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# Implementing Core Elements of Antibiotic Stewardship in Critical Access Hospitals

Oregon Healthcare-associated Infections Program

Lunch and Learn Webinar

February 26, 2020



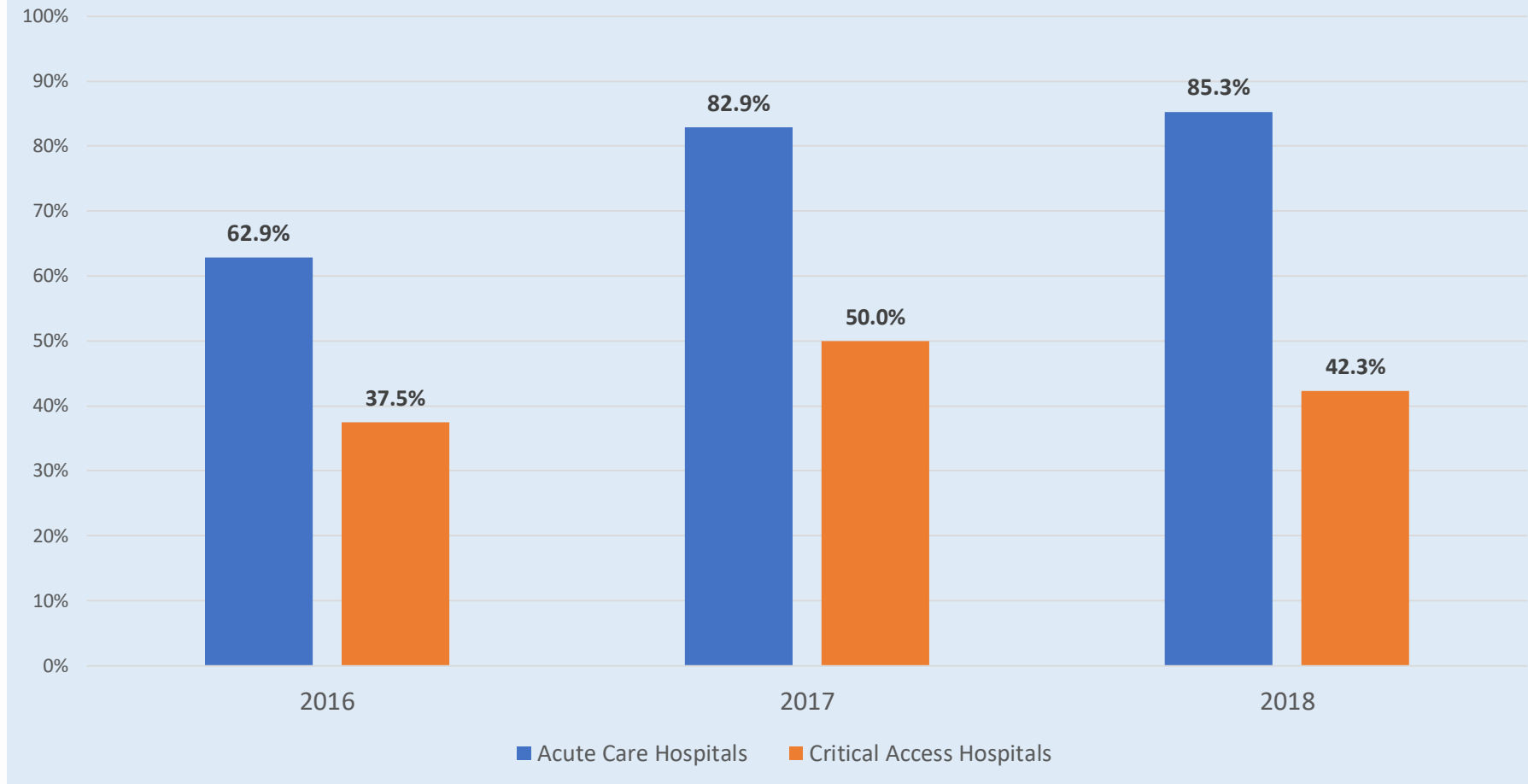
# CDC Core Elements



The infographic is set against a dark blue background and features six circular icons, each representing a core element. The icons are arranged in two columns of three. The left column icons are: a man in a suit (Leadership commitment), a woman in a lab coat (Accountability), and a pill bottle (Drug expertise). The right column icons are: a person with a cross (Action), a clipboard (Tracking), a virus (Reporting), and a stethoscope (Education). Each icon is accompanied by a bold title and a descriptive paragraph.

