North Carolina SPICE
Statewide Program for Infection Control & Epidemiology

North Carolina Clinical Antibiotic Stewardship Partners

INPATIENT ANTIMICROBIAL STEWARDSHIP SESSION #2

April 12, 2023

CONFLICT OF INTEREST DISCLOSURES

- The views and opinions expressed in this series are those of the speakers and do not reflect the official policy or position of any agency of the US or NC government or UNC.
- Our speakers have the following financial relationships with the manufacturer(s) and/or provider(s) of commercial services discussed in this activity:
  - Dr. Kistler served as a consultant for Base10, Inc on their UTI embedded clinical support tool and received funding from Pfizer to study pneumococcal carriage.
  - Dr. Willis has performed contracted research with: Pfizer (pediatric nirmatrelvir-ritonavir and maternal RSV vaccine), Novavax (pediatric COVID-19 vaccine), and Merck (monoclonal antibody for RSV prevention)
  - Ms. Doughman owns individual Gilead stock.
- The speakers do not intend to discuss an unapproved/investigative use of a commercial product/device in this series, and all COI have been mitigated.
- These slides contain materials from a variety of colleagues, as well as the CDC, WHO, AHRQ, etc.

INTRODUCTIONS

Please put your name, hospital, and location in the chat!

OUTLINE OF TODAY'S SESSION

- Housekeeping
- Review from last session
- CDC Core Elements 3 and 4
- Discussion and "Homework"

CME AND CE CREDIT

- CME & CE for participants
  - Attendance and active participation per learning session
  - Click the link in the chat during the session to document your attendance
  - Complete surveys as requested

ASSIGNMENT FROM LAST SESSION

- Does your program have contributions from all the essential personnel?
  - Physician, pharmacist, clinical microbiology, infection prevention, IT
- Could your program benefit from more engagement with certain stakeholders?
  - Such as specific physician groups, nursing leadership, Quality and Safety teams, etc.
- What does your program need the most to have the greatest impact? What would your program be able to accomplish by filling that need?

CORE ELEMENT #3: PHARMACY EXPERTISE (PREVIOUSLY DRUG EXPERTISE)

Appoint a pharmacist, ideally as the co-leader of the stewardship program, to help lead implementation efforts to improve antibiotic use.

Coming soon: ASHP-SIDP Joint Statement on the Pharmacist's Role in Leading Antimicrobial Stewardship Efforts. This will be an update/revision of the ASHP 2010 statement.

STEWARDSHIP TRAINING CAN HELP

"GENERAL CLINICAL PHARMACISTS ARE MORE EFFECTIVE WHEN THEY HAVE SPECIFIC TRAINING AND/OR EXPERIENCE IN ANTIBIOTIC STEWARDSHIP."[1]

- Infectious Diseases Society of America (IDSA)
- American Society of Health System Pharmacists (ASHP)
- Society of Infectious Diseases Pharmacists (SIDP)[2]
- American College of Clinical Pharmacists (ACCP)
- American College of Consultant Pharmacists (ACCP)
- Society for Healthcare Epidemiology of America (SHEA)
- Making a Difference in Infectious Diseases (MAD-ID) annual conference[2]
- Centers for Disease Prevention and Control (CDC)
- NC CLASP

