	Yes
Avamere Crestview of Portland	No	Not Reported	1	0	No
Avamere Rehabilitation of Beaverton	No	70%	1	1	Yes
Avamere Rehabilitation of Clackamas	Yes	79%	3	4	Yes
Avamere Rehabilitation of Coos Bay	Yes	14%	2	1	No
Avamere Rehabilitation of Eugene	Yes	37%	2	1	No
Avamere Rehabilitation of Hillsboro	Yes	2%	1	1	Yes
Avamere Rehabilitation of Junction City	No	65%	2	2	Yes
Avamere Rehabilitation of King City	No	Not Reported	1	2	Yes
Avamere Rehabilitation of Lebanon	Yes	73%	2	2	Yes
Avamere Rehabilitation of Newport	Yes	89%	2	1	Yes
Avamere Rehabilitation of Oregon City	No	30%	2	0	No
Avamere Rehabilitation of Salem	No	11%	1	1	Yes
Avamere Riverpark of Eugene	No	85%	1	3	Yes
Avamere Twin Oaks of Sweet Home	No	0%	4	4	Yes
Baycrest Health Center (Village)	Yes	54%	3	1	Yes
Blue Mountain Nursing Home	Yes	88%	1	1	No
Care Center East Health & Specialty Care Center	Yes	63%	3	2	Yes
Cascade Manor	Yes	94%	1	2	Yes
Cascade Terrace Nursing Center	Yes	57%	1	1	Yes
Cascade View Nursing Center	Yes	85%	2	2	Yes
Chehalem Health & Rehab Center	Yes	100%	1	0	Yes
Clatsop Care Center	No	55%	3	1	No
Coast Fork Nursing Center	No	Not Reported	1	1	No
Columbia Basin Care Facility	Yes	50%	1	1	Yes
Columbia Care Center	Yes	67%	1	2	Yes
Cornerstone Care Option	Yes	71%	2	2	Yes
Corvallis Manor Nursing & Rehabilitation Center	Yes	47%	3	2	Yes
Creswell Health and Rehabilitation Center	No	Not Reported	1	2	Yes
Dallas Retirement Village Health Center	Yes	26%	1	2	No
East Cascade Retirement Community, LLC	No	0%	1	1	Yes
Fair View Transitional Health Center	No	41%	2	1	No
Fernhill Estates	No	84%	1	1	Yes
Forest Grove Rehabilitation and Health Center	Yes	100%	1	1	Yes
French Prairie Nursing and Rehabilitation Center	Yes	49%	1	2	No
Friendship Health Center	Yes	Not Reported	2	2	Yes
Friendsview Manor	Yes	41%	1	1	Yes
Gateway Care & Retirement Center	Yes	64%	2	1	Yes
Glisan Care Center	Yes	57%	3	2	Yes
Good Samaritan Society - Curry Village	Yes	46%	1	3	Yes
Good Samaritan Society - Eugene Village	Yes	Not Reported	2	1	No
Good Samaritan Society - Fairlawn Village	Yes	68%	1	1	Yes
Gracelen Terrace Long Term Care Facility	Yes	Not Reported	3	2	Yes
Green Valley Rehabilitation Health Center	Yes	93%	1	1	Yes
Gresham Rehab & Specialty Care	Yes	63%	2	1	Yes
Harbor Care Reedwood	Yes	49%	2	1	Yes

Long-Term Care Facilities: Healthcare Worker Influenza Vaccination Data (September 1, 2009 - March 31, 2010)

