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# Implementing Core Elements of Antibiotic Stewardship in Long Term Care Facilities

Oregon Healthcare-associated Infections Program

Lunch and Learn Webinar

February, 20, 2020

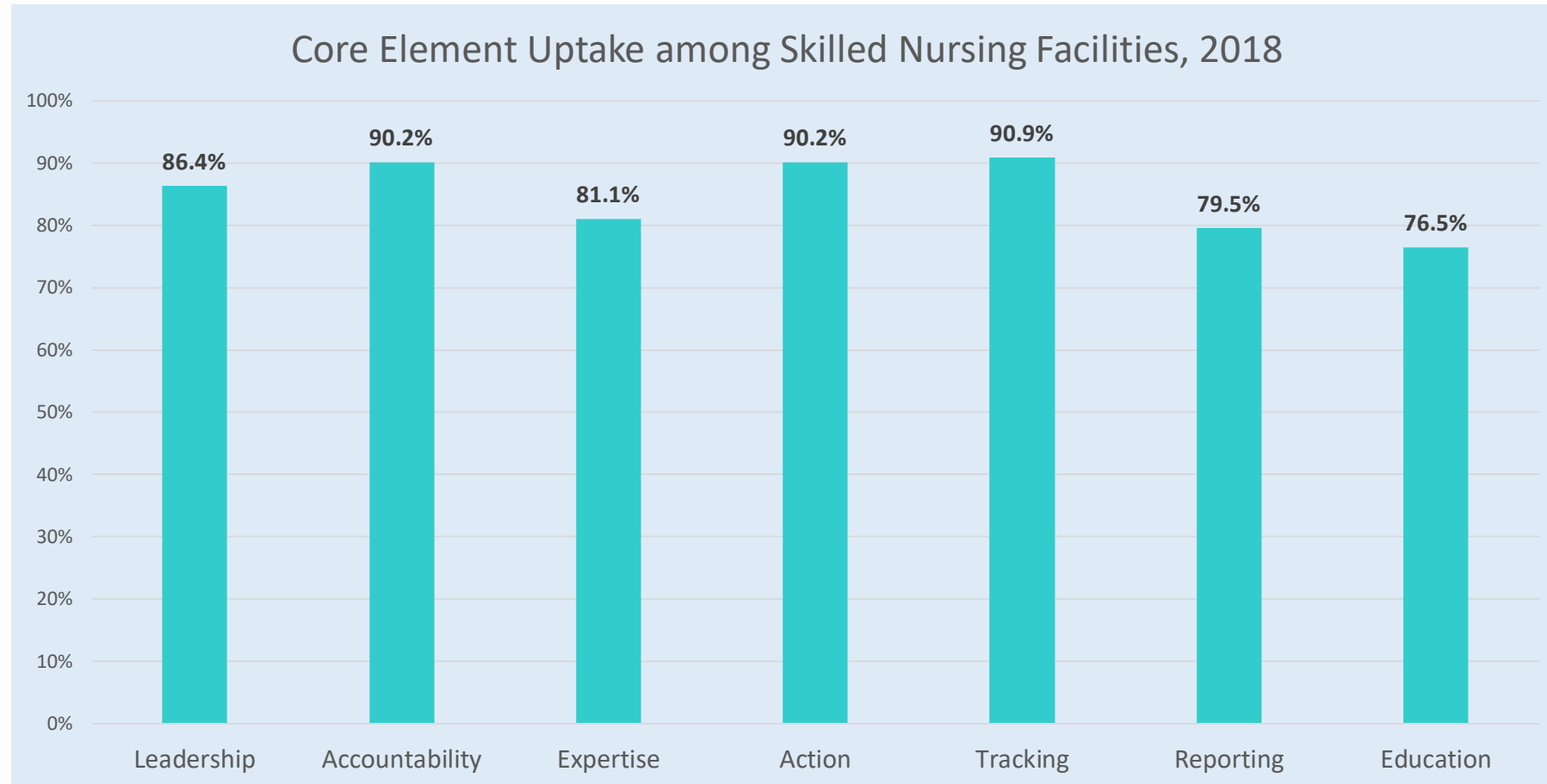
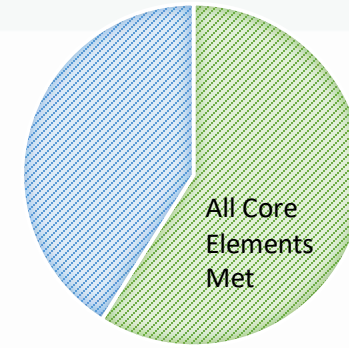