1. CDC, Core Elements of Hospital Antibiotic Stewardship Programs
2. Certificate programs available

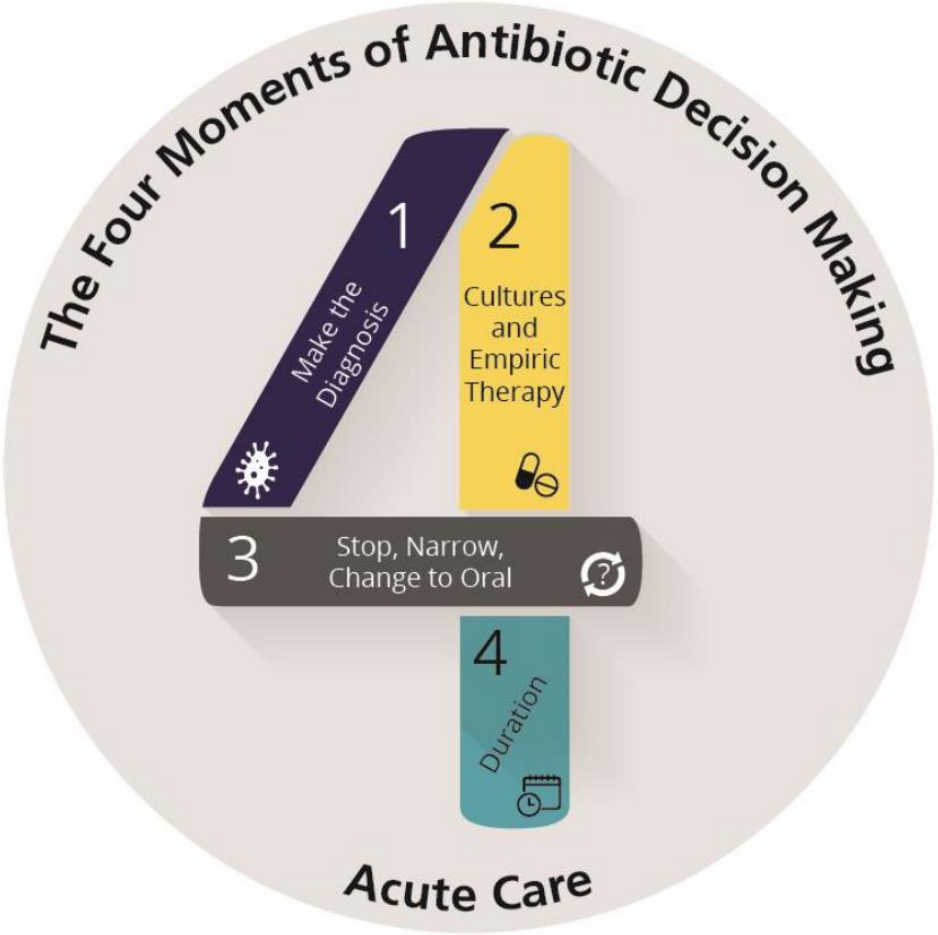
INPATIENT ANTIMICROBIAL USE: A PROCESS

Moment 1 occurs at the time initiation of antibiotic therapy is considered:
Ask, "Does my patient have an infection that requires antibiotics?"

Moment 2 occurs when the decision is made to start antibiotics:
Ask 2 questions, "Have I ordered appropriate cultures before starting antibiotics? What empiric therapy should I initiate?"

Moment 3 occurs every day of antibiotic therapy:
Ask 3 questions, "Can I stop antibiotics? Can I narrow therapy? Can I change from IV to oral therapy?"

Moment 4 occurs when the infectious process is clear and the patient responds to therapy:
Ask, "What duration of antibiotic therapy is needed for my patient's diagnosis?"



ANTIMICROBIAL USE PROCESS:

IMPLICATIONS

- Multiple decision points can be identified in this process, e.g.:
  - First culture result notification
  - Speciation
  - Susceptibility
  - Finalization
- Communicating with the provider with new information in hand (i.e. at a decision point) can greatly impact intervention acceptance
- Interventions made between decisions points tend to be less effective
- Patient monitoring perspective: On a given day, a patient will either be at a decision point ***or*** between decision points

CORE ELEMENT #4: **ACTION**

"IMPLEMENT INTERVENTIONS… TO IMPROVE ANTIBIOTIC USE"

Patient-specific	System wide
Prospective audit and feedback*	**Facility-specific treatment guidelines***
-Bug-drug mismatch/de-escalation	Promote routine individual antibiotic process review i.e. "time out"
-Drug specific monitoring	Clinical decision support systems
-Disease-specific monitoring	Cumulative susceptibility report (antibiogram)
-Optimize route of administration	Drug / Disease state treatment review
-Duration of therapy	Formulary Management, shortage management
Optimize antimicrobials for next level of care	Antimicrobial dosing recs
Preauthorization of certain drugs/classes*	Micro lab output optimization strategies, diagnostic stewardship

