Wisconsin HAI Long-Term Care Education Series

February 22, 2024

WISCONSIN DEPARTMENT of HEALTH SERVICES

WI DPH Long-Term Care Education Series

February 22, 2024

Core Antibiotic Tracking and Reporting Measures for Nursing Homes

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THE A(ntibiotic tracking)-TEAM

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Maddie Langenstroer

Michelle Gassman

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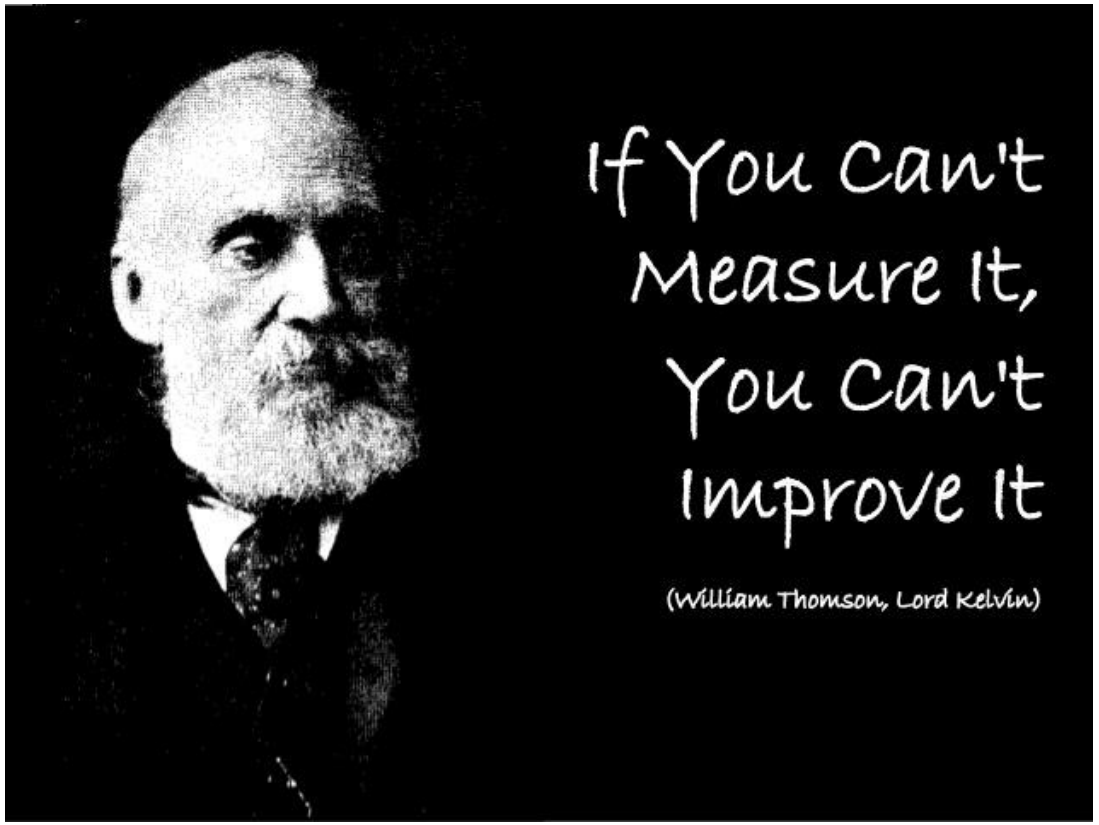
Objectives:

- Why tracking and reporting matters
- Review “core measures”
- Define of terms
- How to “work smarter” (not harder)

Why measurement matters



- Identify opportunities for improvement
- Evaluate the impact of stewardship improvement activities
- Meet regulatory requirements

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History of Infection Control Regulations

- **2016**
  - Sweeping change to regulations
    - Moved vaccination regs under IC regs
    - Focus expanded to include interrupting transmission in addition to preventing infections
    - Must follow national standards (NHSN or McGeer)
    - Facilities are required to base their IPCP program based on an annual facility assessment

11/2019
- Facilities must employ and designate an individual for responsibility the IPCP who has received specific training in IP&C

11/2017
- §483.80(a)(3): The facility must establish an IPCP that must include […] an antibiotic stewardship program that includes antibiotic use protocols and **a system to monitor antibiotic use.**

https://www.federalregister.gov/documents/2016/10/04/2016-23503/medicare-and-medicaid-programs-reform-of-requirements-for-long-term-care-facilities

https://www.ahcancal.org/facility_operations/Documents/SC17-36.03.Appendix%20PP%20with%20Final%20IGs.pdf

Specific Operations Manual Language

- The facility ASP Protocol should contain a system of reports related to antibiotic use
  - Example: antibiotic treatment courses per 1,000 resident-days
  - Example: days of therapy per 1,000 resident-days
- The facility ASP Protocol should contain a system of reports related to antibiotic resistance data
  - Ex. of outcome: *Clostridium difficile* and MRSA rates
  - An antibiogram is not a requirement
- *KEY ELEMENT OF NONCOMPLIANCE: "[…] the surveyor's investigation will generally show that the facility failed […] to develop, promote and implement a facility-wide system to monitor the use of antibiotics"*

Focus on “appropriate” use

- §483.80(a)(3): The facility must establish an IPCP that must include […] an antibiotic stewardship program that includes **antibiotic use protocols** and a system to monitor antibiotic use.

