Antibiotic Stewardship Across the Healthcare Spectrum

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Healthcare-Associated Infections (HAI) Program

Acute and Communicable Disease Prevention

Oregon Public Health Division

Oregon Health Authority

AWARE

Oregon Alliance Working for Antibiotic Resistance Education

Conference line

- Please join us on the conference line:
  - 877-873-8018
  - Participant Code: 787-2333

Objectives

- Understand the current picture of antimicrobial use and resistance in Oregon
- Identify common themes and challenges in implementing the core elements of antimicrobial stewardship programs across healthcare settings
- Learn about resources and assistance the Oregon Health Authority can provide

POLL

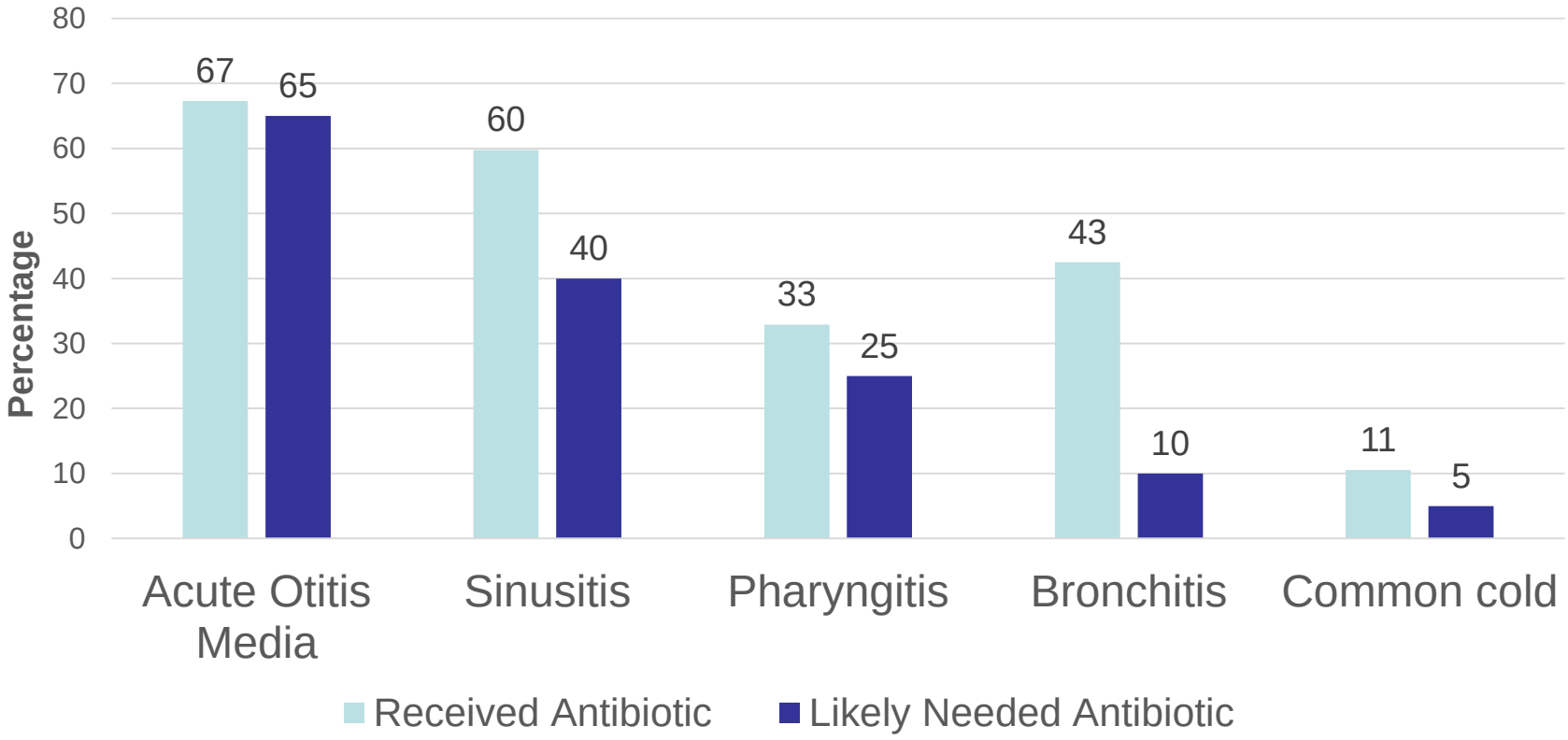
Clinicians

- Consensus guidelines
- Training of students in health professions
- Training on management of upper respiratory tract infections and motivational interviewing

General public

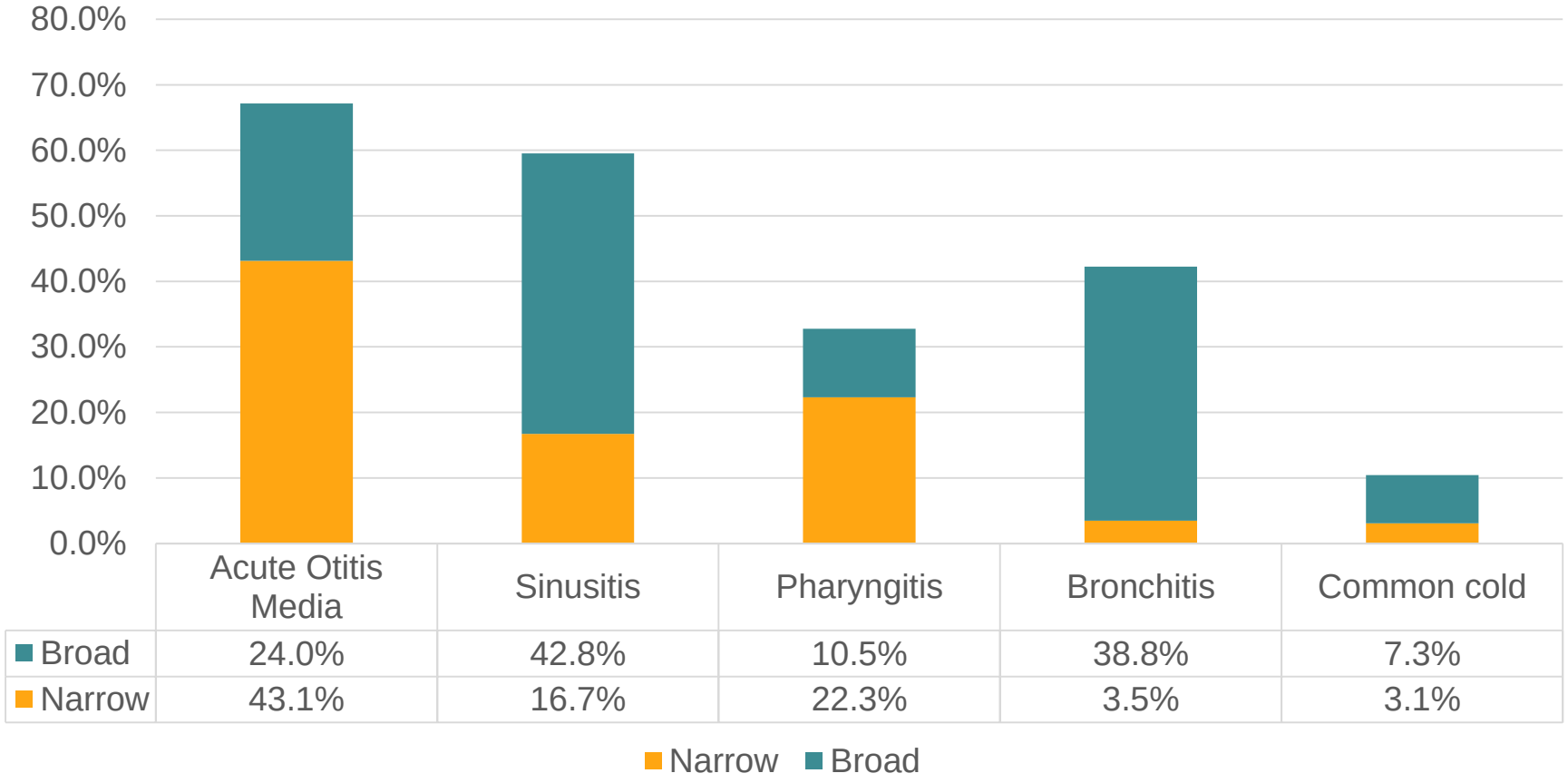
- Mass media
- Printed materials to give patients
- Development of curriculum for K-6 and high school students

Proportion of patients filling antibiotic prescriptions vs proportion needing antibiotics, Oregon, 2016



Gonzales CID 2001;33:757-62; Oregon APAC data, 2016

Proportion of patients receiving broad and narrow* spectrum antibiotics, by syndrome, Oregon, 2016