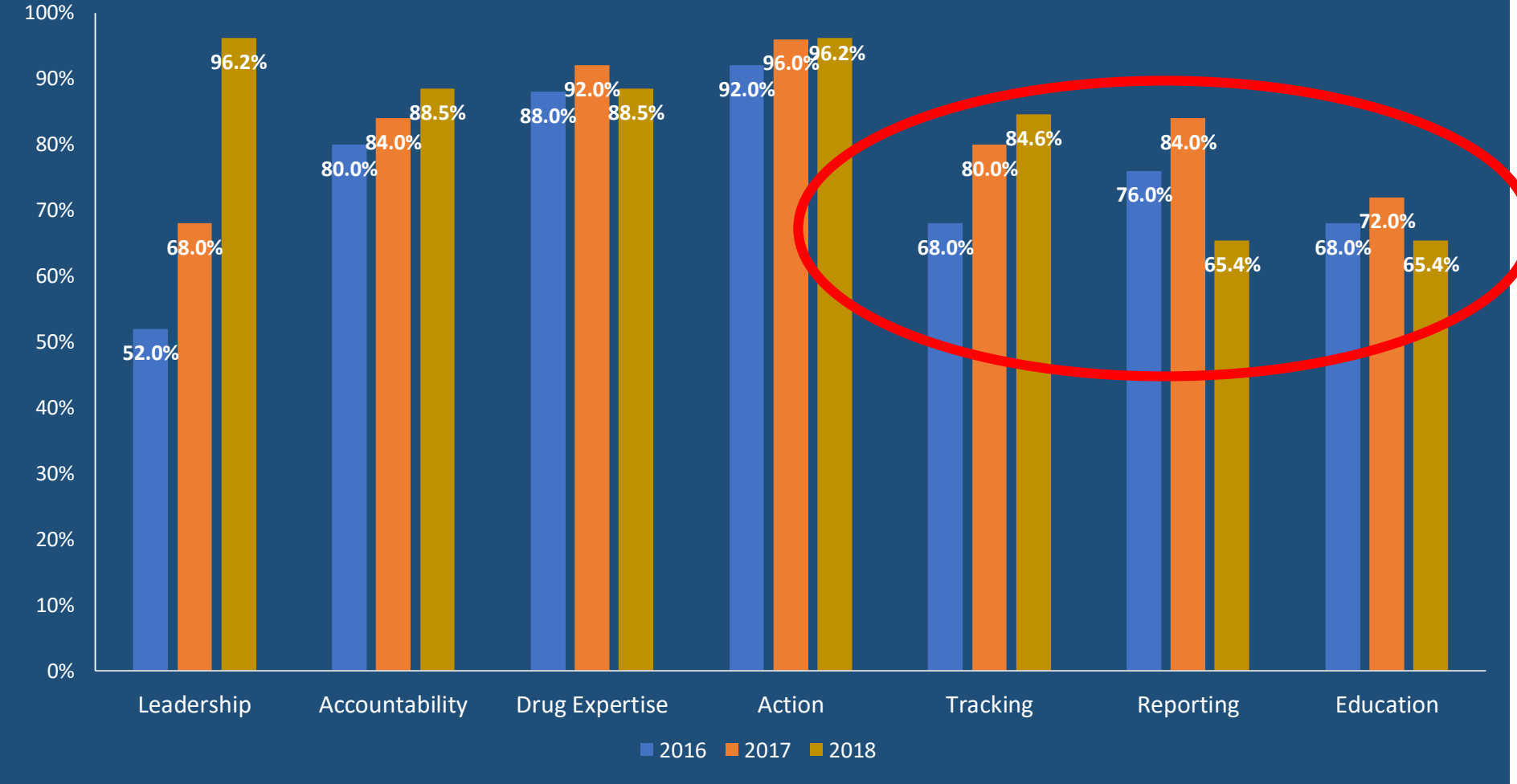
	<b>Leadership commitment</b> Demonstrate support and commitment to safe and appropriate antibiotic use in your facility		<b>Action</b> Implement <b>at least one</b> policy or practice to improve antibiotic use
	<b>Accountability</b> Identify physician, nursing and pharmacy leads responsible for promoting and overseeing antibiotic stewardship activities in your facility		<b>Tracking</b> Monitor <b>at least one process</b> measure of antibiotic use and <b>at least one outcome</b> from antibiotic use in your facility
	<b>Drug expertise</b> Establish access to consultant pharmacists or other individuals with experience or training in antibiotic stewardship for your facility		<b>Reporting</b> Provide regular feedback on antibiotic use and resistance to prescribing clinicians, nursing staff and other relevant staff
			<b>Education</b> Provide resources to clinicians, nursing staff, residents and families about antibiotic resistance and opportunities for improving antibiotic use

## Percentage of Oregon Hospitals Meeting all 7 Core Elements of an Antimicrobial Stewardship Program, 2016–2018



Data from the NHSN Annual Surveys

# Percentage of Oregon Critical Access Hospitals that Meet Each Core Element, 2016–2018



Data from the NHSN Annual Surveys

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## Omnibus Burden Reduction (Conditions of Participation) Final Rule CMS-3346-F