- Operations manual does not require:
  - Use of a specific set of criteria (Loeb, McGeer, something else)
  - Reporting a measure of appropriate/inappropriate use

- But...
  - Operational Manual investigative procedures requires surveyor to assess if ASP has an ”infection assessment or management tool/algorithm
  - If concerns with ASP identified, surveyor will conduct a review of at least one resident receiving antibiotics to determine if use is appropraite

NHs should be able to:

- Document how antibiotic use and antibiotic-related outcomes are being tracked
- Produce reports that demonstrate that these measures are being tracked
- Have a system for promoting appropriate antibiotic use
  - Criteria
  - Mechanism for assessing if criteria satisfied

Special Article

Template for an Antibiotic Stewardship Policy for Post-Acute and Long-Term Care Settings

Robin L.P. Jump MD, PhD [a,b,*], Swati Gaur MD, MBA, CMD [c], Morgan J. Katz MD [d], Christopher J. Crnich MD, PhD [e,f], Ghinwa Dumyati MD [g], Muhammad S. Ashraf MBBS [h], Elizabeth Frentzel MPH [i], Steven J. Schweon RN, MPH, MSN, CIC, HEM [j], Philip Sloane MD, MPH [k], David Nace MD, MPH, CMD [l] on behalf of the Infection Advisory Committee for AMDA—The Society of Post-Acute and Long-Term Care Medicine

Jump et al. *J Am Med Dir Assoc* 2017; 18(11): 913-20

Core Tracking & Reporting Measures

Core Measure development process

- UW Team developed a set of initial recommendations
- Recommendations reviewed and modified with input from HAI in LTC Coalition members over two meetings
- UW Team developing resource document to support release of “Core Measures”
- Resource document will be reviewed during March 2024 HAI in LTC Coalition meeting and finalized during April 2024 meeting
- Core Measure and Resource documents will be housed on LTC HAI Coalition website with link to DHS website

Narrow focus

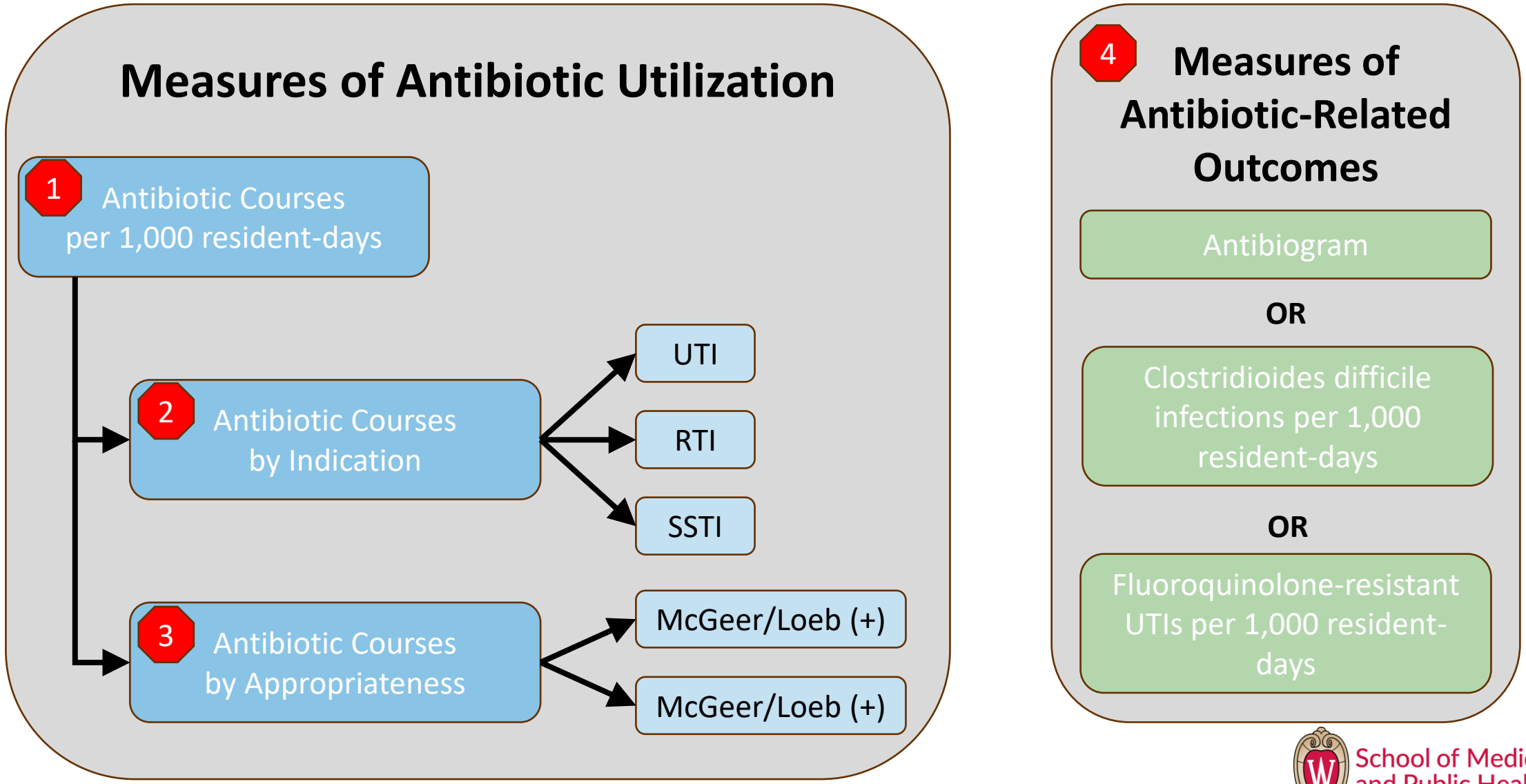
- Other aspects of the facility antibiotic stewardship program (ASP) outside of scope
  - BUT the facility ASP should be data driven
  - Tracking and reporting is NOT a performative activity
- Facility-initiated antibiotics
  - Nursing home
  - ED
  - Clinic
- Hospital-initiated treatments
  - Under less facility control
  - Facilities that track should have process to keep separate