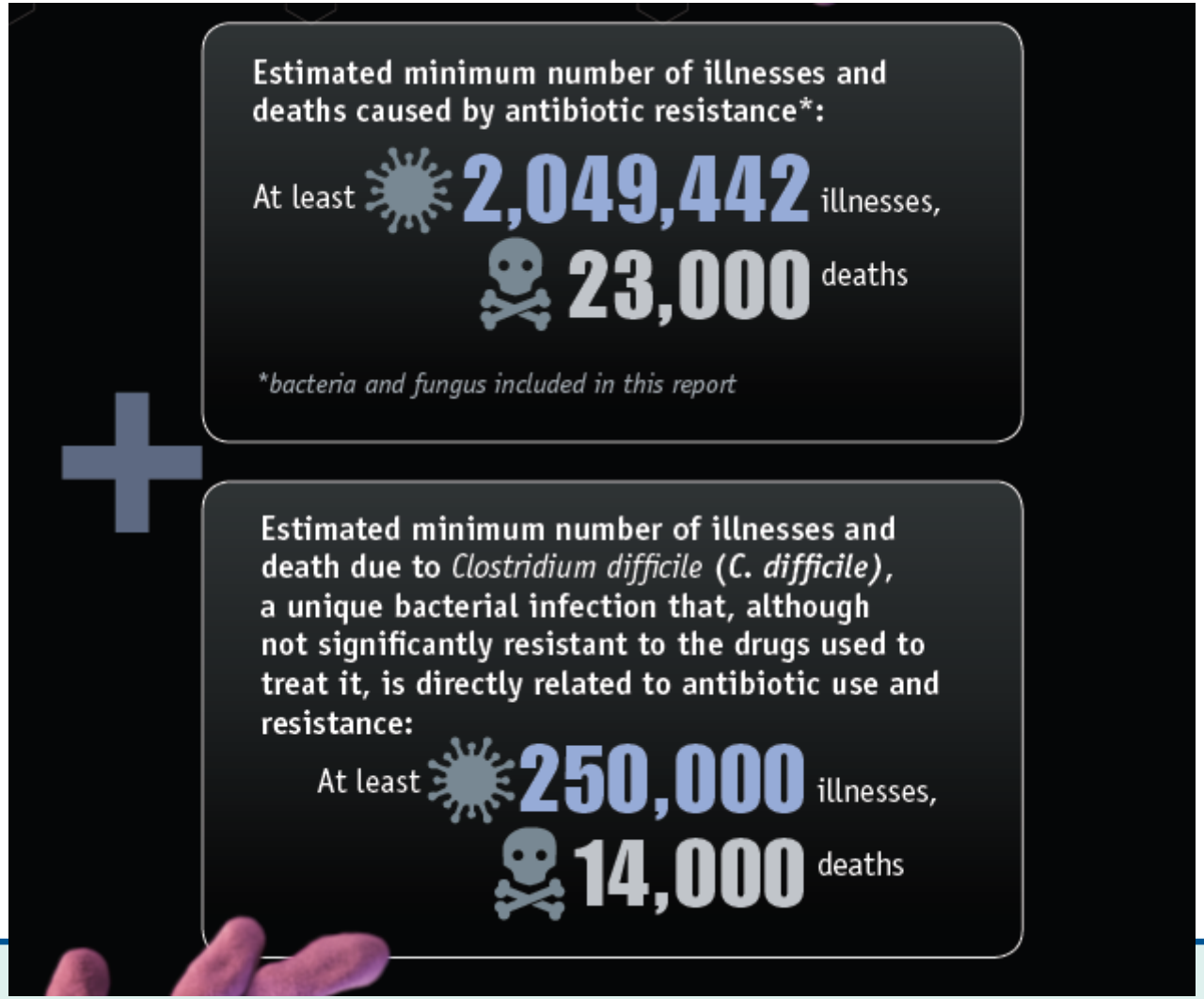


	Acute Otitis Media	Sinusitis	Pharyngitis	Bronchitis	Common cold
Broad	24.0%	42.8%	10.5%	38.8%	7.3%
Narrow	43.1%	16.7%	22.3%	3.5%	3.1%

*Includes penicillin, ampicillin, amoxicillin, and first generation cephalosporins

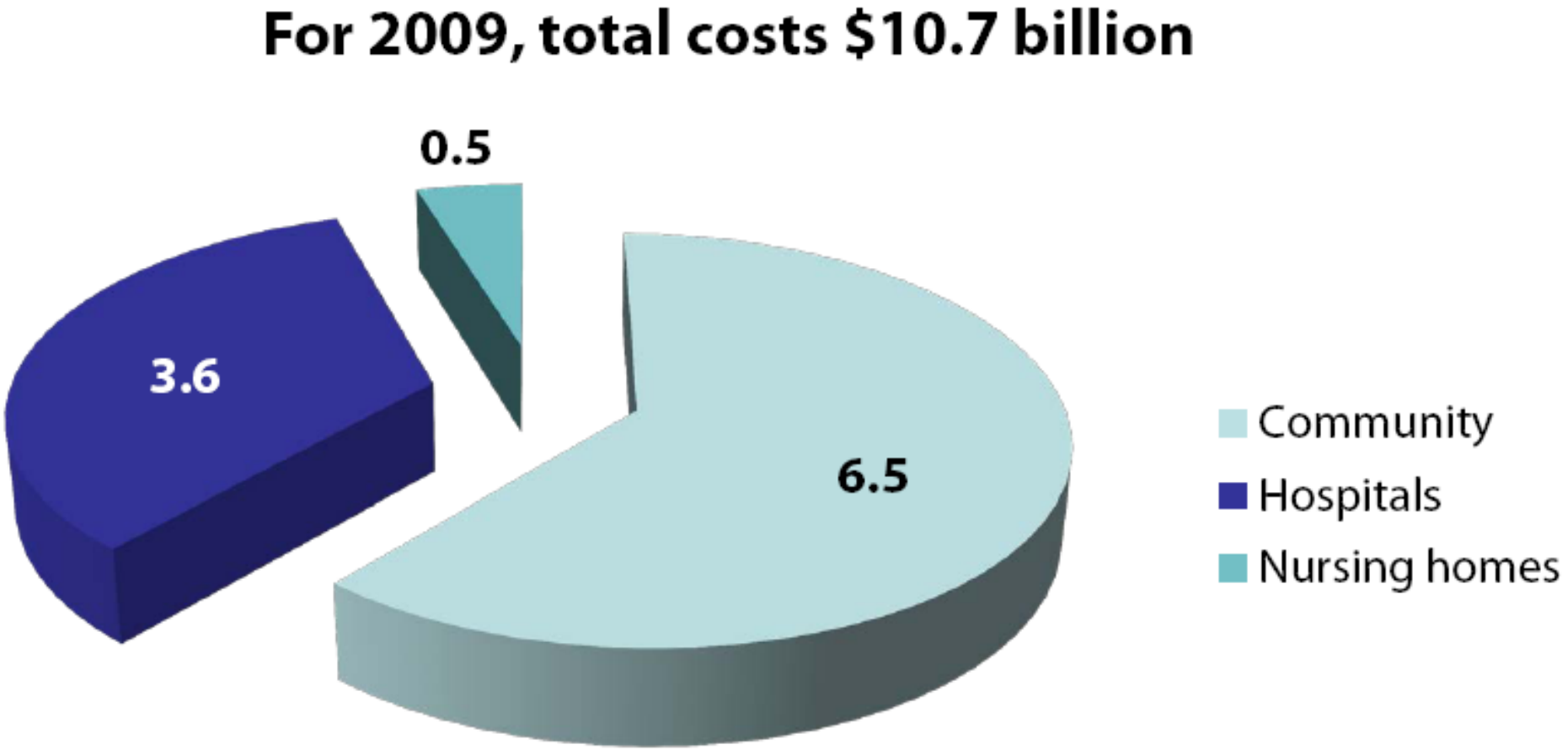
THE PROBLEM OF ANTIBIOTIC RESISTANCE

Antibiotic Resistance: should we be concerned?



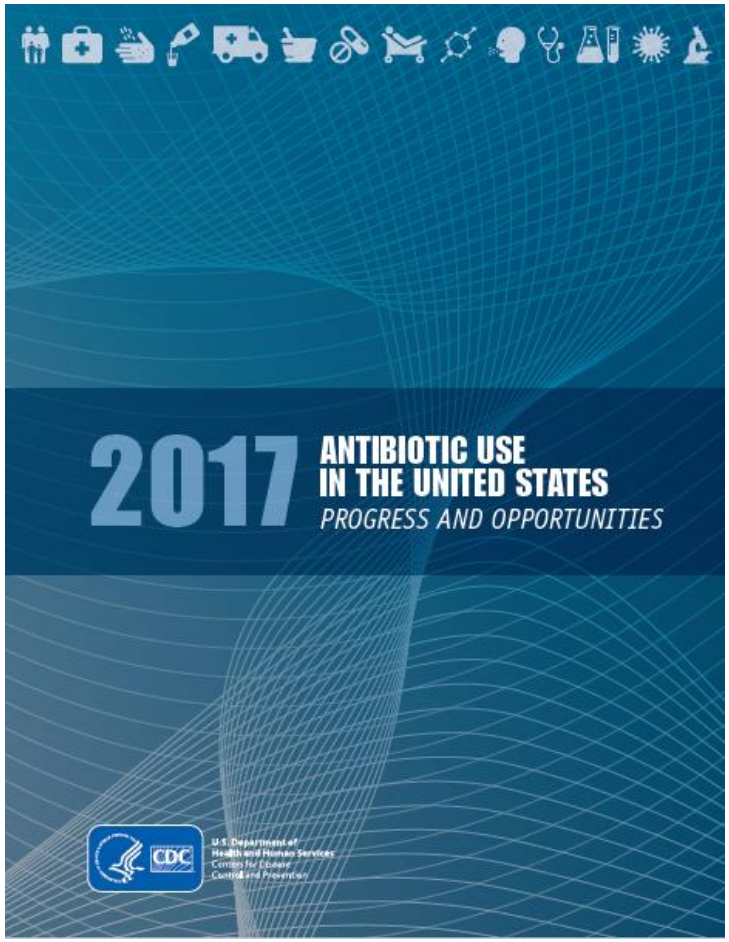
Why antibiotic resistant infections cost us all more