Long-Term Care Facility	Can Report All or 90%+ of HCW Data	Seasonal Influenza HCW Vaccination Rate	Count of reported vaccine delivery methods	Count of reported vaccine promotion methods	Formal education conducted?
Harmony House Nursing Home	No	41%	1	2	Yes
Healthcare at Foster Creek	Yes	16%	1	2	Yes
Hearthstone Nursing and Rehabilitation Center	Yes	90%	1	2	Yes
Highland House Nursing & Rehabilitation Center	No	35%	1	2	No
Hillsboro Health and Rehabilitation Center	No	Not Reported	1	0	No
Hillside Heights Rehabilitation Center	Yes	88%	2	1	Yes
Holladay Park Plaza	No	32%	1	1	No
Hood River Care Center	Yes	44%	1	1	Yes
Independence Health and Rehabilitation Center	Yes	45%	1	1	Yes
LaGrande Post Acute Rehab	No	66%	1	1	No
Lake Dist Hosp & Long Term Care Facility	No	See hospital data	See hospital data	See hospital data	No
Laurel Hill Nursing and Rehabilitation Center	Yes	71%	1	1	No
Laurelhurst Village	Yes	21%	1	1	Yes
Lawrence Convalescent Center	Yes	56%	1	2	No
Life Care Center Of Coos Bay	Yes	83%	3	2	Yes
Life Care Center Of McMinnville	Yes	60%	2	1	Yes
Lincoln City Rehabilitation Center	Yes	60%	2	1	Yes
Linda Vista Nursing & Rehab Center	No	44%	2	2	No
Lower Umpqua Hospital District	No	See hospital data	See hospital data	See hospital data	No
Marian Estates	No	Not Reported	Not Reported	Not Reported	No
Marquis Care at Autumn Hills	Yes	3%	2	3	Yes
Marquis Care at Centennial	No	Not Reported	1	2	Yes
Marquis Care at Forest Grove	No	69%	Not Reported	Not Reported	No
Marquis Care at Hope Village	Yes	35%	3	2	Yes
Marquis Care at Mt. Tabor	Yes	13%	2	1	Yes
Marquis Care at Newberg	Yes	41%	2	1	Yes
Marquis Care at Oregon City	Yes	Not Reported	1	0	No
Marquis Care at Piedmont	Yes	Not Reported	1	1	No
Marquis Care at Plum Ridge	Yes	79%	2	2	Yes
Marquis Care at Powellhurst	No	29%	1	1	No
Marquis Care at Silver Gardens	Yes	59%	1	1	No
Marquis Care at Springfield	Yes	Not Reported	1	1	No
Marquis Care at Vermont Hills	Yes	44%	1	0	No
Marquis Care at Wilsonville	Yes	39%	1	2	Yes
Mary's Woods at Marylhurst	No	Not Reported	1	3	Yes
Maryville Nursing Home	Yes	71%	3	2	Yes
Meadow Park Health & Specialty Care Center	Yes	43%	1	1	No
Medford Rehabilitation and Healthcare Center	Yes	37%	1	2	Yes
Menlo Park Health Care	Yes	88%	3	2	Yes
Mennonite Home	No	Not Reported	4	2	Yes
Milton Freewater Health and Rehabilitation Center	Yes	81%	1	1	Yes
Milwaukie Convalescent Center	Yes	100%	1	2	Yes
Molalla Manor Care Center	No	56%	1	2	Yes
Myrtle Point Care Center	Yes	47%	2	2	Yes
Nehalem Valley Care Center	Yes	Not Reported	1	1	Yes
Oakwood Country Place	Yes	47%	1	0	Yes
Ochoco Care Center	Yes	72%	1	1	Yes

Long-Term Care Facilities: Healthcare Worker Influenza Vaccination Data (September 1, 2009 - March 31, 2010)