Do you have a plan?

Of course I have a plan, but it's a secret

- Hannibal

Core Measures



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Measures to be considered

Measures of Antibiotic Utilization

Days of Therapy per 1,000 resident-days

OR

Length of Therapy per 1,000 resident-days

OR

Antibiotic Courses by Duration

- ≤7 days
- >7 days

Antibiotic Prescribing Process Measures

% of antibiotic courses with completed SBAR

AND/OR

% of Abx orders with the 4 D's (declared indication, drug, dose, & duration)

AND/OR

% of antibiotic courses with a completed antibiotic timeout

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Definition of terms, fool!

Measure

- Used to summarize a characteristic of a population or series of events
  - Ex. 1 (continuous): average height of males in a school
  - Ex. 2 (count): number (or percentage) of times I forgot my phone when leaving for work the past month

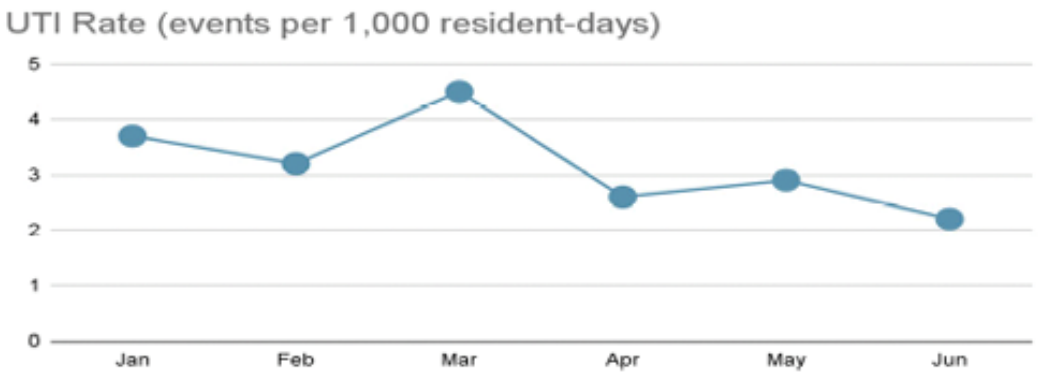
- Different types of measures
  - Use (utilization): number of times an antibiotic was prescribed this month
  - Process: the percentage of antibiotic orders given by Dr. Crnich that specified which infection he was treating, the antibiotic being used, its dose and its duration
  - Outcome: number of *C. difficile* infections this month

Line list ≠ report

- The ”surveillance” line list
  - Organizes and structures individual events
  - Needed to create a report
- A report
  - Combines individual events into a measure
  - Ideally, the measure is
    - Trended over time
    - Rate adjusted

Line List

Resident	Date	Infection	Antibiotic	McGeer?
JAC	05/02	UTI	TMP/SMX	Yes
MSN	05/08	UTI	NFT	No
…	…	…	…	…



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  - Combines individual events into a measure
  - Ideally, measure is
    - Trended over time
    - Rate adjusted (critical if census changing month-to-month)

RATE ADJUSTMENT

$$\frac{No.\,antibiotic\,courses\,this\,month}{No.\,resident\,days\,this\,month} \times 1,000$$

$$= AC\,per\,1,000\,rdays$$

EXAMPLE:

$$\frac{15\,Abx\,courses}{2,250\,resident\,days} \times 1,000$$

$$= 6.7\,AC\,per\,1,000\,rdays$$

Keep your line lists straight

Surveillance Line List

- Used to structure and organize data on individual infection events
- Captures information on events that occur in residents
- Should be updated and maintained regularly
- Types of information captured should be the same every month