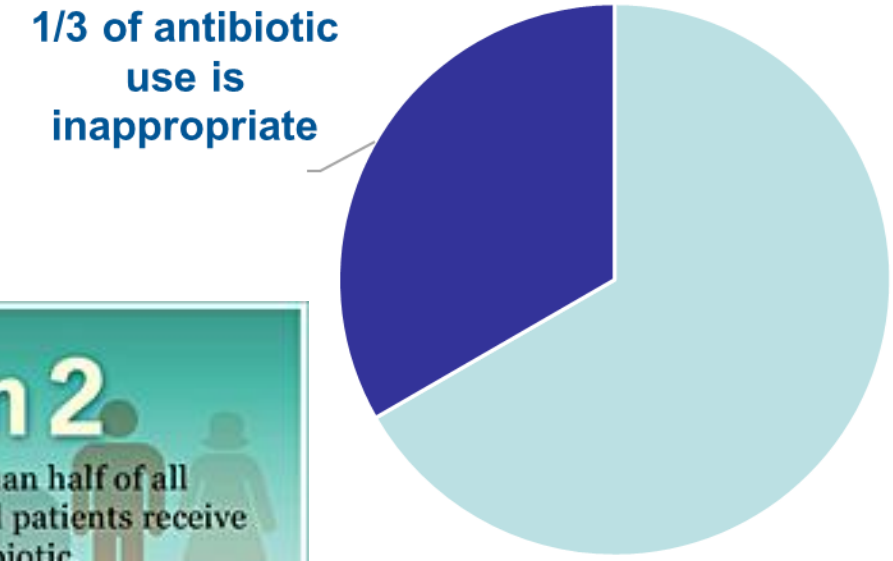
Antibiotic prescription costs in billions



Suda, et al. J Antimicrob Chemotherapy 2013;68:715-18

Too many antibiotics in use





https://www.cdc.gov/antibiotic-use/stewardship-report/index.html

Individual impact

Diarrhea

C. difficile

ED visits

Microbiome disruption

Healthcare-Associated Infections (HAI) Program

Oregon Health Authority

OUR WORK

OHA HAI Program Activities:
Focus on Antimicrobial Stewardship

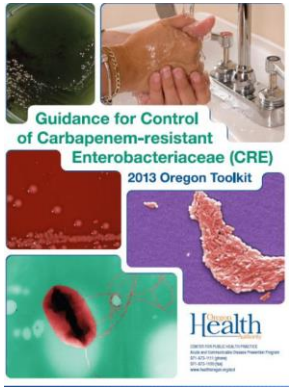
AWARE – Oregon Alliance Working for Antibiotic Resistance Education

Encourage the appropriate use of antibiotics and aims to reduce the problem of antibiotic-resistant bacteria in Oregon

HAI EIP Oregon

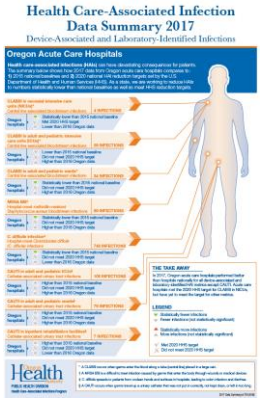
Large scale prevalence studies to inform best national estimates of HAIs and antimicrobial use

DROP-CRE Network



- Detect and contain multidrug-resistant organisms in Oregon
- Provide resources to prevent and control antibiotic-resistant organisms (CRE toolkit, statewide antibiogram)

Reporting via NHSN



- Publish annual reports of healthcare-associated infections in Oregon
- Promote the use of antibiotic use and antibiotic resistance modules in NHSN for ASP efforts

Partners in Prevention & Stewardship

HealthInsight

Oregon Patient Safety Commission

APIC

CDC – Centers for Disease Control and Prevention

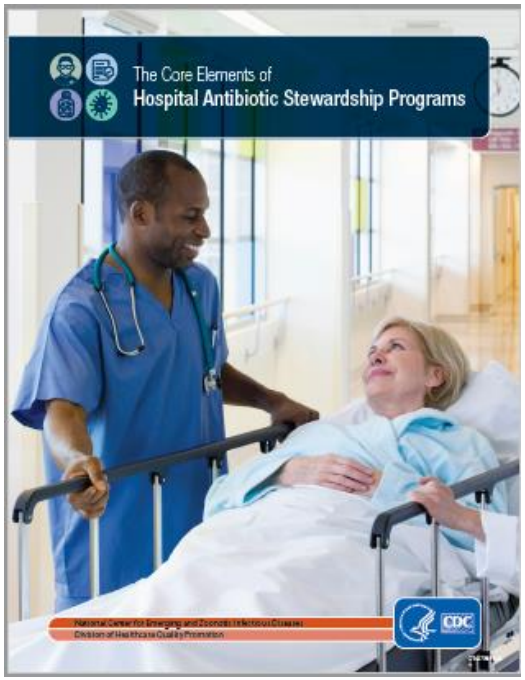
Oregon Association of Hospitals and Health Systems

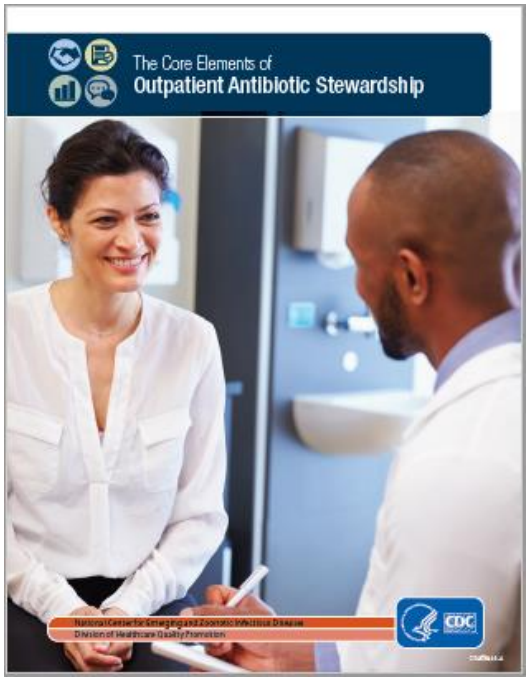
OHSU – Oregon Health & Science University

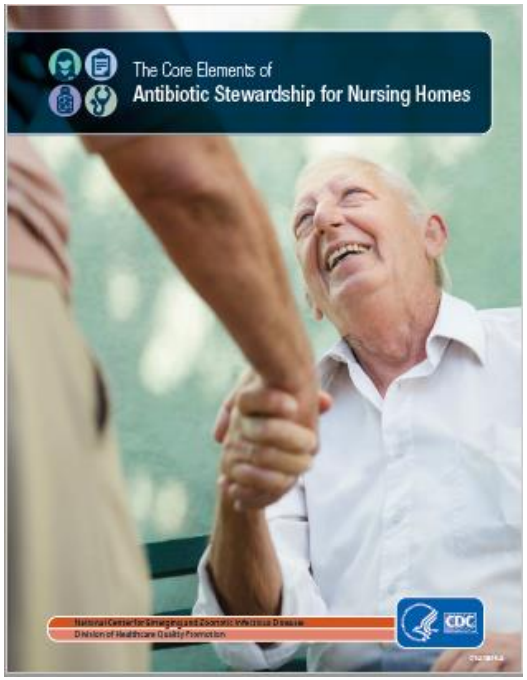
OSU – Oregon State University

Department of Veterans Affairs

Antibiotic stewardship programs (ASP)







https://www.cdc.gov/drugresistance/threat-report-2013/index.html

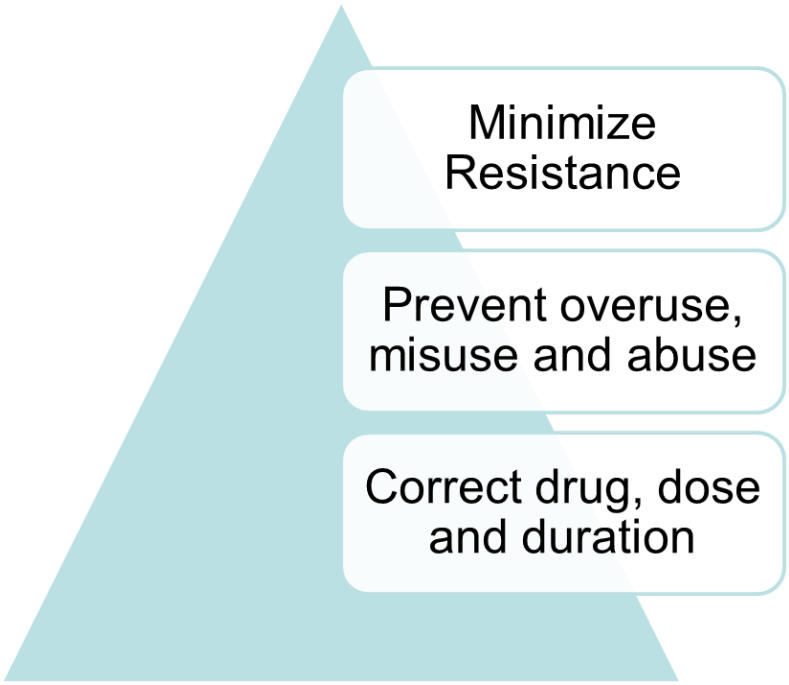
Baur et al. 2017 Lancet Infect Dis

Use the chat box to share ideas.

WHO SHOULD HAVE AN ASP?