# Skilled Nursing Facilities

The infographic is set against a dark blue background and is organized into two columns. The left column features three circular icons: a man in a suit, a woman in a lab coat, and a pill bottle. The right column features four circular icons: a person with a cross, a clipboard, a virus, and a stethoscope. Each icon is followed by a bold heading 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

# Fifty-nine percent of SNFs are meeting all 7 core elements



Data from the HAI Annual Survey

# Today's Speakers

- Alina Staub

Director of Nursing Services, Infection Preventionist  
Marquis Mill Park

- Kirstin King

Director of Nursing Services, Infection Preventionist  
Marquis Marion Estates

# Antibiotic Stewardship: The Importance of Education

Presented by Alina Staub, RN, DNS

Katharine Murer, RN, aDNS

Marquis Mill Park

# History of Antibiotic Stewardship at Marquis Mill Park

- Initial adoption of Antibiotic Stewardship (AS)
- Challenges
- Ongoing stewardship



# Objectives

Participants will be able to:

1. Highlight the importance of Antibiotic Stewardship in care facilities
2. List key elements for educating
  1. Staff
  2. Providers
  3. Residents and Families
3. Discuss actions that can be taken to promote stewardship activities

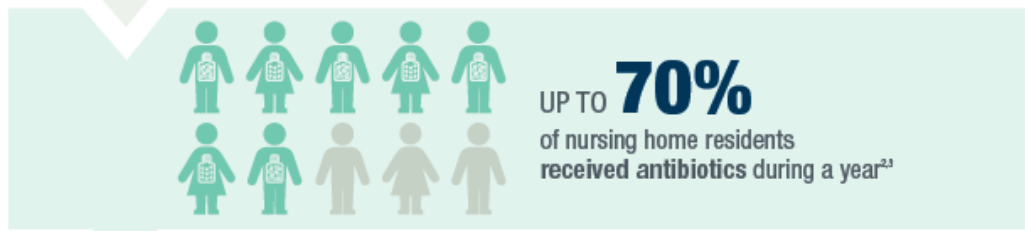
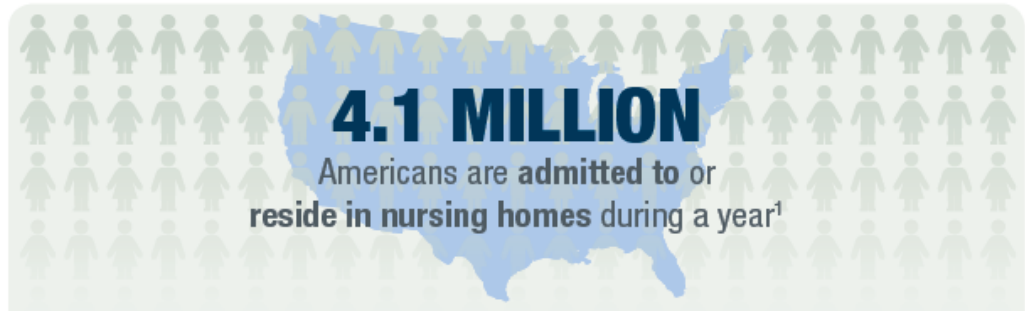
# Why Antibiotic Stewardship?

- Antibiotics only fight infections caused by bacteria.
- Taking antibiotics inappropriately can cause:
  - Unnecessary Adverse Side Effects (ASE)
  - Multidrug Resistant Organisms (MDRO)
- Long Term Care Federal Regulations make Antibiotic Stewardship a rule of participation or federal regulation as of November 28, 2017.