Outbreak Line List

- Used to structure and organize data on individual infection events
- Captures information on events that occur in residents AND staff
- Only used when an outbreak is suspected or confirmed
- Types of information captured may vary based on type of infection causing outbreak

Stratification

- Process of separating a group into sub-groups
  - Ex. 1: number of students in a classroom → number of boys and girls in a classroom

- Very important step to identify where the problem is
  - Our use of antibiotics is increasing! (antibiotic courses per 1,000 resident-days)
  - Our treatments for UTI are increasing! (percentage of antibiotic courses prescribed by indication)
  - Our treatment for asymptomatic bacteriuria are increasing! (percentage of antibiotic courses prescribed by appropriateness)
  - This began when we started sending residents to a different ED! (percentage of antibiotics prescribed by location)

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  - Our treatments for UTI are increasing! (percentage of antibiotic courses prescribed by indication)
  - Our treatment for asymptomatic bacteriuria are increasing! (percentage of antibiotic courses prescribed by appropriateness)
  - This began when Dr. Crnich started rounding at this facility (percentage of antibiotic courses prescribed by provider)

Show me the damn plan

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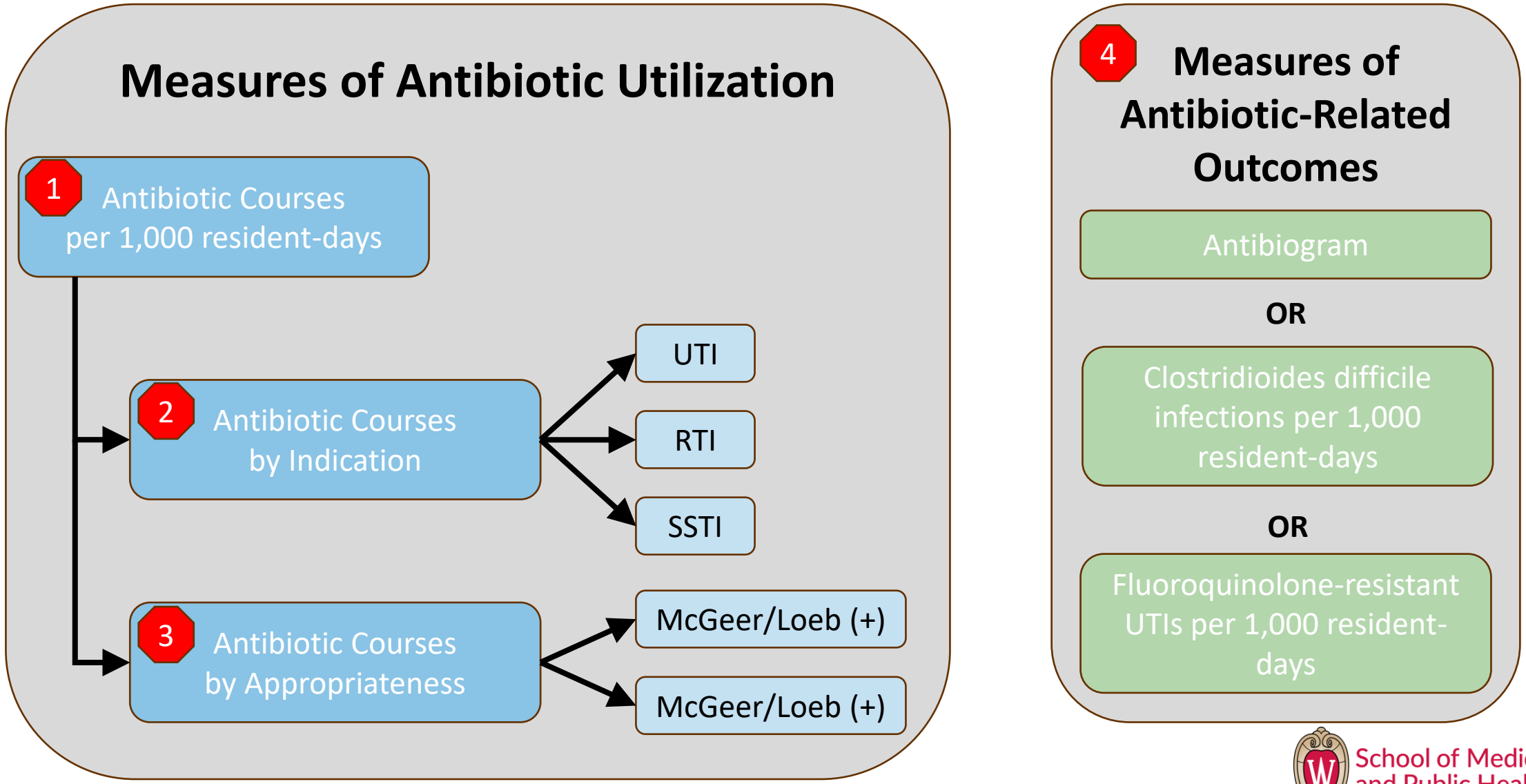
Core Measures