Antibiotic Stewardship Program

Goals



Outcomes

Decrease antibiotic use

↓

Decrease antimicrobial resistant bacteria and *C. difficile* infections

↓

Decrease healthcare costs

CDC Core Elements – Outpatient

CDC Core Elements – Hospitals and LTCF

OREGON DATA

Oregon outpatient settings

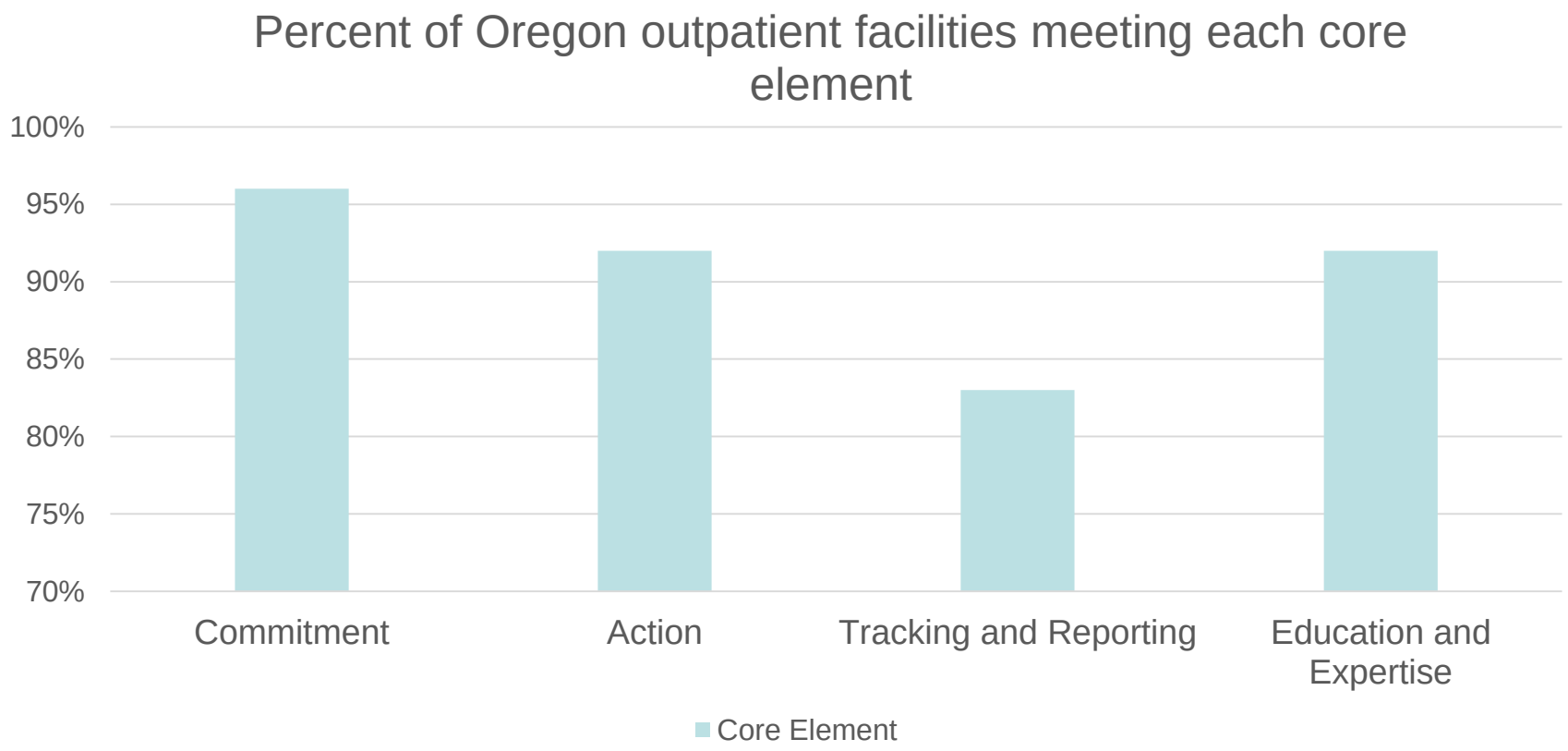
HealthInsight

(through Quality Innovation Network-Quality Improvement Organization):

	Clinics	Urgent Care	EDs
Number of participating sites	169	16	35
Percent meeting all four CDC Outpatient Core Elements	90%	25%	5%
Interventions used	• Webinars • Technical assistance in policy development, tracking and reporting, education and training	• Webinars • Technical assistance • Policy development	
Process or outcome measures	• Assessed prescribing practices within clinics (duration of antibiotic)		
Barriers	• Aligning interventions across all settings		

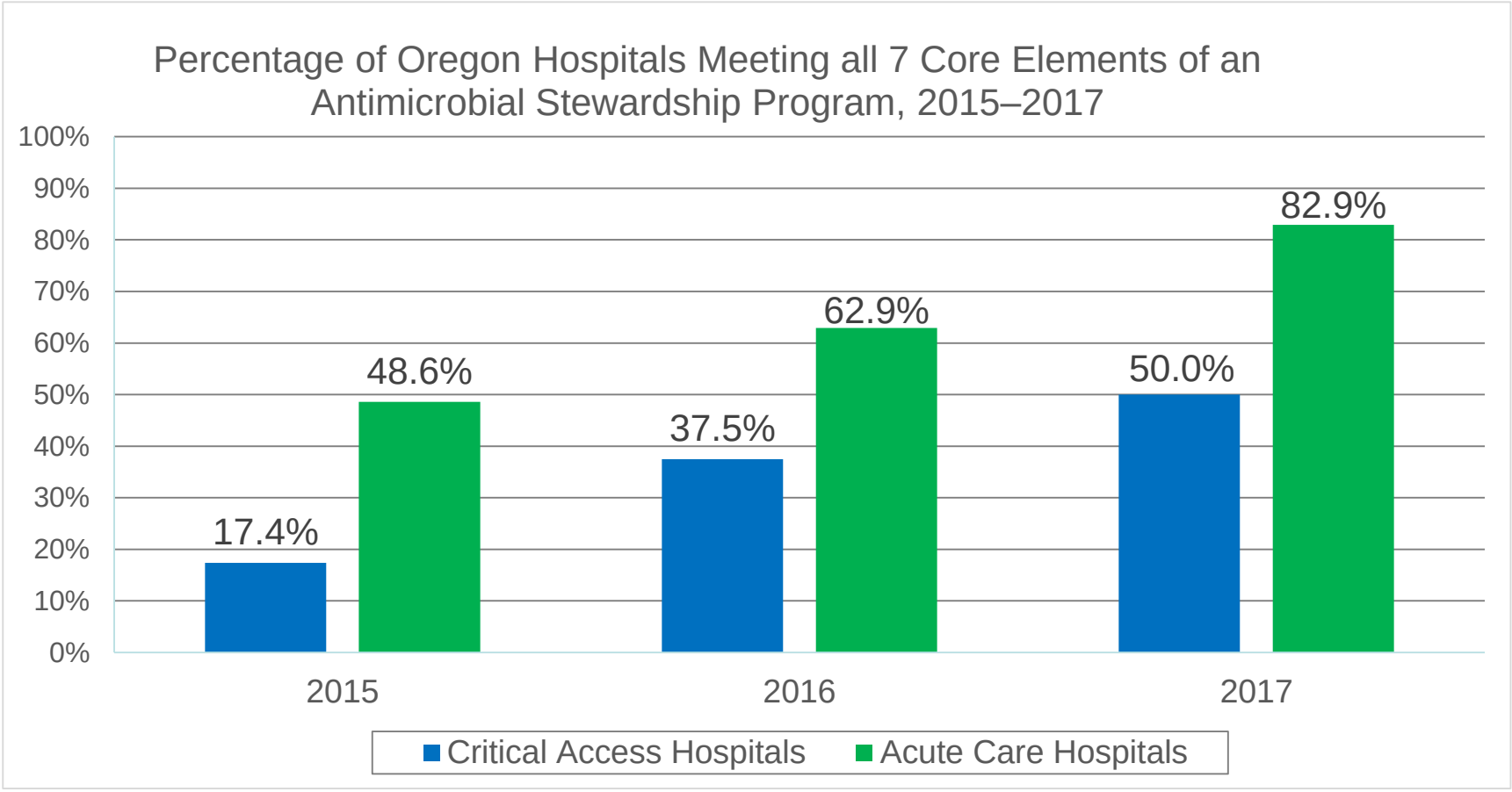
Oregon outpatient settings

(through Quality Innovation Network-Quality Improvement Organization):



Oregon Inpatient Settings:

NHSN Annual Survey results



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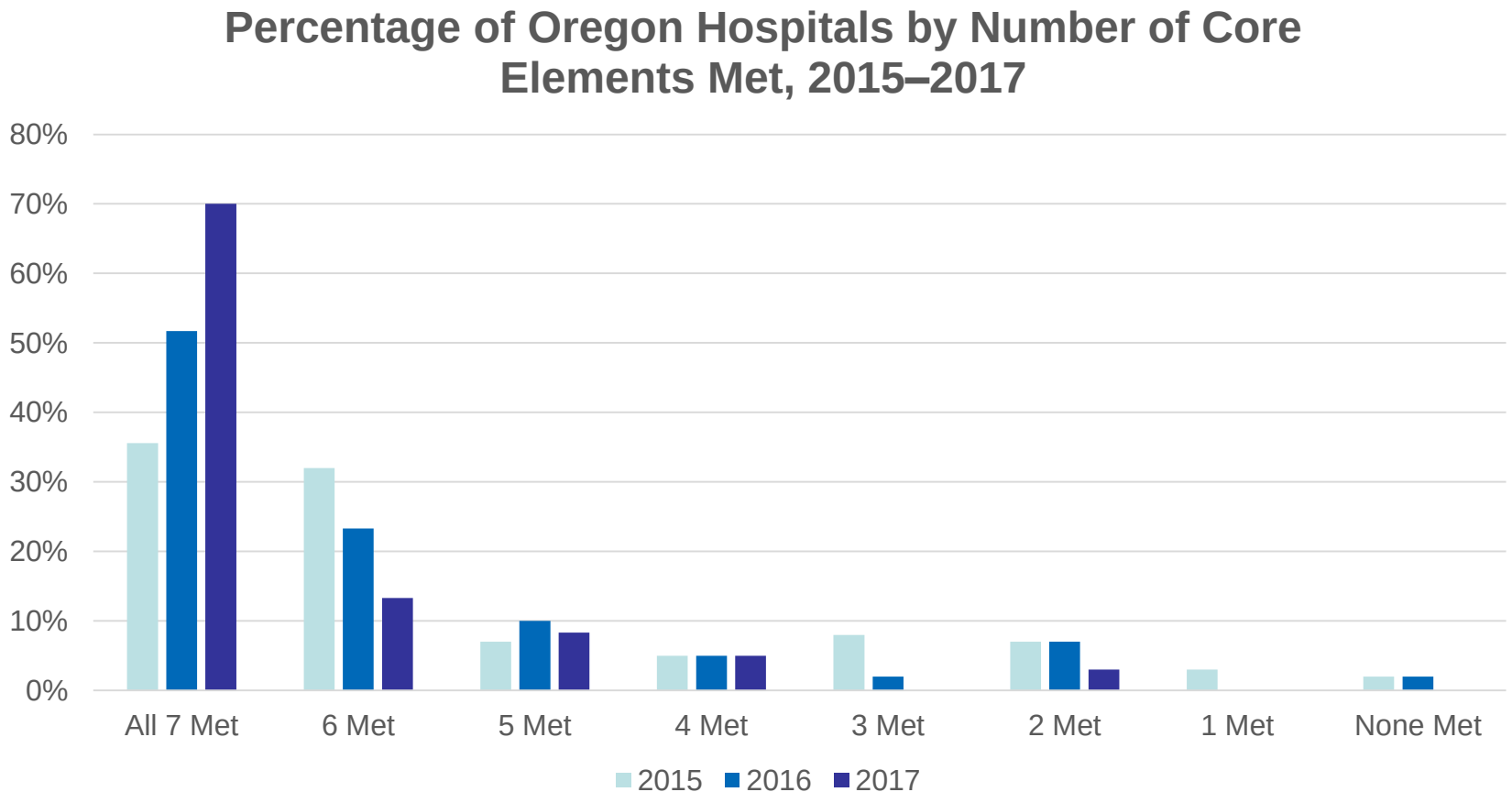