Sep 26, 2019 | Initiatives, Legislation, Physicians

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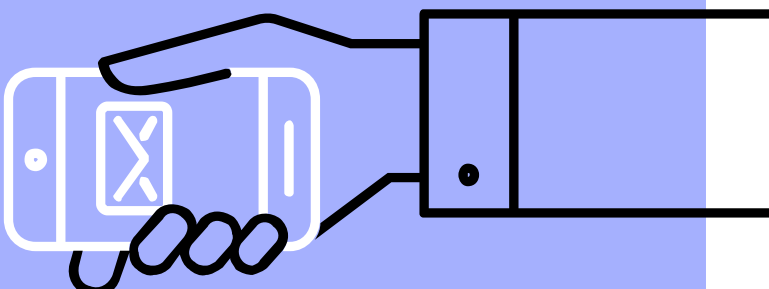
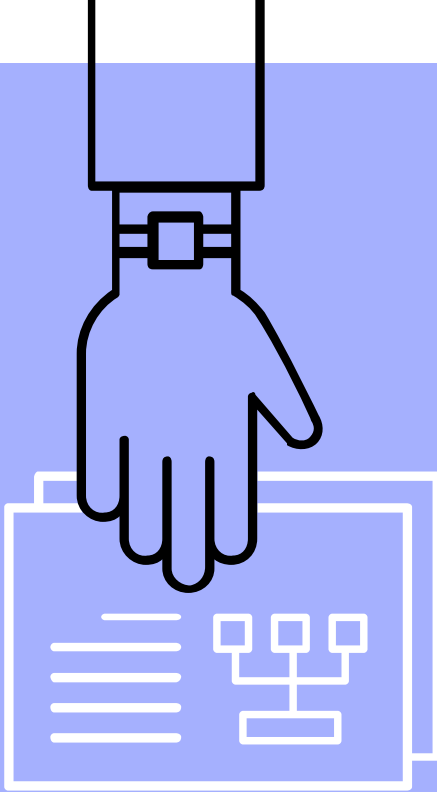


### Omnibus Burden Reduction (Conditions of Participation) Final Rule CMS-3346-F

On September 26, 2019, the Centers for Medicare & Medicaid Services (CMS) took action at President Trump’s direction to “cut the red tape,” by reducing unnecessary burden for American’s healthcare providers allowing them to focus on their priority – patients. The Omnibus Burden Reduction (Conditions of Participation) Final Rule removes Medicare regulations identified as unnecessary, obsolete, or excessively burdensome on hospitals and other healthcare providers to reduce inefficiencies and moves the nation closer to a healthcare system that delivers value, high quality care and better outcomes for patients at the lowest possible cost.

# Today's Speakers

- Dr. Dominic Chan  
Clinical Coordinator  
Legacy Health
- Kira Buresh  
Quality Improvement Specialist  
St. Charles Prineville Hospital



# Centers of Medicare & Medicaid Services: Conditions of Participation in Critical Access Hospitals (CAH)

## Antimicrobial Stewardship



Dominic Chan, PharmD, BCPS AQ-ID

Legacy Health

On behalf of OHA

## Agenda

- ▶ Describe the timeline for implementation
- ▶ Describe elements of the CMS conditions of participation (CoP) for antimicrobial stewardship (AS)
- ▶ Evaluate the differences between TJC/DNV & CMS (AS) requirements





“

Federal Register / Vol. 84, No. 189  
September 30, 2019

§ 482.42 (d) Infection prevention  
and control and antimicrobial  
stewardship programs

Page 51820



## Timeline for Implementation:

6 months after the effective date of the final rule



## CMS Philosophy for Antimicrobial Stewardship

“...By adding ‘antibiotic stewardship’ to the title [of the CoP], we would emphasize the important role that a hospital should play in combatting antimicrobial resistance through implementation of a robust stewardship program that follows nationally recognized guidelines for appropriate antibiotic use.”



# Quality Improvement

- ▶ Adherence to best practices for improving antibiotic use
- ▶ Antibiotic issues identified in the program must be addressed in collaboration with the hospital-wide quality assessment and performance improvement (QAPI) program

## Leadership

- ▶ Individual(s) qualified through education, training or experience in ID / antibiotic stewardship, appointed by the governing body as the leader(s) of the antibiotic stewardship program
- ▶ Appointment is based on the recommendations of medical staff leadership and pharmacy leadership

## Documentation

- ▶ Demonstrates coordination among all components of the hospital responsible for antibiotic use & resistance (IPC, QAPI, medical staff, nursing services, pharmacy services)
- ▶ Documents the evidence-based use of antibiotics in all departments and services of the hospital
- ▶ Documents any improvements, including sustained improvements, in proper antibiotic use

## Processes & Activities

- Adheres to nationally recognized guidelines, as well as best practices for improving antibiotic use
- Reflects the scope and complexity of the hospital services provided

## Education

- ▶ Competency-based training & education of hospital personnel/staff, including medical staff/contracted services on practical applications of antibiotic stewardship guidelines, policies and procedures



# Health System Antimicrobial Stewardship

Unified & integrated program allowed, but must demonstrate:

- ▶ Takes into account each member hospital's unique circumstance/significant different patient populations/services
- ▶ Policies/procedures ensure the needs/concerns of each hospital given due consideration
- ▶ Issues localized to particular hospitals are duly considered and addressed
- ▶ Qualified individual(s) with expertise designated at the hospital as responsible for communicating with the united ASP for implementing and maintaining policies and procedures governing antibiotic stewardship as directed by the unified program & for providing education and training