# Antibiotic Stewardship in Nursing Homes



CDC recommends

## 7 CORE ELEMENTS

for antibiotic stewardship in nursing homes

- Leadership Commitment
- Accountability
- Drug Expertise
- Action
- Tracking
- Reporting
- Education

C25250816-C

\*incorrectly = prescribing the wrong drug, dose, duration or reason  
<sup>1</sup>AHCA Quality Report 2013.  
<sup>2</sup>Lim CJ, Kong DCM, Stuart RL. Reducing inappropriate antibiotic prescribing in the residential care setting: current perspectives. Clin Interv Aging. 2014; 9: 165-177.  
<sup>3</sup>Nicolle LE, Bentley D, Garibaldi R, et al. Antimicrobial use in long-term care facilities. Infect Control Hosp Epidemiol 2000; 21:537-45.



Centers for Disease Control and Prevention  
 National Center for Emerging and Zoonotic Infectious Diseases

# Antibiotic prescribing in nursing homes is frequently inappropriate

- Areas of concern
  - Diagnosis: treatment may not be indicated
  - Drug: antibiotic selection may not be correct
  - Dose: dosing may be inappropriate or not adjusted
  - Duration: longer than recommended guidelines
  - De-escalation: not adjusted based on clinical condition or laboratory results
  - Documentation: should reflect all D's above

# Putting it all together: Education

## CDC Core Elements

- Leadership commitment
- Accountability
- Drug expertise
- Action
- Tracking
- Reporting
- Education
  - Education is key to initiating all of the previous steps!



# Three Parts to Education

- Initial Education
  - Establish standards
  - Cultivate shared goals
- Monitoring
- Compliance
  - Audits
  - Reeducation

# Knowledge + Action = Power

- Inspiring ownership
- Looking at the big picture
- Empowering nurses, residents, and families to be advocates!



# Educating Staff

- Provide education about AS to nursing staff
  - First element to establish staff support
  - Different mechanisms
    - Flyers
    - Iconographics
    - Face-to-Face Interactive Workshops (strongest evidence for effectiveness)
  - Address staff concerns and barriers to changing antibiotic use practices

# Educating Providers

- Draft Antibiotic Stewardship commitment letter
- Be specific about facility expectations and stewardship initiatives
- Provide updated educational materials monthly
  - Antibiogram
  - Organism Occurrence Report
- Follow up with provider feedback
- Challenge: outside providers
  - Best tool for combatting overmedication = **education!**

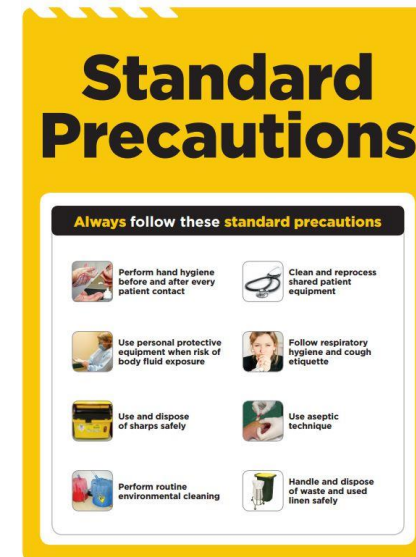
# Educating Residents & Families

- Develop resources and tools to engage residents and families in stewardship education efforts
- Reduce barriers of resident and family expectations in improving antibiotic prescribing
- Start the conversation early
- Visual reminders in common area



# Implementation

- Prevention
  - Handwashing
  - Vaccinations
  - Standard Precautions
- Infection Assessment tool prior to antibiotic initiation
- Testing/cultures
- No treatment of asymptomatic infections or colonization
- Treatment only when appropriate
- Enhanced Barrier Protection for MDROs



AUSTRALIAN COMMISSION  
ON SAFETY AND QUALITY IN HEALTH CARE

Images from:

<https://www.cdc.gov/features/handhygiene/index.html>

<https://www.medicalnewstoday.com/articles/324619.php#1>

<https://idmic.net/2015/10/20/standard-precautions-infection-control-what-is-included/>