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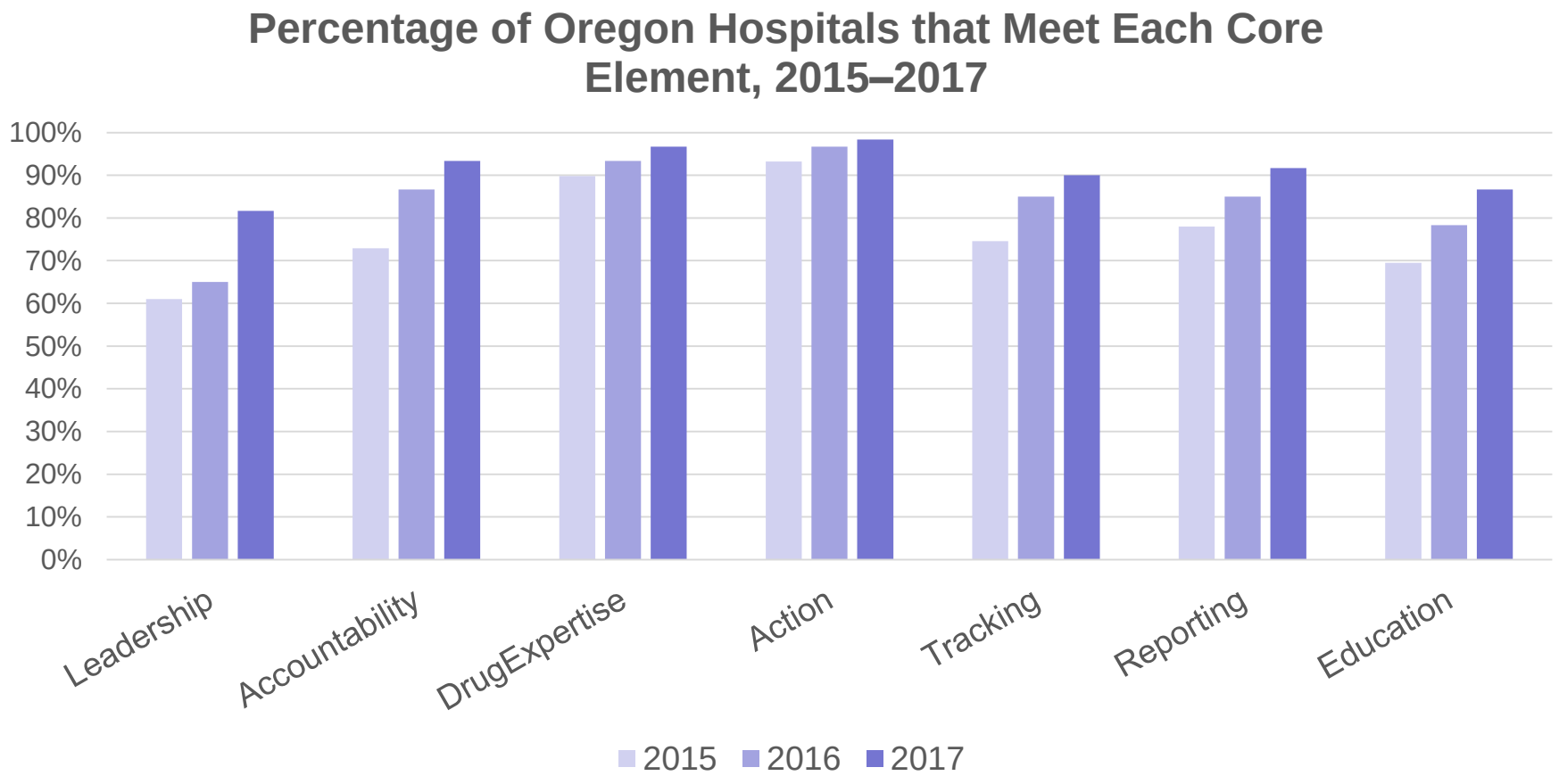


Oregon nursing homes

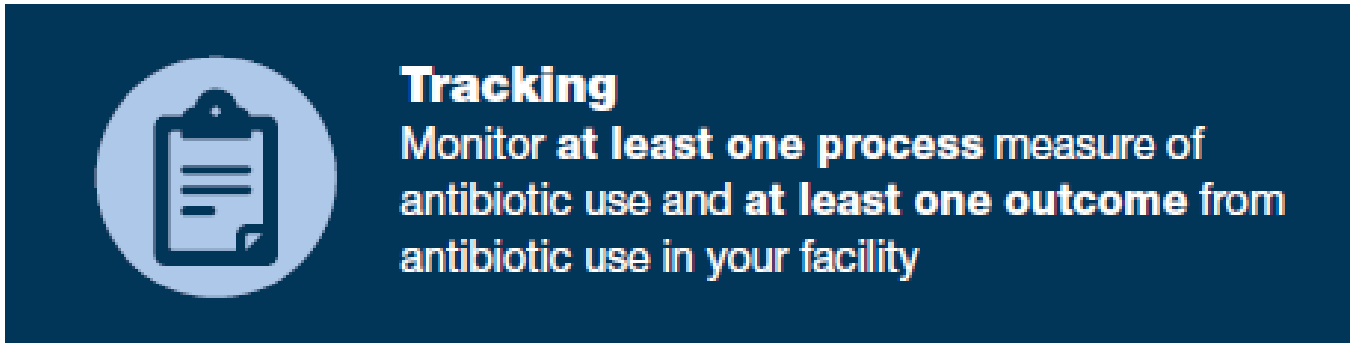
HealthInsight
(through Quality Innovation Network-Quality Improvement Organization):

- 105 participating in Resident Safety Collaborative
  - Encouraged participation in antibiotic stewardship and infection prevention webinars
- 21 homes engaged in *C. difficile* infection (CDI) prevention cohort
  - Entering CDI surveillance data into National Healthcare Safety Network (NHSN) database.
  - HealthInsight measuring number reporting CDI to NHSN, infections/month
- Barriers: cumbersome reporting system; competing priorities/low infection rate; turnover of credentialed staff