Examples, list not all-inclusive

* CDC "priority" interventions,
TJC Elements of Performance, 2023→

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Prospective audit and feedback

- Review of individual cases to offer care improvement recommendations in real time
  (sometimes called **post-prescription review**)

- Challenge: Identifying patients who might benefit from a contribution by the ASP

BREAKOUTS: WHAT WORKS IN PROSPECTIVE AUDIT

- How has your hospital been able to implement prospective audit and feedback? What are the most important barriers?

- What have been your program's most successful tools to identify and prioritize patient-cases in need of intervention?

- What types of interventions have been successful in your practice? Does the communication work well? What has been unsuccessful?

COMMUNICATING UNSOLICITED, PATIENT-SPECIFIC CARE RECOMMENDATIONS

- Personal interaction: Rounds / “handshake” stewardship
- Phone call to responsible team, to key team member (e.g. NP or team clinical pharmacist, if not supervising physician)
- Notes: progress notes, informal notes
- RN “nudging”
- If there is a prescribing team, learn which team member is best to approach with the recommendation.
- Discern the “communication culture” in your institution

PREAUTHORIZATION OF CERTAIN DRUGS/CLASSES

- A system that requires case-by-case approval by a stewardship clinician prior to utilization of certain antimicrobials
- Main advantage: usually very effective
- Challenges:
  - Circumvention
  - Must take care to avoid care delays
- Which antibiotics should be restricted?
  - Difficult to use properly, safely
  - Reserved for resistant pathogens
  - Higher cost/benefit compared to other options
- Execution:
  - Which antimicrobials?
  - Who will grant approval?
  - Mechanism to acquire approval?
  - 24/7 coverage? Other time window…

PROSPECTIVE AUDIT CASE

You are doing prospective audits for the ASP of your 450-bed community hospital. A 47 y/o male is admitted to the surgical ICU with severe pancreatitis, now on hospital Day 4. He was started on linezolid and meropenem on admission due to concerns for sepsis. He is critically ill but stabilized - still intubated, off pressors, acidosis resolved. Linezolid was discontinued at 48 hours (blood cultures NGTD), but meropenem was continued due to a pancreatic pseudocyst.

You contact the attending in the SICU.

- What are your goals?

INITIAL DISCUSSION

ASP: I was reviewing patients on meropenem and noticed this patient. What's the meropenem for?

Attending: This guy was really sick and has a big pseudocyst. It doesn't look like it's infected but I'm not sure, and it could definitely get infected. If that happens, mortality is really high. So we're just going to continue it until he gets better.

ASP: I see... Did you have an end date in mind?

Attending: Can't say for sure, but I think it's going to be at least a couple weeks.

What are the problems?

CONTINUED DISCUSSION

ASP: I see, sounds like he is really sick. His cultures were negative though, maybe we could set a duration of 5 days or so?

Attending: Nah, we can't do that, he's nowhere near out of the woods.

ASP: Since meropenem is something we hold in reserve, would something else work? Maybe we could de-escalate to pip-tazo?

Attending: There's a lot of studies that meropenem is the best antibiotic for getting into the pancreas. You're the expert so I assume you know that. I've been doing it this way for thirty years and our outcomes are really good.

GROUP DISCUSSION: NEXT STEPS

- Are we getting anywhere? Will quoting guidelines and RCTs work?
- How could the steward have approached things differently up front?
- After this case, what could your next steps be?

“HOMEWORK”

- What’s the status of patient-specific ASP strategies (preauthorization and prospective audit) in your facility?

- Are these activities optimized?
  - Do restricted antimicrobials sometimes get through?
  - Do you have enough IT support and personnel for prospective audit?

THE NORTH CAROLINA CLINICAL ANTIBIOTIC STEWARDSHIP PARTNERS (NC CLASP)

- All the information from today's session will be on our website https://spice.unc.edu/ncclasp/