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Antibiotic Courses per 1,000 resident-days

- Needed data
  - Antibiotic prescribed (Y/N)
  - Resident days for the facility for the month

Resident Name/ID	Unit	Infection Type	Antibiotic Prescribed?	Criteria Met?	Treatment Days	Date Resolved
001	A	UTI	1	1	5	XX/XX/XX
002	A	UTI	1	1	10	XX/XX/XX
003	B	Pneumonia	1	0	10	XX/XX/XX
004	C	ILI	0	---	---	XX/XX/XX
005	C	UTI	1	0	10	XX/XX/XX
006	B	Cellulitis	1	1	7	XX/XX/XX
007	B	UTI	1	1	5	XX/XX/XX
008	A	UTI	1	0	7	XX/XX/XX
009	C	Pneumonia	1	1	7	XX/XX/XX
010	C	COVID-19	0	---	---	XX/XX/XX

Resident days = 2,250

Antibiotic Courses per 1,000 resident-days

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  - Antibiotic prescribed (Y/N)
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009	C	Pneumonia	1	1	7	XX/XX/XX
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$$\frac{8\ Abx\ courses}{2,250\ resident\ days} \times 1,000$$

$$= 3.6\ AC\ per\ 1,000\ rdays$$

Resident days = 2,250

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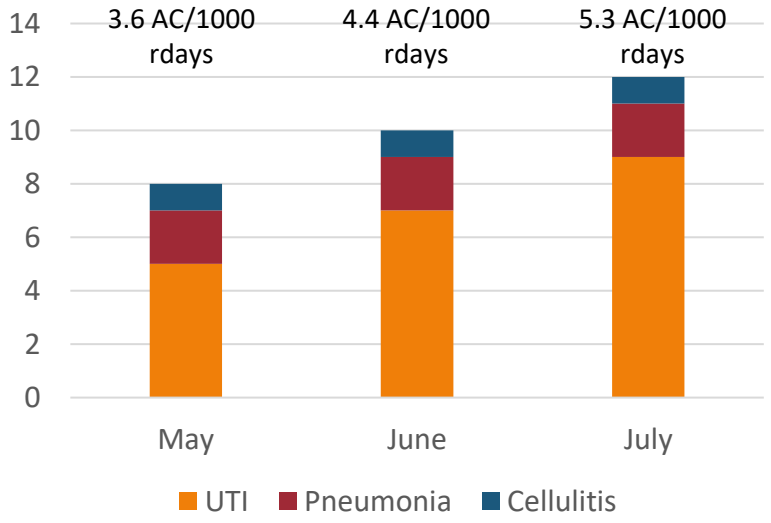
Antibiotic Courses By Indication

- Needed data
  - Antibiotic prescribed (Y/N)
  - Infection type



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010	C	COVID-19	0	---	---	XX/XX/XX

Resident days = 2,250

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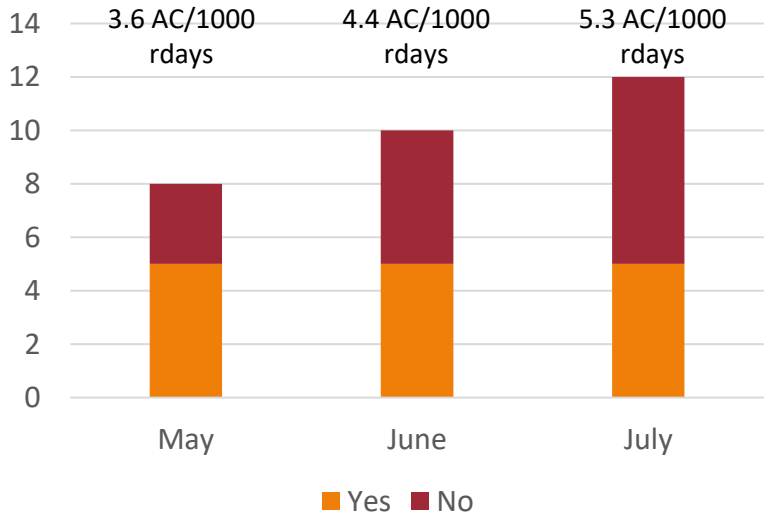
Antibiotic Courses By Appropriateness

- Needed data
  - Antibiotic prescribed (Y/N)
  - Criteria met (Y/N)