# McGeer Criteria for nurses

## Example:

UTI—No indwelling catheter

Both criteria 1 AND 2 must be met:

1. At least one of the following:

- a) Dysuria OR acute pain, swelling, tenderness of testes, epididymis, or prostate
- b) Fever OR leukocytosis AND at least one of the following:

following:

- Costovertebral angle tenderness
- Suprapubic pain
- Gross hematuria
- New or increased incontinence
- New or increased frequency

c) If no fever or leukocytosis then two or more of the following:

Suprapubic pain

Gross hematuria

New or increased incontinence

New or increased urgency

New or increased frequency

2. One of the following:

- a) > 105 CFU/mL of < 2 organisms in voided urine
- b) > 102 CFU/mL of any number of organisms of in/out catheter sample

UTI—With indwelling catheter

Both criteria 1 AND 2 must be met:

1. At least one of the following:

- Fever, rigors, OR new-onset hypotension with no alternate site of infection
- Leukocytosis AND either acute change in mental status OR acute functional decline with no alternate diagnosis
- New-onset suprapubic pain OR costovertebral angle pain/tenderness
- Purulent discharge from around the catheter OR acute pain, swelling, or tenderness of testes, epididymis, or prostate

2. > 105 CFU/mL of any number of organisms from urinary catheter specimen

# Loeb Criteria for clinicians

Example:

<b>Urinary tract infection without catheter</b>	Either one of the following criteria <ul style="list-style-type: none"><li><input type="checkbox"/> Acute dysuria, OR</li><li><input type="checkbox"/> Temp &gt;37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline, AND ≥1 of the following new or worsening symptoms<ul style="list-style-type: none"><li><input type="checkbox"/> Urgency</li><li><input type="checkbox"/> Suprapubic pain</li><li><input type="checkbox"/> Urinary incontinence</li><li><input type="checkbox"/> Frequency</li><li><input type="checkbox"/> Gross hematuria</li><li><input type="checkbox"/> Costovertebral angle tenderness</li></ul></li></ul>
<b>with catheter</b>	At least one of the following criteria <ul style="list-style-type: none"><li><input type="checkbox"/> Rigors</li><li><input type="checkbox"/> New onset delirium</li><li><input type="checkbox"/> Temp &gt;37.9 °C (100 °F) or 1.5 °C (2.4 °F) above baseline</li><li><input type="checkbox"/> New costovertebral angle tenderness</li></ul>

# Appropriate Testing

- Urinalysis w/culture and sensitivity
  - Specific bacterium = **most appropriate treatment**
  - Most appropriate treatment = decrease in unnecessary ASEs
  - Asymptomatic infections = no treatment, alert, monitoring

# Education regarding MDROs

- Enhanced Barrier Protections
  - Easily understood signs, appropriately posted
  - Education
  - Awareness
  - Compliance

## DISEASE-SPECIFIC ISOLATION RECOMMENDATIONS

### Standard Precautions

- CMV
- HIV
- Hepatitis B and C
- Aspergillosis

### Contact Precautions

- MRSA (mask if respiratory infection)
- VRE
- Adenovirus
- Diarrhea
- C. Difficile
- Rotavirus
- E coli 0157
- Enterovirus
- Salmonella
- Shigella
- Hepatitis A
- Herpes Zoster (shingles, localized)
- Herpes simplex
- Parainfluenza (mask if coughing)
- RSV (mask if productive cough)
- Lice
- Scabies
- Chicken pox (symptomatic, until all lesions crusted and dried)

### Droplet Precautions

- Pertussis
- Influenza A or B
- MRSA (respiratory infection)
- Neisseria meningitidis (suspected or confirmed)
- Coxsackie
- Bacterial meningitis (for 24 hours after effective antibiotic therapy)
- RSV (droplet and contact)
- Mumps
- Rubella

### Airborne Precautions

- Chicken pox
- Disseminated herpes zoster (shingles)
- Measles
- N-95 Mask:**
  - Tuberculosis
  - SARS
  - Avian influenza

# Tips for Success

- Commit to ongoing education for all members of the community
- Audit, audit, audit
- View errors as learning opportunities
- Create positive environment of accountability



Questions?