Unifying Concepts

Tracking & Reporting

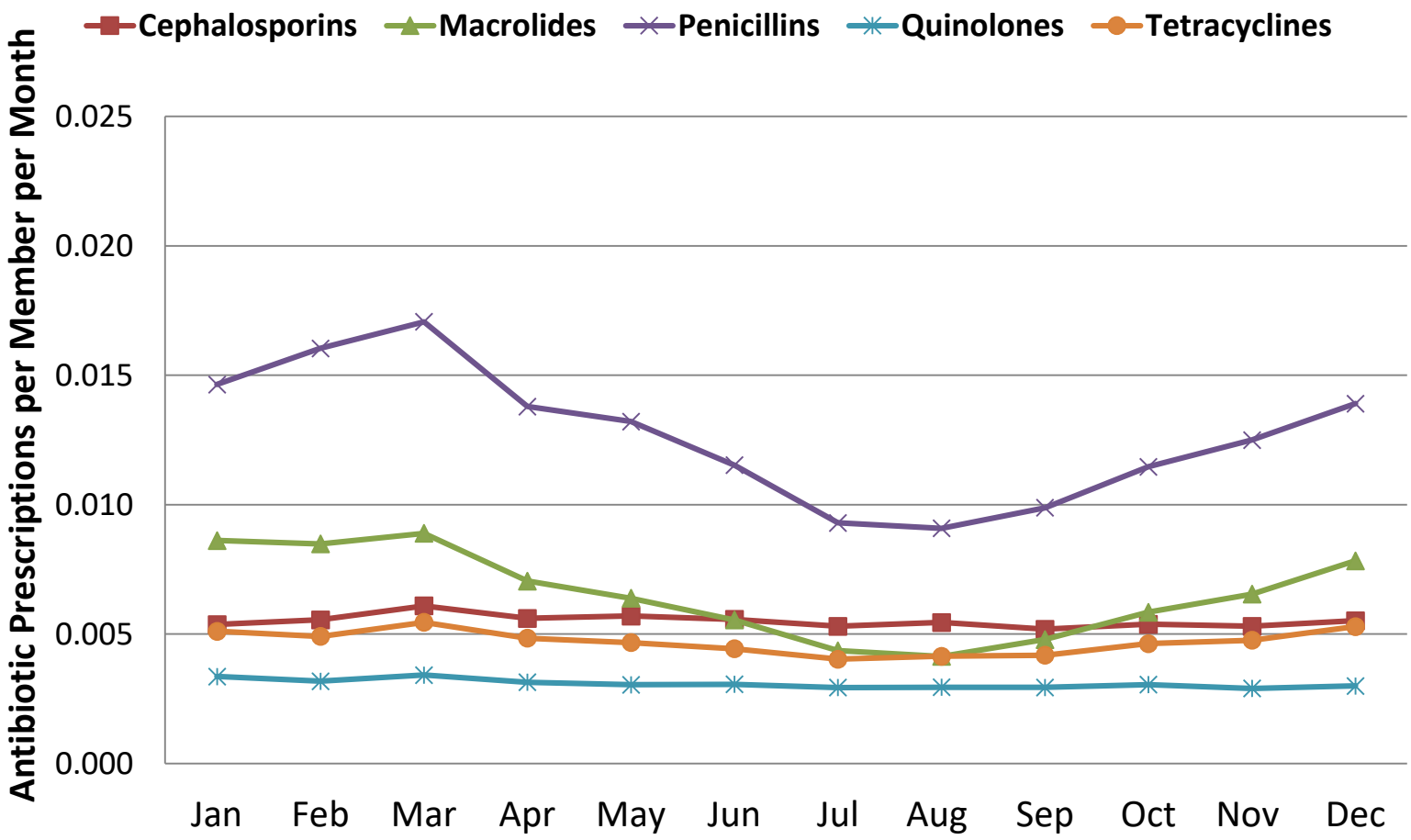
Common challenges



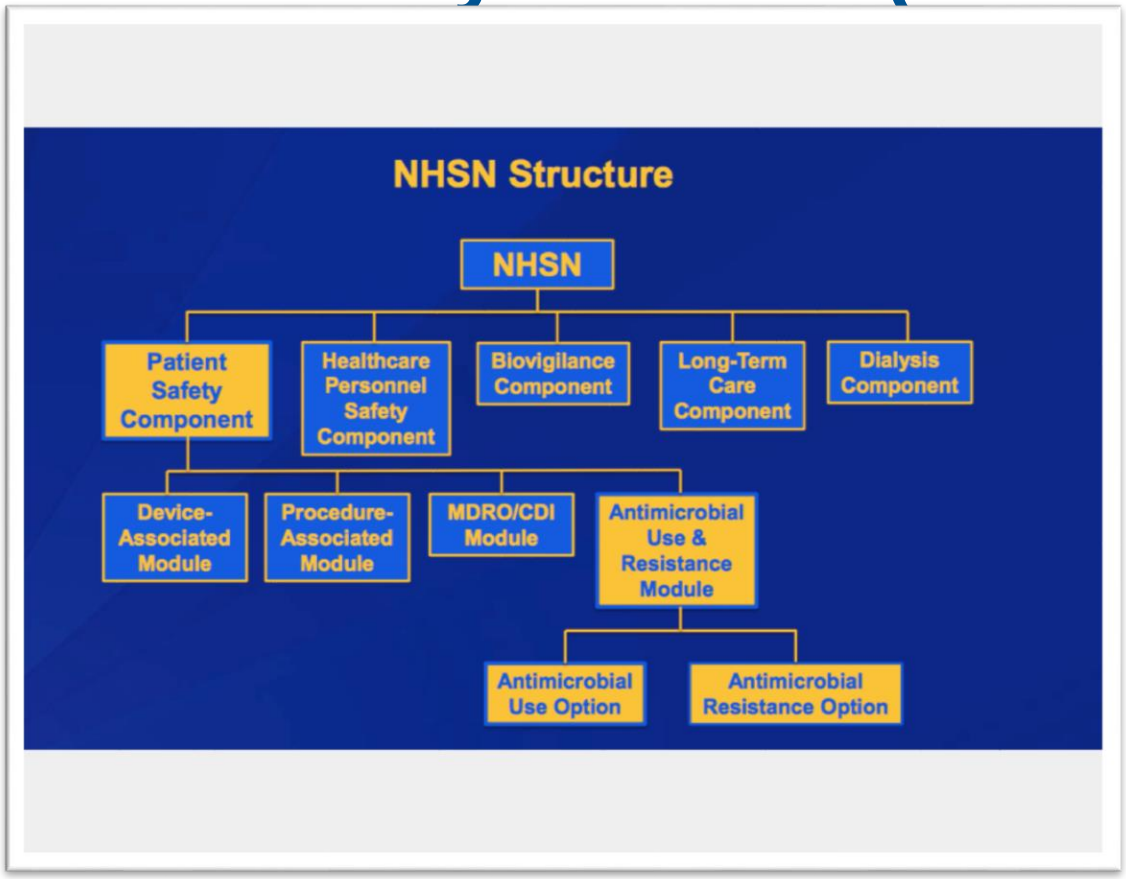
https://www.cdc.gov/antibiotic-use/healthcare/implementation/core-elements-small-critical.html

Oregon health plan data

Oral antibiotic use in 10 Oregon health plans by antibiotic class, 2015-17.



Tracking and Reporting Antibiotic Use and Resistance via the National Healthcare Safety Network (NHSN)



http://www.cdc.gov/nhsn/pdfs/training/aur/aur-training.pdf

Antimicrobial Use (AU) and Antimicrobial Resistance (AR) Module

AU Module

- Provides a mechanism for hospitals to report and analyze antimicrobial use as part of Antimicrobial Stewardship efforts
- Allows for risk-adjusted comparisons of antibiotic use to a national aggregate

AR Module

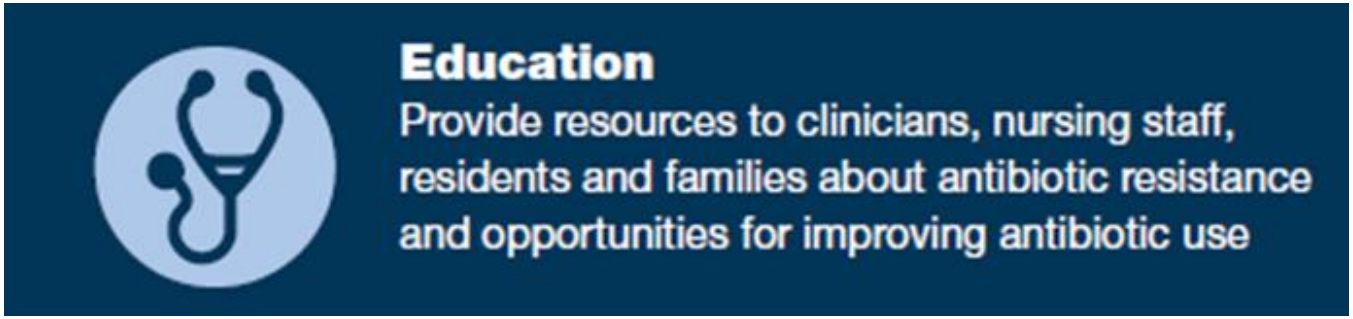
- Facilitates evaluation of antimicrobial resistance data using a standardized approach
- Provides hospitals with improved awareness of a variety of AR issues to aid in clinical decision making and prioritize transmission prevention efforts

Electronic needs

- eMAR or Bar Coding Medication Administration (AU module)
- Electronic Laboratory Information System (AR module)
- Ability to collect and package data using HL7 standardized format

Education

Educate clinicians about resistance and optimal prescribing



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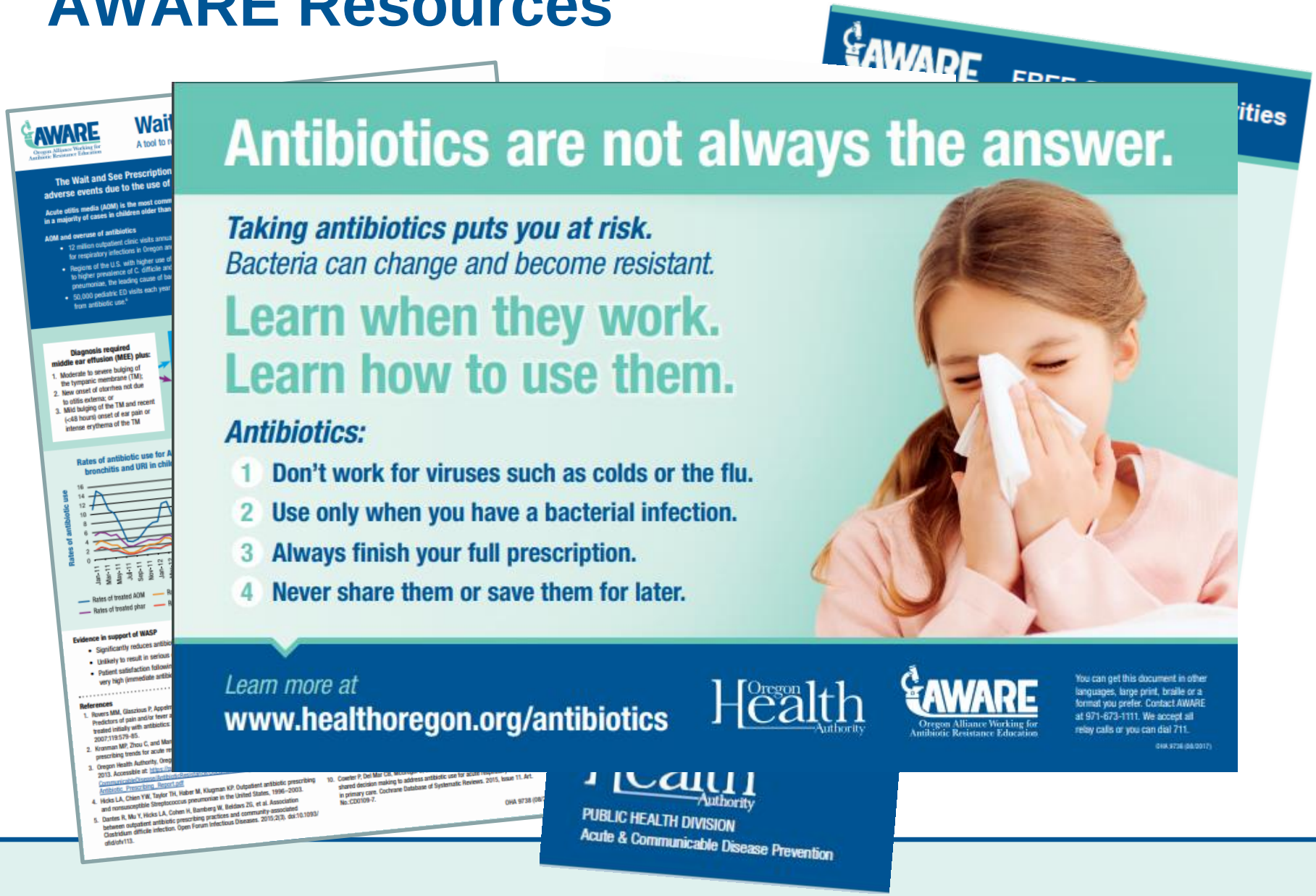
AWARE Resources