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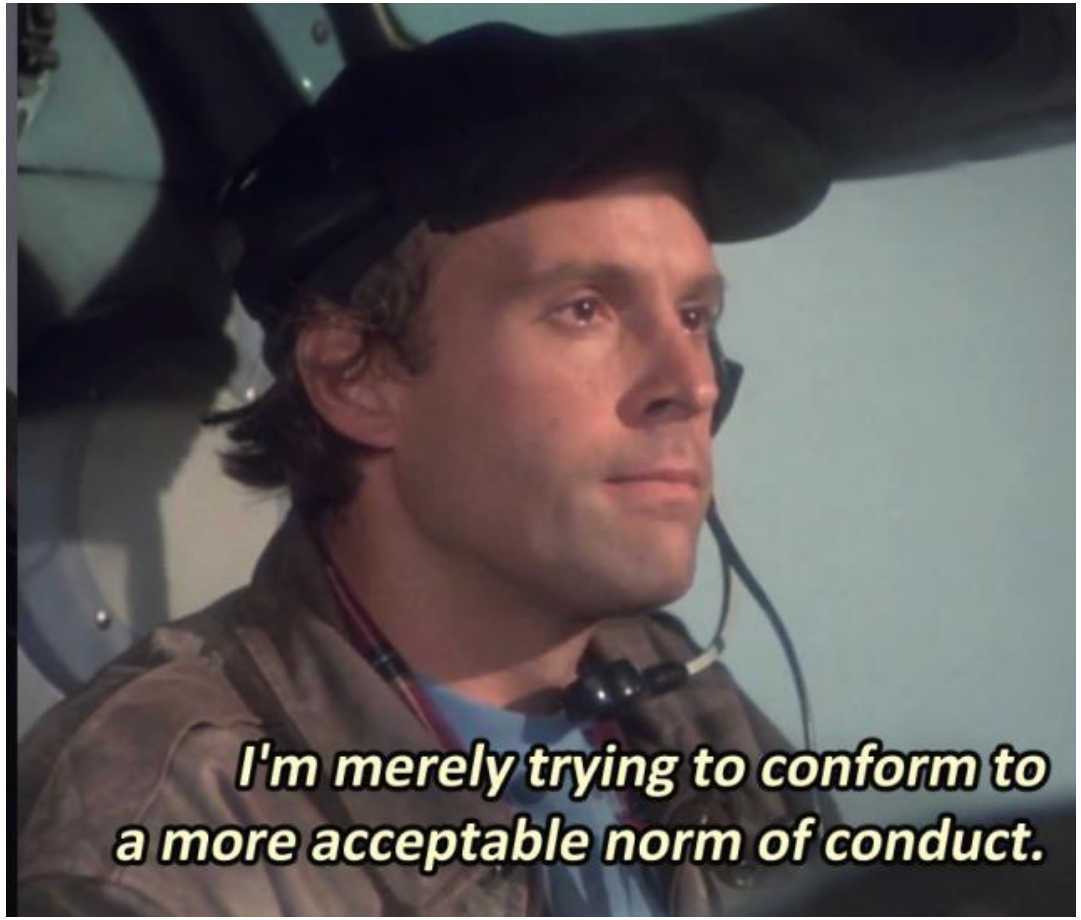
Best practices



Ditch the paper

- At a minimum, do your line listing in a plain excel file
- Get comfortable with creating drop down lists
- Use numeric values for “Yes”(1) and “No”(0)
- Use equations to automate calculations
- Line-listing within the EHR another good option but look at reporting capabilities before committing

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PointClickCare®

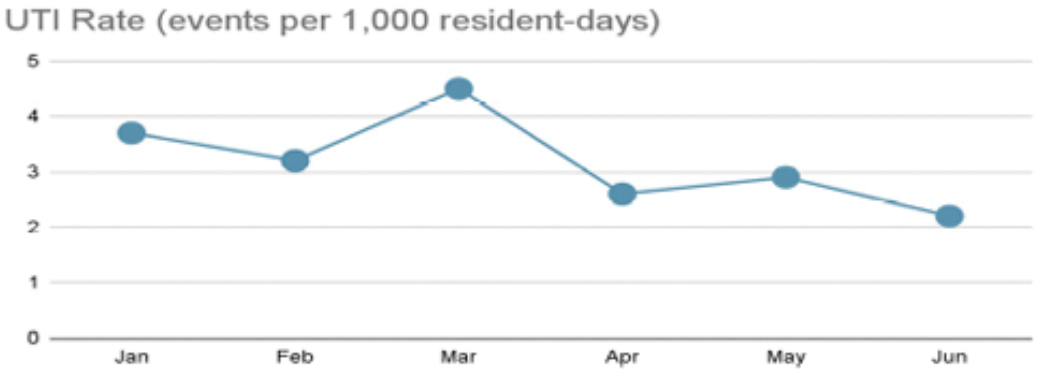
MatrixCare® by ResMed

Tables versus graphs?