# Resources

- Kabbabi, S. HealthInsight. (2017). *Antibiotic Stewardship in Nursing Homes*. [Video Webinar].
- Loeb M, *et al.* Infect Control Hosp Epidemiol 2001;22:120-4.
- Stone, N. D., Ashraf, M. S., & et al. (2012). Surveillance definitions of infections in long-term care facilities: Revisiting the McGeer criteria. *Infection Control Hospital Epidemiology* 33(10), 965-977.
- <https://www.cdc.gov/features/handhygiene/index.html>
- <https://www.medicalnewstoday.com/articles/324619.php#1>
- <https://idmic.net/2015/10/20/standard-precautions-infection-control-what-is-included/>
- <https://www.nursingcenter.com/ncblog/april-2017/transmission-based-isolation-precautions-for-commo>
- <https://www.cdc.gov/longtermcare/prevention/antibiotic-stewardship.html>
- <http://www.ahrq.gov/nhguide/index.html>
- [http://www.mi-marr.org/LTC\\_toolkit.php](http://www.mi-marr.org/LTC_toolkit.php)
- <https://nursinghomeinfections.unc.edu/>
- <https://www.choosingwisely.org/patient-resources/antibiotics-for-people-with-catheters/>
- <http://www.choosingwisely.org/patient-resources/antibiotics-for-urinary-tract-infections-in-older-people/>



*Antibiotic Stewardship &  
Reporting*

*Kirstin King RN DNS*

*Marquis Marian Estates*



MARQUIS  
COMPANIES

LIFE, WELL LIVED.

# Introduction



Kirstin King, RN and Director of Nursing Services at Marquis Marian Estates in Sublimity, OR



# Objectives

- Participants will be able to
- Understand philosophy and Key Elements of Antibiotic Stewardship
  - Reporting
  - Education
- Tips and take aways for overcoming barriers to implantation of Antibiotic Stewardship Programming



# Marquis Antibiotic Stewardship

- Antibiotic Facts sheets part of admission packet
- Infection evaluations for any infections identified in house with focus of Mcgeer and Loeb Criteria
- Antibiotic tracking
- QA reporting Monthly
- Education



## WHAT YOU NEED TO KNOW ABOUT ANTIBIOTICS IN A NURSING HOME

### *Core Elements for Antibiotic Stewardship in Nursing Homes*



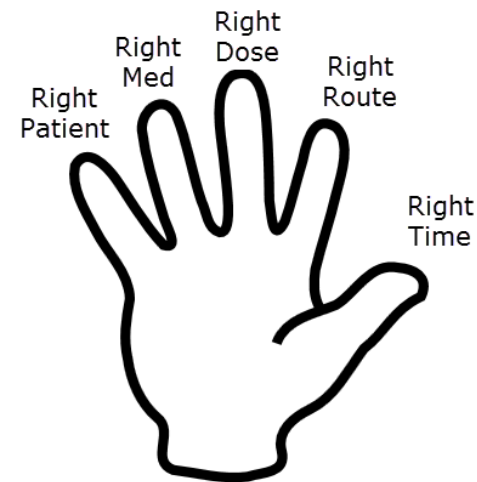
#### WHAT ARE ANTIBIOTICS?

Antibiotics are drugs used to treat infections caused by bacteria. They do not work for illnesses caused by viruses, like flu and most cases of bronchitis.