NEW! – Oregon Statewide Antibiogram

Also stratified by Portland Tri-county and non Portland Tri-county

Oregon – 1 January- 31 December 2015 Cumulative Antimicrobial Susceptibility Report *

Gram-Positive Isolates: % Susceptible														
	n= †	Penicillin	Ampicillin	Oxacillin	Ceftriaxone	Tetracycline	Linezolid	Daptomycin	Meropenem	Trimethoprim-Sulfamethoxazole	Vancomycin	Clindamycin	Erythromycin	Nitrofurantoin
S. aureus ‡	28471			60%										
MRSA	8858			0%		96%	100%	100%		97%	100%	66%	8%	98%
MSSA	13854	20%		100%		96%	100%	100%		99%	100%	87%	66%	100%
S. pneumoniae	1144					87%	100%		95%	84%	100%	90%	76%	
Meningitis	254	81%			95%									
Non-Meningitis	254	99%			100%									
E. faecalis	7421	99%	99%			21%	99%	100%			99%		32%	99%
E. faecium	578	50%	37%			37%	100%	93%			55%		16%	32%
S. agalactiae	391	100%	100%		100%					100%	100%	56%	54%	

Notes:

* Includes 2015 isolate data compiled from voluntary antibiogram submission of 30 Oregon acute care facilities.
† All isolates not tested against all agents
‡ Total Sample: All S. aureus combined (28471) includes MRSA (8858), MSSA (13854), and S. aureus not otherwise specified (5759).

https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/Documents/OR2015-Antibiogram-handout.pdf

Reducing the spread of antibiotic resistant bacteria

Interfacility Transfer Communication

Healthcare-Associated Infections

Learn about HAIs

For the Public

For Health Professionals

For Health Care Facilities

Long Term Care Facility HAI Toolkit

Publications and Maps

HAI Reporting

HAI Prevention

DROP-CRE Network

HAI Advisory Committee

Preventing Clostridium difficile infection

Interfacility Transfer Communication

Oregon Patient Safety Commission

Transferring Patients with Multidrug-Resistant Organisms (MDRO)

As part of best practice during patient transfers, information about a patient's medical status, including colonization or infection with a multidrug-resistant organism, should travel with a patient and be readily available to medical providers.

On this page:

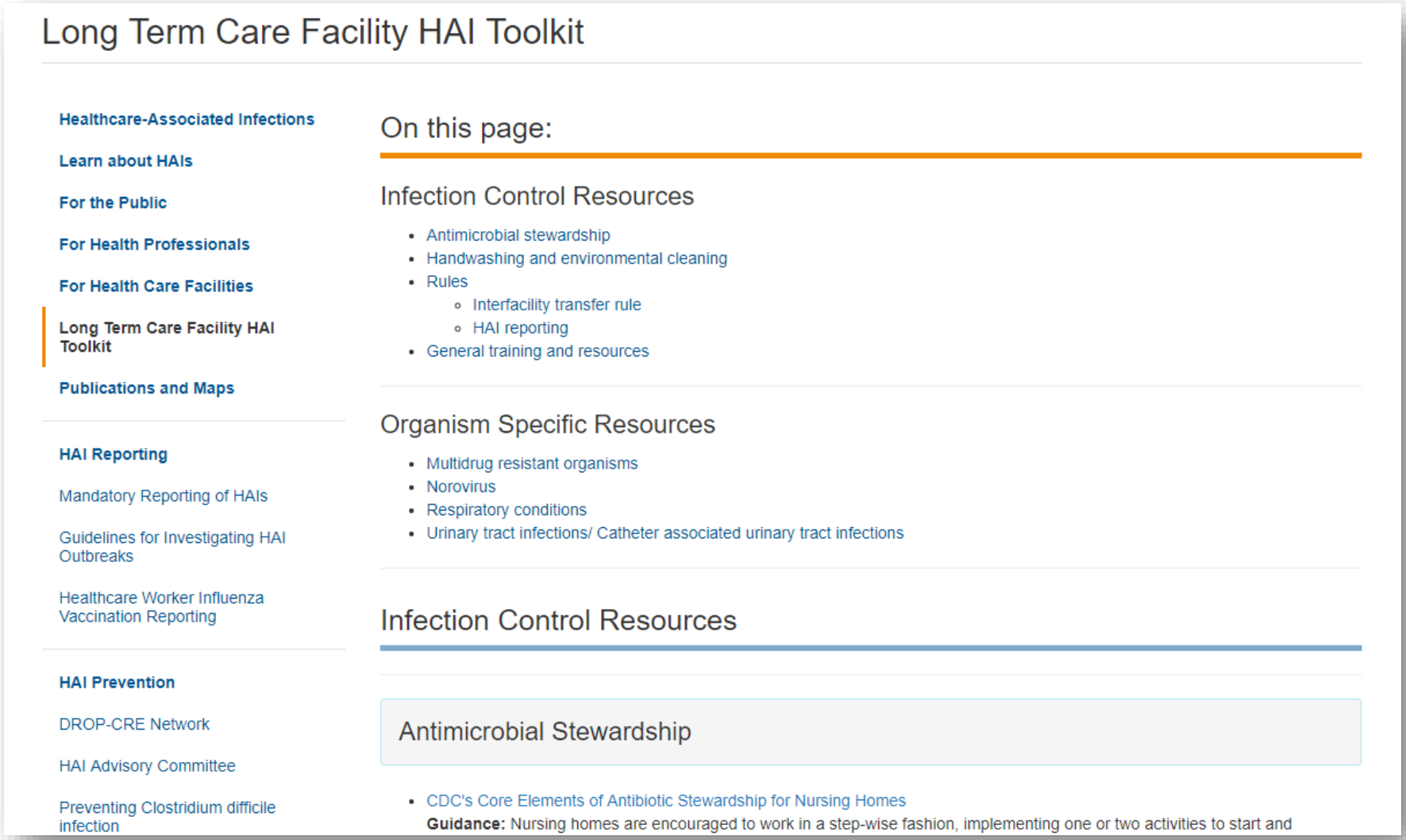
- What does Oregon law require?
- Why are we doing this?
- What should health care facilities do?
- Sample interfacility transfer forms
- Resources

What does Oregon law require?

OAR 333-019-0052 (pdf) - "Communication During Patient Transfer of Multidrug-Resistant Organisms" - sets patient safety expectations about timely communication between health care facilities about multidrug-resistant organisms or pathogens that warrant Transmission-based Precautions. Transmission-based Precautions are disease- or syndrome-specific precautions taken in addition to Standard Precautions, based on the disease or syndrome transmission route and exposure risk (e.g., influenza requires droplet; tuberculosis requires airborne; diarrhea requires contact).

Effective January 1, 2014: When a referring health care facility transfers or discharges a patient who is infected or colonized with a multidrug-resistant organism (MDRO) or pathogen which warrants Transmission-based Precautions, it must include written notification of the infection or colonization to the receiving facility in transfer documents. The referring facility must ensure that the documentation is readily accessible to all parties involved in patient transfer (for example, referring facility, medical transport, emergency department, receiving facility)

Long Term Care Resources



Long Term Care Facility HAI Toolkit

Healthcare-Associated Infections

Learn about HAIs

For the Public

For Health Professionals

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Publications and Maps

HAI Reporting

Mandatory Reporting of HAIs

Guidelines for Investigating HAI Outbreaks

Healthcare Worker Influenza Vaccination Reporting

HAI Prevention

DROP-CRE Network

HAI Advisory Committee

Preventing Clostridium difficile infection

On this page:

Infection Control Resources

- Antimicrobial stewardship
- Handwashing and environmental cleaning
- Rules
  - Interfacility transfer rule
  - HAI reporting
- General training and resources

Organism Specific Resources

- Multidrug resistant organisms
- Norovirus
- Respiratory conditions
- Urinary tract infections/ Catheter associated urinary tract infections

Infection Control Resources

Antimicrobial Stewardship

- CDC's Core Elements of Antibiotic Stewardship for Nursing Homes
  Guidance: Nursing homes are encouraged to work in a step-wise fashion, implementing one or two activities to start and