- Tables are good for summarizing multiple measures from a single time point

	Provider A	Provider B	Provider C
Abx courses	5	7	7
Courses meeting criteria	5	2	6
Courses >7 days	1	7	2

- Graphs are best for showing how a measure is trending



Follow good data visualization practices

- The goal of any data visual is to communicate information quickly and effectively.
- Visuals should:
  - Be decluttered (i.e., remove excess information) and
  - Communicate the message quickly and effectively.
- Focus on “a” message
  - Antibiotic courses are trending upwards
  - Percentage of antibiotic courses not meeting criteria are rising

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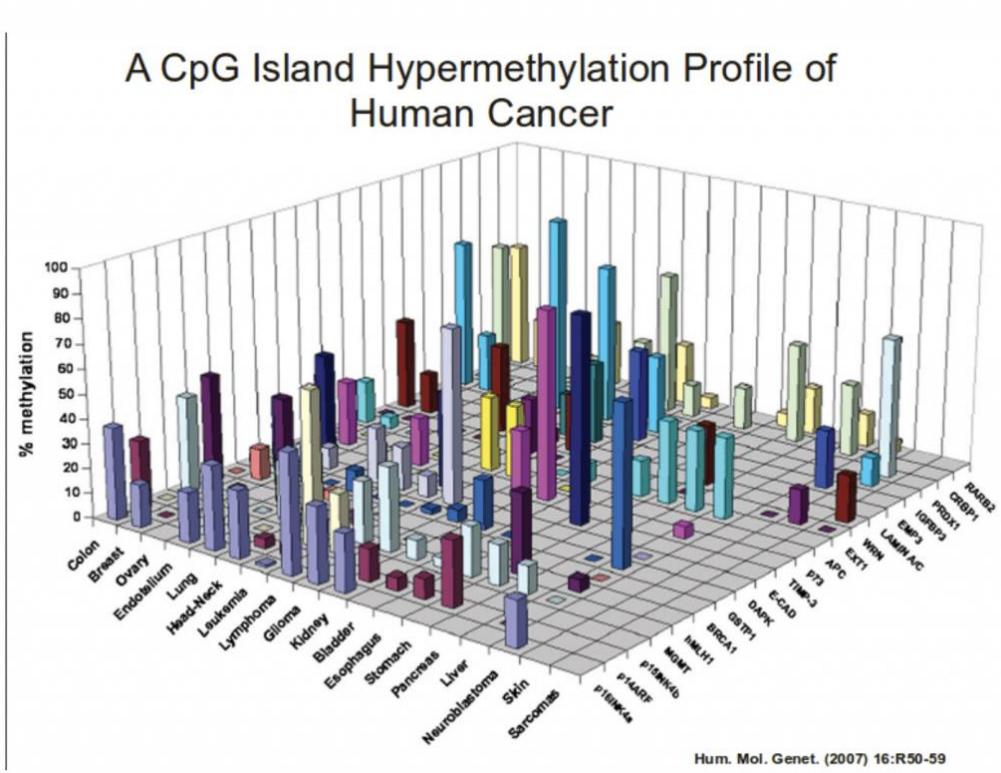

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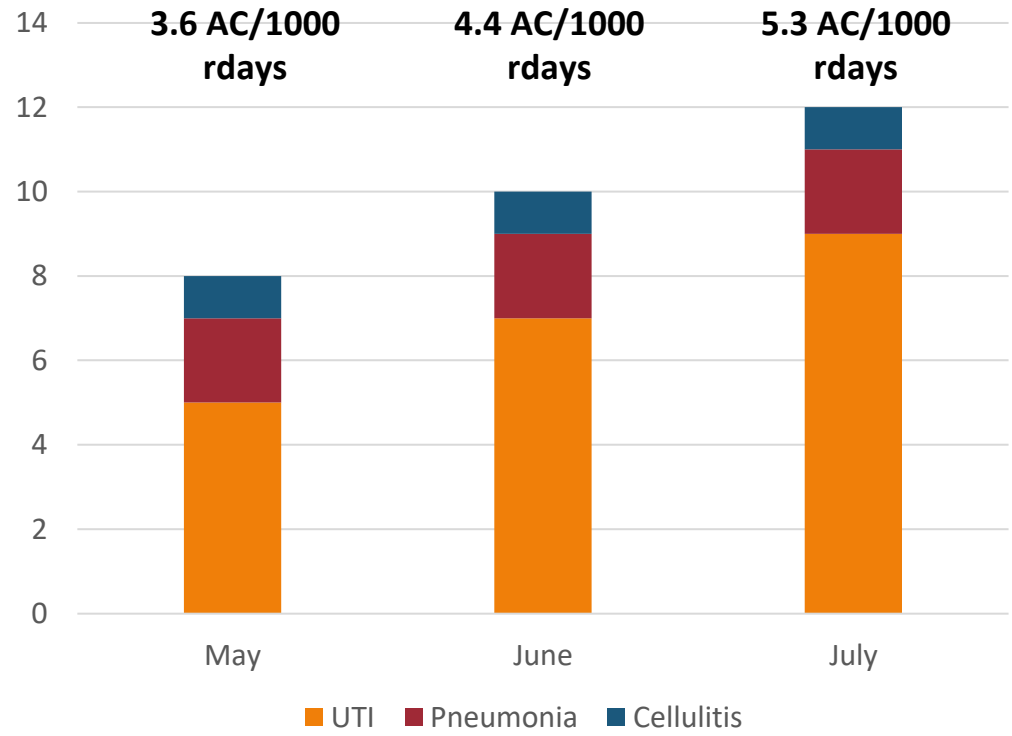