# How are the CMS CoP different than TJC or DNV?

## CMS Emphasizes:

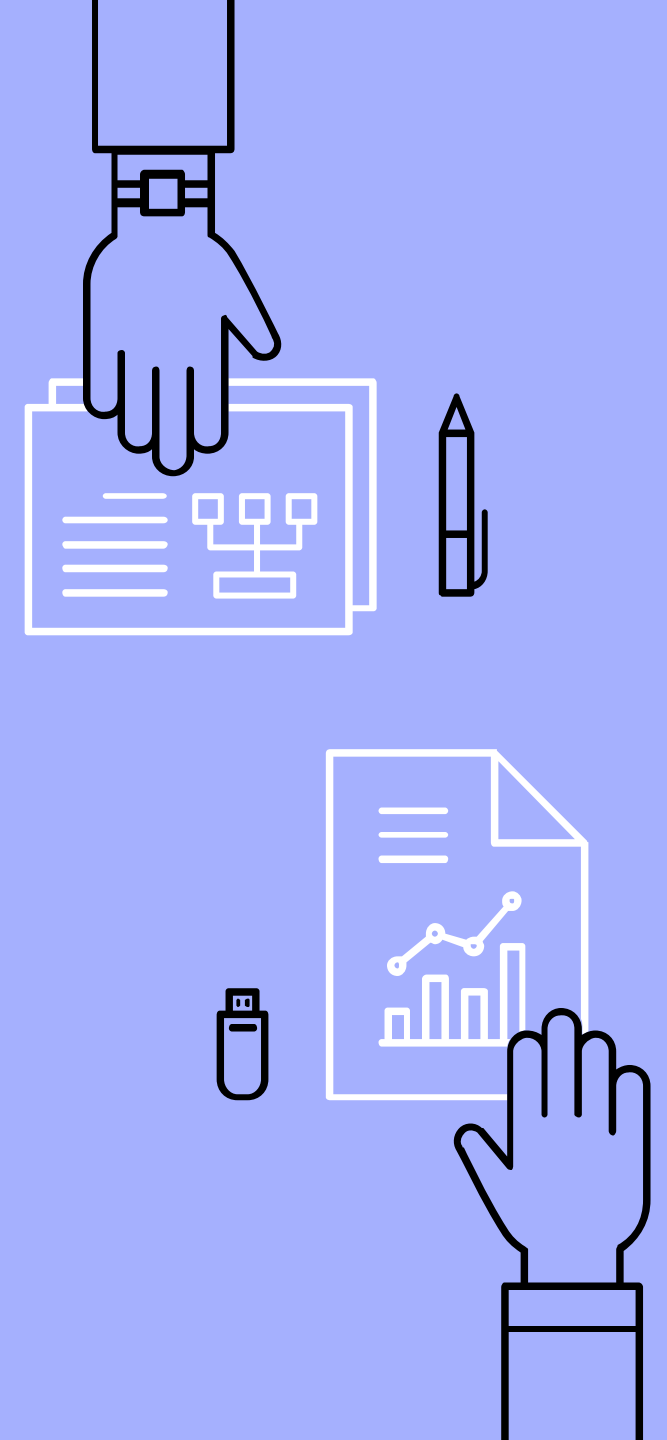
- ▶ Documentation
- ▶ Sustainability
- ▶ Collaboration
- ▶ Systematic quality improvement
- ▶ Flexibility



## CMS Philosophy for Antimicrobial Stewardship

“... a certain degree of latitude must be left in the requirements to allow for innovations in medical practice that improve the quality of care and move toward the reduction of medical errors and patient harm.

Therefore, we intentionally built flexibility into the revised regulations by proposing language that requires hospitals to demonstrate adherence to nationally recognized guidelines (and best practices where applicable).”



# Take Aways & Recommendations

## One

Documentation will be key.

Conduct a *documentation* gap analysis of your existing program (e.g. with the CDC ASP Assessment Tool\*)