NEXT STEPS

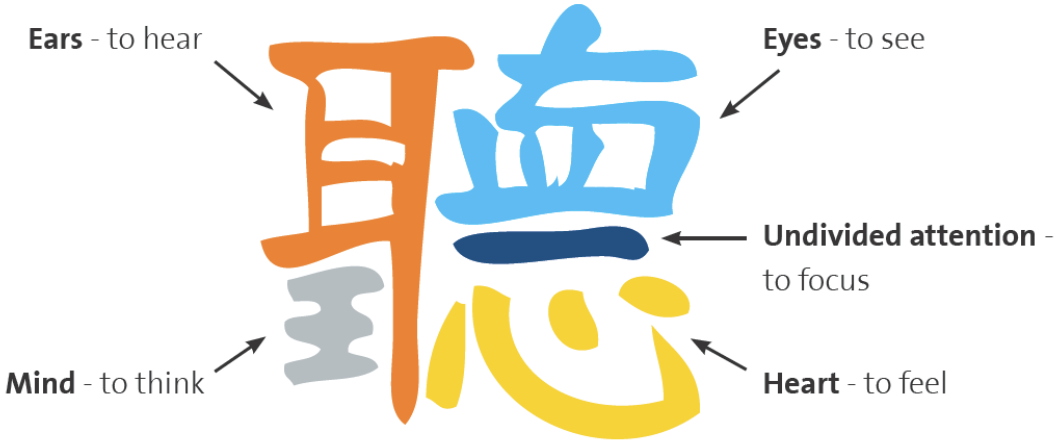
Using data for action

- **Annual Surveys with antimicrobial stewardship questions**
  - **Survey sent to long-term care facilities**
  - **Upcoming survey to hospitals**
- **Collecting Antibiogram Reports from Oregon Laboratories**

Communication

Techniques:
Active Listening

- Seek to understand
- Be non judgmental
- Use silence effectively
- Give undivided attention



http://www.state.gov/m/a/os/65759.htm

“My child has been really sick for days and I want an antibiotic so they can feel better.”

Content reflection

- “You feel that an antibiotic is the solution.”

Feeling reflection

- “You’re worried about your child.”

Meaning reflection

- “You are wanting to take action.”

Key Principles

Express Empathy	• Convey that you understand the other person
Develop Discrepancy	• Current and desired behavior
Roll with Resistance	• Don’t oppose - reframe as momentum toward change
Support Self Efficacy	• Key element to change

https://wicworks.fns.usda.gov/wicworks//WIC_Learning_Online/support/job_aids/MI.pdf

1) Engage

Build a relational foundation

Establish a rapport and build trust

Establish roles in the relationship

Promote mutual buy-in

2) Focus

Develop and maintain a strategic focus

Collaborate on the conversation

Use more of a following and guiding vs directive approach

3) Evoking

- Explore patient's motivation, goals and ideas
- Identify and resolve ambivalence
- Help patient discover reasons for making a change
- Identify barriers to change
- Preparation: Target date, supports, resources

4) Plan

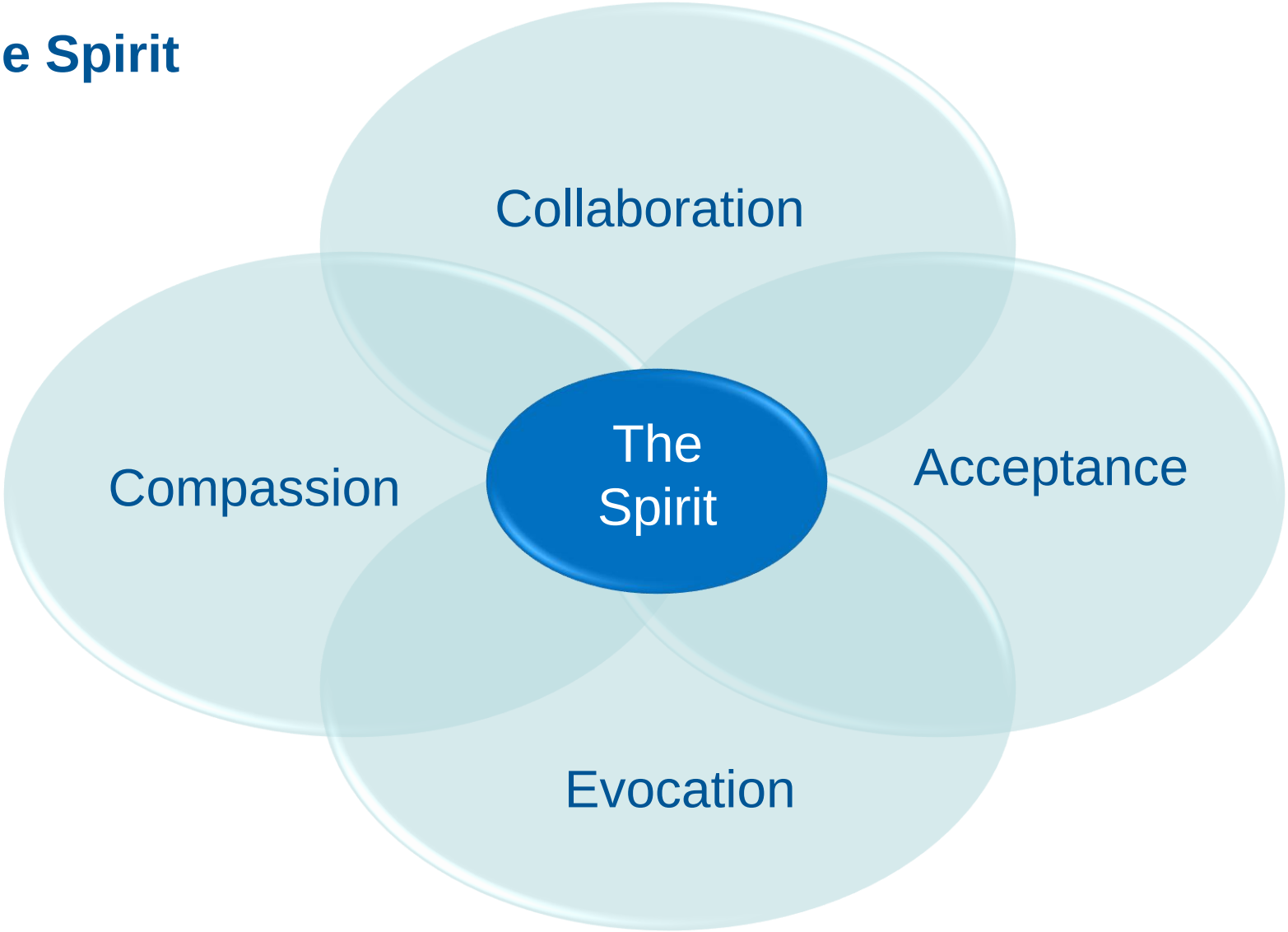
Develop a commitment to change

Focus on the “how”

Collaborate on incremental goals

Include structure, accountability and benchmarks

The Spirit


Collaboration
Compassion
The Spirit
Acceptance
Evocation

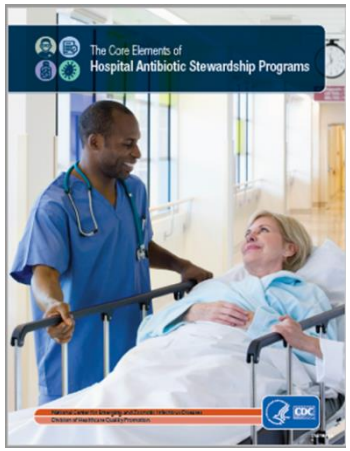
EVALUATION QUESTION

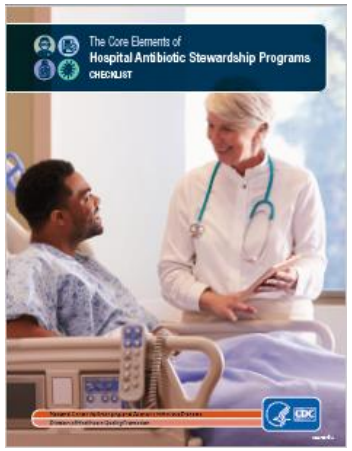
Alyssa.k.mcclean@state.or.us
Lisa.c.takeuchi@state.or.us

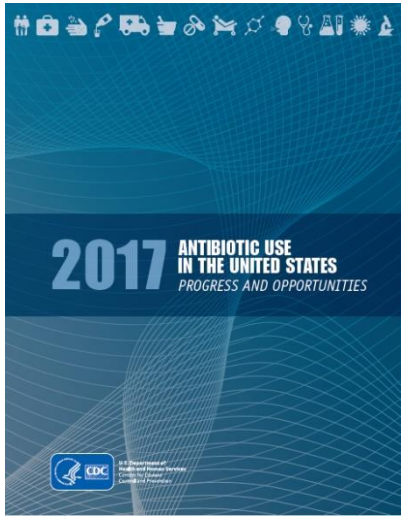
THANK YOU

CDC Resources

- Implementation of Antibiotic Stewardship Core Elements
- Core elements checklist
- Antibiotic Use in the United States: Progress and Opportunities
- CDC's Antibiotic Stewardship Training Series







More resources

- Minnesota Department of Health resources: Minnesota Guide to a Comprehensive Antimicrobial Stewardship Program
- Implementing an Antibiotic Stewardship Program: Guidelines by the Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America: https://academic.oup.com/cid/article/62/10/e51/2462846
- National Quality Form. National Quality Partners Playbook: Antibiotic Stewardship in Acute Care: http://www.qualityforum.org/Publications/2016/05/National_Quality_Partners_Playbook__Antibiotic_Stewardship_in_Acute_Care.aspx

OHA Resources

- CRE toolkit
- Oregon AWARE
- Recommendations for specific MDROs
- Long Term Care Facility HAI toolkit