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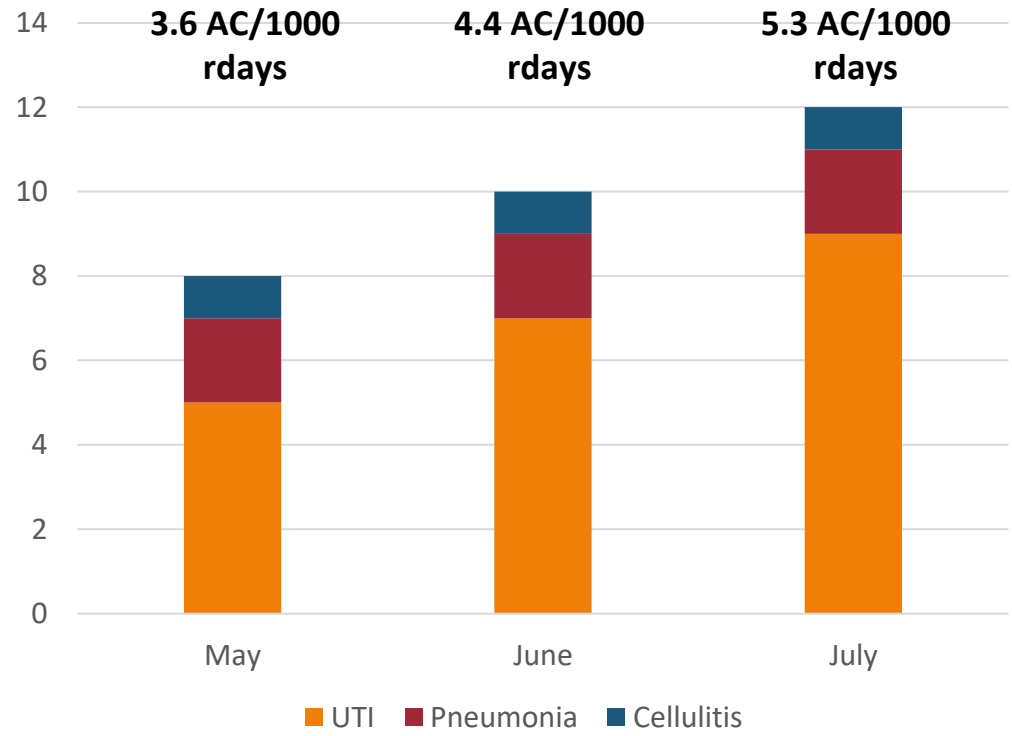

I love it when a plan comes together

Questions?

Regional Infection Preventionists

- **Western Region:** Nikki Mueller, MLS(ASCP)CM, MBA, CIC, Phone: 608-628-4464
- **Northern Region:** Anna Marciniak, MLS(ASCP), CIC, Phone: 608-590-2980
- **Northeastern Region:** Tess Hendricks, BS, MLS, CIC, Phone: 608-338-9071
- **Southeastern Region:** Aimee Mikesch, BSN, RN, LTC-CIC, Phone: 608-867-4625
- **Southern Region:** Paula Pintar, MSN, RN, ACNS-BC, CIC, FAPIC, Phone: 608-471-0499

HAI Prevention Program Contact Information

 **Email:** dhswihaipreventionprogram@dhs.wisconsin.gov

 **Phone:** 608-267-7711

 **Website:** www.dhs.wisconsin.gov/hai/contacts.htm

HAI Infection Prevention Education webpage

HAI Infection Prevention Education

The resources below are intended to connect health care facility infection preventionists (IP) with education materials to support their role in preventing, detecting, and responding to healthcare-associated infections.

IPs play an essential role in facility infection prevention policy development, surveillance, and risk assessment.

IPs serve as a resource to other staff and programs within their facilities.

In addition to the state in-person trainings and online references below, there are a number of links to trusted education resources, including the CDC (Centers for Disease Prevention and Control), the Centers for Medicare and Medicaid Services (CMS), and the Association for Professionals in Infection Control and Epidemiology (APIC).

The IP Starter Kit provides Infection Preventionists a brief background and resources for some of the many infection prevention-related responsibilities within health care facilities.

Resources for infection preventionists

Long-Term Care Education series

The long-term care (LTC) education series provides education presentations on topics that include infection prevention, HAIs, antibiotic stewardship, disease surveillance, and outbreak response for staff at skilled nursing facilities, assisted living facilities, local health departments, and other LTC stakeholders. Each session features a new, timely topic presented by the Department of Health Services (DHS) program staff, HAI Infection Preventionists, partner organizations, or other external subject matter experts.

View the full library of education sessions. **Note:** All 2021 and 2022 education sessions can be found by visiting the full library

Have a topic request?

Send topic ideas or requests that you have for the long-term care education series or the IP lunch and learn series to DHSWIHAIPreventionProgram@dhs.wi.gov.

Upcoming LTC Education Session

Date: March 28, 2024

Topic: Wound Care

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