## Two

CMS may expect a formal appointment process

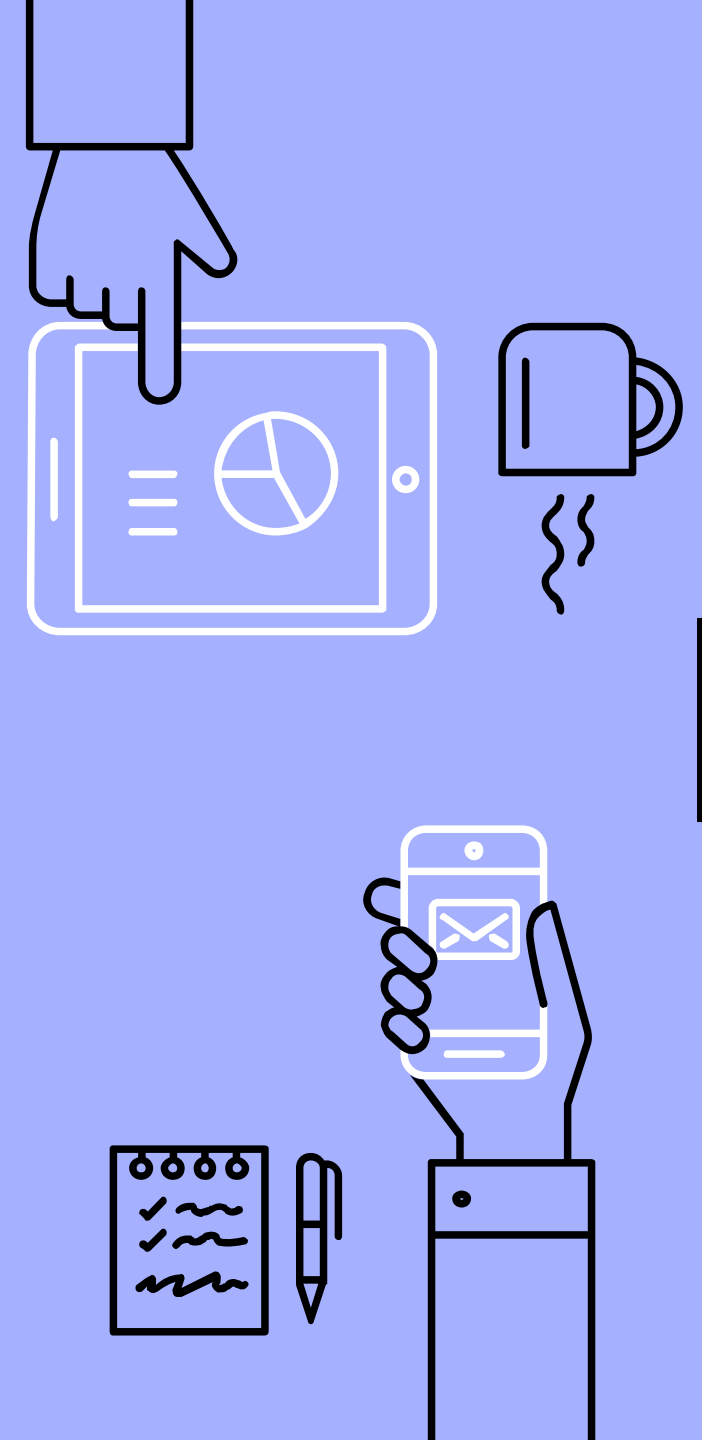
Engage medical leadership and assimilate applicable workflow in medical staff president appointment

## Three

Engage your department of quality to establish systematic quality improvement that satisfies CMS methodology

Engage your regulatory group re: how CMS surveys differ from TJC/DNV/other surveys

\* <https://www.cdc.gov/antibiotic-use/core-elements/hospital.html>



# Additional Take Aways & Recommendations specific to CAHs

## One

CMS recognizes the limited resources in CAHs and has stated support

Ask for help.

CMS Contact:

Scott Cooper  
410-786-9465

## Two

CMS has changed annual review of policies to biennial review

Prioritize policy review according to patient-need, but take advantage of the more relaxed review schedule

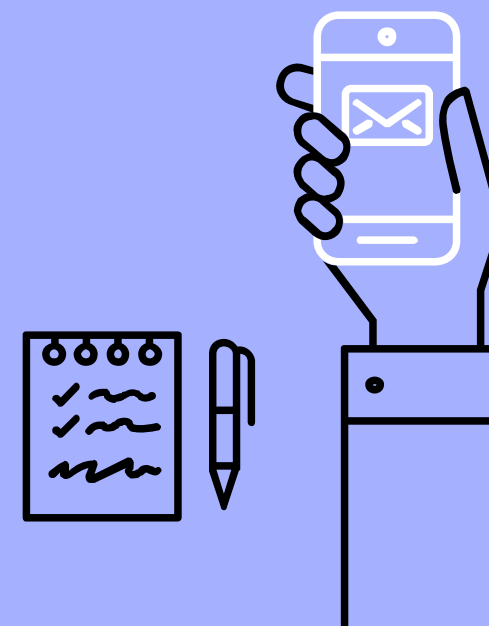
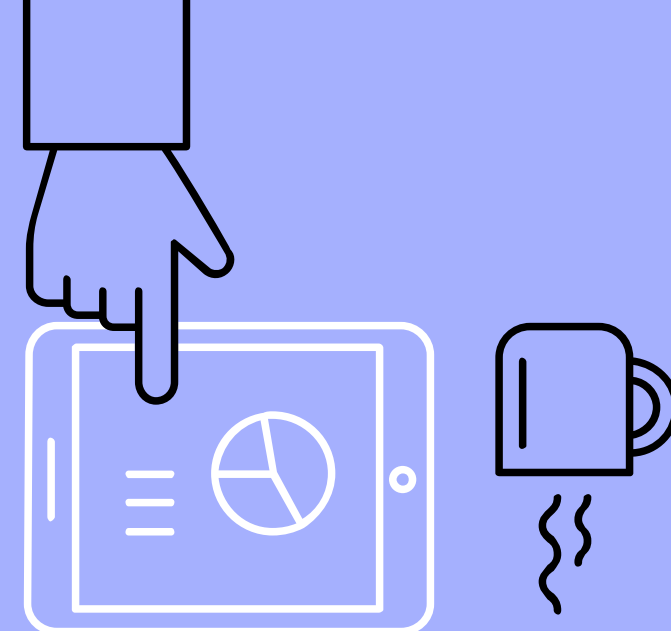
## Three

Limited personnel  
Short term: Use grants to assist with acquiring trained individuals

CMS allows for a single individual to lead both the Infection Control & ASP *if* they possess proper training

Pg. 51780

\* <https://www.ruralhealthinfo.org/states/oregon/funding> & <https://www.oregon.gov/oha/Pages/Grants-Contracts.aspx>





Questions?