#### WHEN ARE ANTIBIOTICS NECESSARY?

There are times when antibiotics are urgently needed; for example, to treat sepsis (e.g., when bacteria cause a severe infection of the bloodstream), pneumonia caused by bacteria, and meningitis caused by bacteria. Using



# PointClickCare

- Home ▾
- Admin ▾
- Clinical ▾
- QIA ▾
- Document Manager ▾
- IRM ▾
- CRM ▾
- Reports

## Infection Evaluation - V 3

**Resident:** ██████████ (██████████)

**Description:** Other

**Date:** 9/8/2019 18:43

**Section Status:** Signed ●

**Lock Date:** 9/10/2019 12:23

### SECTION 1. Signs/Symptoms

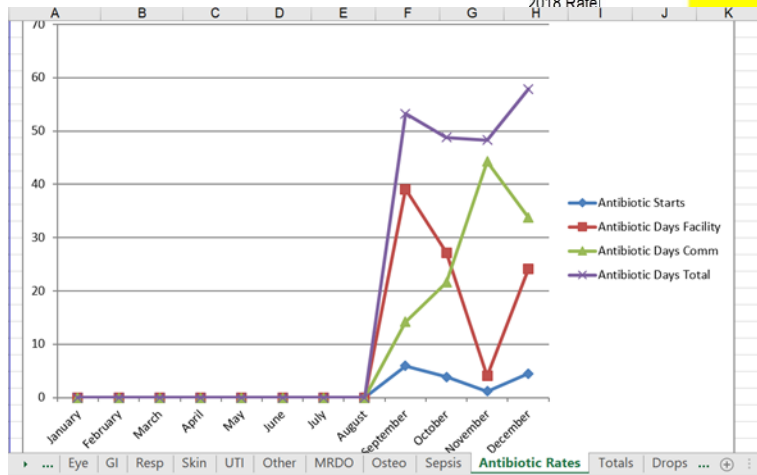
<b>1.</b>	<b>Symptoms</b>	Signs/Symptoms: NEW OR WORSENING
		<b>1a.</b> General system signs/symptoms <b>H</b>
		<input type="checkbox"/> a. Fever >2 degrees over baseline
		<input type="checkbox"/> b. Chills and/or rigors
		<input type="checkbox"/> c. Leukocytosis
		<input checked="" type="checkbox"/> d. Pain/Tenderness
		<input type="checkbox"/> e. Myalgia/Body Aches
		<input type="checkbox"/> f. Loss of/or decreased Appetite
		<input type="checkbox"/> g. None of above
		<b>1b.</b> Respiratory Signs/Symptoms <b>H</b>
		<input type="checkbox"/> a. Runny Nose/Nasal Discharge
		<input type="checkbox"/> b. Sneezing

# Reporting

- Marquis enhanced standardized infection log tracking in 2016 based on the CDC core elements and CMS requirements for Antibiotic Stewardship.
  - Leadership commitment
  - Accountability
  - Drug expertise
  - Action
  - Tracking
  - Reporting
  - Education

# Infection Log and tracking

Year: 20	Infection Type: Facility Rates													Total
	Eye	GI			LRI	URI	Skin	UTI		Sepsis	Osteo	Other	MDRO	
		GI	Noro	C Diff				CAUTI	UTI					
January	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
February	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
March	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
April	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
May	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
June	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
July	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
August	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
September	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.0	3.0	0.0	0.0	0.0	0.0	4.7
October	0.6	0.0	0.0	0.0	1.7	0.0	0.0	0.6	0.6	0.0	0.0	0.0	0.0	3.3
November	0.6	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	1.7
December	0.6	0.0	0.0	0.0	0.0	0.0	0.6	1.1	0.6	0.0	0.0	0.6	0.0	3.4
2018 Rate														





## Barriers & Challenges

- Manually entering information in infection log
- Receiving testing results in timely manner.
- Families that insist on ABT use
- Not getting culture just prescribing ABT
- Time
- Personalized feedback to prescribers
- Antibigram effectiveness

# Lessons Learned

- PCC (Point click care) – Marquis is piloting an integrated infection reporting within EHR
- Constant communication with lab provider to discuss timely delivery of lab results
- Repeated education on Antibiotic Stewardship throughout their stay
- Time remains an ongoing work in progress, with no easy answer.

# Tips & Suggestions

- Work on infection log daily.
- Electronic EHR or excel
- Audit!
- Developing collaborative relationships with

# Questions?



# Oregon HAI Program Announcement

- HAI Program staff will be sending out a quick survey to assess your facility's progress with implementing the core elements of stewardship
- Survey will be sent out via email in early March
- Survey should take 10 minutes to complete

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