Long-Term Care Facility	Can Report All or 90%+ of HCW Data	Seasonal Influenza HCW Vaccination Rate	Count of reported vaccine delivery methods	Count of reported vaccine promotion methods	Formal education conducted?
Oregon City Health Care Center	No	Not Reported	1	1	No
Oregon Veterans' Home	Yes	82%	4	3	Yes
Pacific Health and Rehabilitation	Yes	11%	1	2	Yes
Park Forest Care Center	No	Not Reported	Not Reported	Not Reported	No
Pearl at Kruse Way, The	No	51%	2	1	Yes
Pilot Butte Rehabilitation Center	Yes	55%	2	1	No
Pioneer Nursing Home Health District	Yes	53%	1	1	Yes
Porthaven Healthcare Center	Yes	65%	1	2	Yes
Portland Health and Rehabilitation Center	Yes	Not Reported	1	1	Yes
Presbyterian Community Care Center	No	42%	1	1	Yes
Providence Benedictine Nursing Center	Yes	75%	4	3	Yes
Providence Child Center	Yes	70%	6	4	Yes
Providence Seaside Hospital	No	See hospital data	See hospital data	See hospital data	No
Redmond Health Care Center	Yes	100%	1	1	Yes
Regency Albany	Yes	Not Reported	2	1	No
Regency Florence	Yes	58%	2	1	Yes
Regency Gresham Nursing & Rehabilitation Center	No	42%	1	1	Yes
Regency Hermiston Nursing & Rehabilitation Center	Yes	72%	1	1	Yes
Robison Jewish Health Center	Yes	59%	2	2	Yes
Rogue Valley Manor	No	25%	2	3	Yes
Rose City Nursing Home	Yes	0%	1	1	No
Rose Haven Nursing Center	Yes	100%	1	1	Yes
Rose Linn Care Center	Yes	Not Reported	2	1	Yes
Rose Villa	Yes	51%	1	2	No
Royale Gardens Health & Rehabilitation Center	Yes	63%	1	0	Yes
Sheridan Care Center	Yes	74%	1	2	Yes
Sherwood Park Nursing & Rehab Center	No	36%	1	0	Yes
South Hills Rehabilitation Center	Yes	57%	2	2	Yes
St. Alphonsus Medical Center - Baker City	No	See hospital data	See hospital data	See hospital data	No
Sunnyside Care Center	Yes	66%	1	1	Yes
The Dalles Health and Rehabilitation Center	Yes	38%	1	1	Yes
Tierra Rose Care Center	Yes	38%	1	1	Yes
Timberview Care Center	Yes	82%	2	0	Yes
Town Center Village Rehab	Yes	13%	2	1	Yes
Trinity Mission Health & Rehab of Portland	No	Not Reported	Not Reported	Not Reported	No
Umpqua Valley Nursing & Rehabilitation Center	Yes	60%	3	2	Yes
Valley West Health Care Center	No	81%	1	1	No
Village at Hillside	No	Not Reported	2	2	No
Village Health Care	No	24%	2	2	Yes
Village Manor	Yes	0%	0	0	Yes
Vista Specialty Care	No	61%	1	2	No
Wallowa Valley Care Center	Yes	54%	1	1	Yes
West Hills Health & Rehabilitation Center	Yes	96%	3	2	Yes
Willamette View Health Center	Yes	61%	1	2	Yes
Willowbrook Terrace	Yes	38%	1	0	No
Windsor Health and Rehabilitation Center	Yes	40%	1	2	Yes

Long-Term Care Facilities: Healthcare Worker Influenza Vaccination Data (September 1, 2009 - March 31, 2010)

Long-Term Care Facility	Can Report All or 90%+ of HCW Data	Seasonal Influenza HCW Vaccination Rate	Count of reported vaccine delivery methods	Count of reported vaccine promotion methods	Formal education conducted?

Not Reported: The facility did not report total count of HCW and count of HCW vaccinated.

See Hospital Data: Long-term care and hospital data are combined; see hospital data for this facility. These facilities have been notified to provide data for each facility seperately for subsequent data collection.

Vaccination delivery methods:

Mobile Carts
Centralized mass vaccination fairs
Peer vaccinators
Provided vaccination in congregate areas (e.g., conferences/meetings or cafeteria)
Provided vaccination at occupational health clinic
Other

Vaccination promotion methods:

No formal promotional activities are planned (was not counted as a method)
Incentives
Reminders by mail, email or pager
Coordination of vaccination with other annual programs (e.g., tuberculin skin testing)
Required receipt of vaccination for credentialing (if no contraindications)
Campaign including posters, flyers, buttons, fact sheets
Other