[dchan@lhs.org](mailto:dchan@lhs.org)



[@domkchan](https://twitter.com/domkchan)

Creating America's healthiest community, together.



# Antimicrobial Stewardship

February 26, 2020

# Antimicrobial Stewardship Committee

The Antimicrobial Stewardship Committee is chaired by the Medical Director for infection prevention and membership will consist of representatives from:

Antimicrobial stewardship pharmacist (co- chair)

Executive sponsor (Chief Quality & Safety Officer)

- Hospital and community medical providers
- Microbiology
- Direct care nurse
- Infection prevention
- Medication Safety Officer
- Pharmacy leadership
- Nursing leadership
- Information Technology

The Medical Director for Infection Prevention may appoint ad hoc committees and/or work groups as needed to achieve the goals of the ASC.



# Roles and Responsibilities of Members

The Antimicrobial Stewardship Committee is an interdisciplinary collaborative committee to provide leadership and direction for developing policies, procedures, and overseeing:

- Executive Leadership and Operational Commitment: Dedicating necessary human, financial and information technology resources.
- Accountability: Collaboration between the Medical Director for infection prevention pharmacy, providers, infection prevention, and the medication safety officer to achieve program outcomes.
- Drug Expertise: Appointing a single pharmacist expert responsible for working to improve antibiotic use.
- Action: Evaluation of antibiotic use improvement opportunities, prioritization, and implementation of policies and specific interventions that support optimal antibiotic use.
- Tracking: Monitoring antibiotic prescribing and resistance patterns.
- Reporting: Regular reporting information on antibiotic use and resistance to providers, nurses and relevant staff and committees.
- Education: Educating practitioners, staff, and patients on the antimicrobial program, which includes information about resistance and optimal prescribing

# Antimicrobial Stewardship Checklist

Requirement	Yes	No	Notes or Actions Taken if Needed
EP 1 – Leaders establish antimicrobial stewardship as a priority			
EP 2 – Staff and licensed independent practitioners involved in antimicrobial ordering, dispensing, administration, and monitoring are educated about antimicrobial resistance and antimicrobial stewardship practices. Education is at the time of hire or granting of privileges and periodically thereafter.			
EP 3 – Patients and families are educated about appropriate use of antimicrobial medications, including antibiotics.			
EP 4 – There is a multidisciplinary team to include: infectious disease physician, infection preventionist(s), pharmacist(s), practitioner			

EP 5 – The antimicrobial stewardship program includes: <ul style="list-style-type: none"> <li>. leadership commitment</li> <li>. accountability</li> <li>. drug expertise</li> <li>. action</li> <li>. tracking</li> <li>. reporting</li> <li>. education</li> </ul>			
EP 6 – The antimicrobial stewardship program uses organization-approved multidisciplinary protocols			
EP 7 – The hospital collects, analyzes, and reports data on the antimicrobial stewardship program.			
EP 8 – Action is taken on improvement opportunities identified in the antimicrobial stewardship program.			

# AMS Program Pharmacy Initiatives

- Weekly ID rounds with ID physician
  - Drug/bug mismatch
  - Drug/lab mismatch
  - De-escalation
- IV to PO conversion protocol
- Renal dosing protocol
- Vancomycin and aminoglycoside consults/protocol
- Restricted antibiotics

# Epic Scoring Tool for Pharmacists

Refreshed 2 minutes ago Search Current Locat...

Current Diet Order	Inter Need	Daily Moni	RX Cons	Othe Moni	Clinical Score	To Do	Phar Educ
---		●	●	●	17 ↑ 12 👤 24 hrs...	Warfarin per Rx; on PTA ...	📄
---	●		●		15 ↑ 4 👤 22 hrs...	Vanco per RX Trough 2/...	---
---					13	Warfarin	

8224 Bed: 8224

ew More Clinical Scoring Overview

### Antimicrobial Stewardship

Total Score: 1

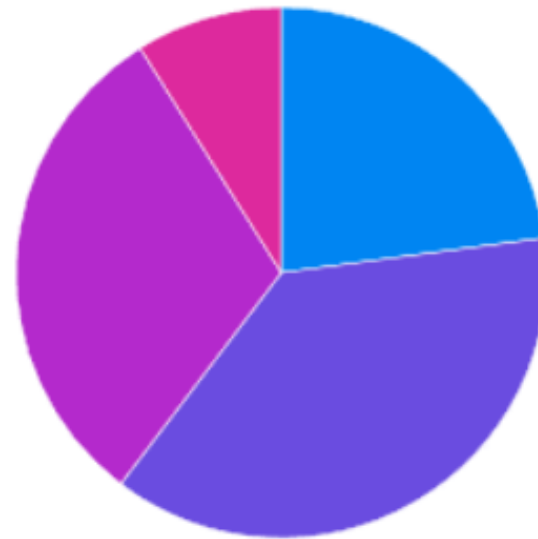
1 Antimicrobial Stewardship - Drug-Lab Mismatch

**Criteria that do not apply:**

- Antimicrobial Stewardship - Antimicrobial with potential IV to PO conversion
- Antimicrobial Stewardship - Broad Spectrum Antibiotic
- Antimicrobial Stewardship - Bug-Drug Mismatch
- Antimicrobial Stewardship - De-escalation Opportunity
- Antimicrobial Stewardship - Duplicate
- Antipseudomonal Coverage
- Antimicrobial Stewardship - Restricted Antimicrobials
- Antimicrobial Stewardship - Unnecessary Duplicate Coverage


# Pharmacist Intervention Documentation

Antimicrobial Stewardship I-Vent Distribution



- AMS - Bug-Drug Mismatch
- AMS - De-Escalation
- AMS - Duration of Therapy
- AMS - IV to PO

# Infection and Syndrome Specific Interventions

 **Orders** ↑

Order Sets Clear All Orders

General Adult Antibiotics by Infection Site ⤴

**The combination of vancomycin and piperacillin/tazobactam has been associated with an increased risk of acute renal failure and is highly discouraged.**

Navalkele B, et al. Risk of Acute Kidney Injury in Patients on Concomitant Vancomycin and Piperacillin-Tazobactam Compared to Those on Vancomycin and Cefepime, *Clinical Infectious Diseases*. 2017; 64 (2): 116-123.

▼ Medications

▼ Antibiotics

- Community Acquired Pneumonia
- Severe Community Acquired Pneumonia or Risk Factors for Pseudomonal Infection
- Urine
- Abdominal
- Skin/Soft Tissue
- Meningitis

▼ Additional SmartSet Orders

*You can search for an order by typing in the header of this section.*

✓ Close ↑ Previous ↓ Next

# Antibiogram

## CENTRAL OREGON - January 1, 2019 - December 31, 2019

Values represent percent susceptibility

	*Ave IV Cost/Day	E. coli	K. pneum	P. mirab	Ps. aerug	E. cloacae complex	Enterococcus	S. pneum	Coag Pos Staph	Coag Neg Staph
<b>TOTAL # ISOLATES</b>		6093	859	288	417	221	704	69	2235	674
Ciprofloxacin	<\$	90%	99%	84%	90%	97%	87%			
Levofloxacin	<\$						89%	97%		
Nitrofurantoin	<\$ po	98%	45%			48%	96%		99%	99%
Tetracycline	<\$ po							59%	97%	83%
Ceftriaxone	\$	98%	98%	100%						
Gentamicin	\$	96%	99%	92%	98%	99%				
Amikacin	\$	100%	100%	100%	100%	100%				
Moxifloxacin	\$								67%	73%
Tobramycin	\$	96%	99%	95%	100%	99%				
Vancomycin	\$						99%		100%	100%
Amp/Sulbactam	\$	73%	92%	88%						
Cefotaxime	\$\$							100%		
Cefazolin	\$\$	96%	96%	94%		0%				
Clindamycin	\$\$								86%	62%
Ampicillin	\$\$	68%	0%	82%						
Piperacillin/Tazo	\$\$\$	98%	99%	100%	100%	94%				
Penicillin	\$\$\$							80%		
Trimeth/Sulf	\$\$\$	86%	91%	80%		93%		87%	98%	67%
Cefepime	\$\$\$\$	99%	99%	100%		99%	100%			
Meropenem	\$\$\$\$\$	100%	100%			96%	100%			
Oxacillin	\$\$\$\$\$								74%	55%
Linezolid	\$\$\$\$\$						100%		100%	100%
Erythromycin	\$\$\$\$\$							81%	55%	47%
Ertapenem	\$\$\$\$\$	100%	100%	100%		99%				
Aztreonam	\$\$\$\$\$	98%	99%	98%		88%				
Tigecycline	\$\$\$\$\$	100%	100%	1%					100%	100%
Daptomycin	\$\$\$\$\$						100%		100%	100%
Cefoxitin Screen									74%	58%

\*Costs based on hospital acquisition cost for 1 day of IV therapy.

<\$=\$1.00-\$9.00, \$=\$10.00-\$20.00, \$\$=\$20.01-\$30.01, \$\$\$=\$30.01-\$40.00, \$\$\$\$=\$40.01-\$50.00, \$\$\$\$\$=\$50.01-\$60.00, \$\$\$\$\$\$=\$60.01-\$70.00, \$\$\$\$\$\$\$=>\$70.00

H:\Micro\Antibiogram 2016.xls 1-23-2017 boc

# EPIC Dashboard & Improvement Monitoring

## Antimicrobial Stewardship ▾

### Stewardship Reports

#### Antimicrobial Usage <sup>↗</sup>

Data collected: Tue 2/25 09:54 AM

	1
Antimicrobial Resistance Events Ready for Export	--
Antimicrobial Resistance Isolate Review	--
NHSN Facility-Level AU/R (Last Month)	--
NHSN Location-Level AU (Last Month)	--

#### MDRO Results Review <sup>↗</sup>

Data collected: Tue 2/25 09:54 AM

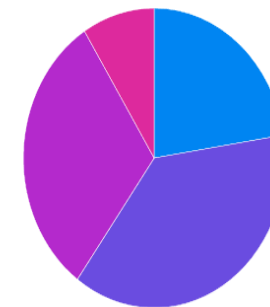
Report Title	Results
All CRE Patients (Last 7 day)	0
CephR-Klebsiella (Last 7 Days)	0
Clostridium difficile	15
CRE-Enterobacter (Last 7 Days)	0
HDH All ESBL Patients (Last 7 Days)	--
HDH C-Diff difficile Lab ID	--
Positive Blood Culture - All (Last 7 Days)	--
Positive Blood Culture - All (Last 7 Days) (Retire)	--
Positive Culture - ESBL (Last 7 Days) (Retire)	--
Positive Culture - KPC (Last 7 Days)	--
Positive Influenza - Inpatient & Outpatient (Last 2 Weeks)	165
Positive Urine - Legionella Antigen (Last 7 Days)	2
Positive Urine - Legionella Antigen (Last 7 Days) (Retire)	--
Positive Wound Culture - All (Last 7 Days)	--
Positive Wound Culture - All (Last 7 Days) (Retire)	--

### Stewardship References

#### Stewardship Common Links

- Antimicrobial Usage Dashboard
  - [Antimicrobial Usage Reports](#)
- Published Antibiogram
  - Store published antibiogram here
- Hyperspace Links
  - Create New IVent
  - Review IVents
  - [Stewardship Reports](#)
  - Verification Queue
- Web Links
  - [CDC Website](#)
  - [UpToDate](#)
  - [Micromedex](#)
- Internal Links
  - [Pharmacy Formulary](#)
- P&T Protocols
  - [C. Difficile Monitoring Protocol](#)
  - [CAP Monitoring Protocol](#)
  - [Renal Dosing Guidelines](#)

#### Antimicrobial Stewardship I-Vent Distribution



- AMS - Bug-Drug Mismatch
- AMS - De-Escalation
- AMS - Duration of Therapy
- AMS - IV to PO

#### Stewardship News

Last Refresh: 09:54:49 AM

There are no posts to show.



# Patient and Caregiver Education



## Consequences of antibiotic resistance

For many years, the introduction of new antibiotics outpaced the development of antibiotic resistance. In recent years, however, the pace of drug resistance has contributed to an increasing number of health care problems, resulting in:

- More serious illness or disability
- More deaths from previously treatable illnesses
- Prolonged recovery
- More frequent or longer hospitalization
- More doctor visits
- Less effective or more invasive treatments
- More expensive treatments

## Antibiotic stewardship

The appropriate use of antibiotics — often called antibiotic stewardship — can help preserve the effectiveness of current antibiotics, extend their life span and protect the public from antibiotic-resistant infections.

You can help reduce the development of antibiotic resistance by taking the following steps:

- Use antibiotics only as prescribed by your doctor.
- If you have an antibiotic prescription, ask your doctor what you should do if you forget to take a dose.
- If for some reason you have leftover antibiotics, throw them away. Never take leftover antibiotics for a later illness. Never take antibiotics prescribed for another person.
- Don't pressure your doctor to give you an antibiotic prescription. Ask your doctor for advice on how to treat symptoms.
- Practice good hygiene. Wash your hands regularly with soap and water, especially after using the toilet, before eating, before preparing food and after handling fresh meat. Wash fruits and vegetables thoroughly, and keep kitchen work surfaces clean.
- Make sure you or your children receive recommended vaccinations. Some recommended vaccines protect against bacterial infections, such as diphtheria and whooping cough (pertussis).
- If you think you may have penicillin allergy, talk to your doctor about getting an allergy skin test. Research has shown that penicillin or other antibiotic allergies may be overreported. Ruling out an antibiotic allergy can help your doctor prescribe the most appropriate antibiotic when it's needed.



## What everyone should know about antibiotics



## What you need to know about **antibiotics...**



- Misuse and overuse have increased the number of drug-resistant germs.
- Taking antibiotics when they are not the appropriate treatment promotes antibiotic resistance.



# What you need to know about **antibiotics...**



- Antibiotics treat bacterial infections, but not viral infections.
- Common viral infections that do not benefit from antibiotic treatment include: a common cold, influenza and bronchitis.



# What you need to know about **antibiotics...**



- Failure to take an antibiotic as prescribed can contribute to antibiotic resistance.
- Take antibiotics only as prescribed and throw away any leftover antibiotics.



Thank you.

Kira Buresh, Quality Improvement Specialist

Jennifer Tripp, Pharmacist

Contact: [kmburesh@stcharleshealthcare.org](mailto:kmburesh@stcharleshealthcare.org)

# Questions?



# Oregon HAI Program Reminders

Please complete your facility's 2019 NHSN Annual Survey before March 1<sup>st</sup>!

Check our website for upcoming Lunch and Learn Webinars!

<https://www.oregon.gov/oha/PH/DISEASESCONDITIONS/COMMUNICABLEDISEASE/HAI/PREVENTION/Pages/lunch-and-learn.aspx>

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