ARE YOU HIP TO NEW INFO? A REVIEW OF RELEVANT ARTICLES FOR ANTIMICROBIAL STEWARDSHIP CONSIDERATION (ABRIDGED).

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DISCLOSURES

- **I have no conflicts of interest to disclose.**

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OBJECTIVES

- Discuss key concepts from presented literature that may help augment education and/or best practices as it relates to antimicrobial stewardship.

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WHAT TO DO WITH 20 MINUTES?

- Tom's typical presentation break down....
  - 5 minutes: Bad dad jokes
  - 5 minutes: Pharmacy or topic related memes
  - 5 minutes: Poking fun at audience members
  - 5 minutes: Digression of correlating relevant topics to some irrelevant pop culture theme
  - **Total 20 minutes of entertainment value**
- **20 minute presentation= all the fun is cut out**

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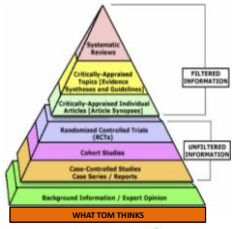
ARTICLE SELECTION CRITERIA

- **Topics/publications were selected based on:**
  - Date of publication inclusion had to be within the last year
  - Assessment of potential impact to patient care and/or education value to learners
  - Any publication was considered regardless of methodology or article type (ie. position paper vs. scientific research)
- **Please note the very biased methodology applied to this process**



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Static vs. Cidal? Let's end the debate...

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STATIC VS. CIDAL: DOES IT MATTER?[1]

- Wald-Dickler et al. "Busting the Myth of "Static vs. Cidal": A Systemic Literature Review
  - **Design:** Systemic literature review of RCT comparing bacteriostatic and bactericidal agents.
  - **Results:** A total of 56 trials were included. Key disease states evaluated in treatment outcomes included pneumonia and SSTI.
  - **Conclusion:** Bactericidal antibiotics do not confer an advantage over bacteriostatic antibiotics in the setting of clinical outcomes.

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STATIC VS. CIDAL: DOES IT MATTER?[1]

- Why is this important?
  - Challenges the traditional thought that bactericidal antibiotics should be preferred to treat serious or high inoculum infections
  - Treating multi-drug resistant organism relating infections may require consideration of using static drugs
    - Ie. VRE bacteremia
  - Educating providers, residents, students on this evolving school of thought is important for future patient care consideration

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Nasal MRSA PCR Testing in the Setting of Pneumonia

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NASAL MRSA PCR AND PNEUMONIA[2,3,4]

Reference	Methodology	Important Highlights
"The clinical utility of Methicillin-Resistant Staphylococcus aureus (MRSA) nasal screening to rule out MRSA pneumonia: A diagnostic Meta-analysis with antimicrobial stewardship implications." CID. 2018.	Meta-analysis with objective to evaluate the diagnostic value of MRSA nasal screening to rule out MRSA pneumonia	Data demonstrated correlation of negative predictive value (NPV) with nasal PCR tests and MRSA pneumonia CAP/HAP NPV= 98.1% VAP NPV= 94.8% Pooled NPV= 96.5% **Note:** PPV for all PCR screening was 44.8%
"Nasal methicillin-resistant Staphylococcus aureus (MRSA) PCR testing reduces the duration of MRSA targeted therapy in patients with suspected MRSA pneumonia." AAC. 2017.	Retrospective analysis with the objective to evaluate clinical outcomes of a nasal MRSA PCR testing protocol	Reduction of mean duration with anti-MRSA therapy by 46.6 hours (P<0.05) Reduction in vancomycin total doses by 2.4 (P<0.05) Reduction in length of stay by 2.84 days (P>0.05)
"Impact of a pharmacist-driven methicillin-resistant Staphylococcus aureus surveillance protocol." AJHP. 2017.	Retrospective single center analysis with the objective to evaluate the impact of pharmacist-driven MRSA surveillance protocol	Protocol group results 2.1 day reducation in vancomycin DOT (P<0.05) 1 day reducation in length of stay (P>0.05) No difference in mortality

NASAL MRSA PCR AND PNEUMONIA[2,3,4]

- Work with lab to assess your PCR capabilities
- Bring the data about the utility of a negative MRSA PCR to the medical staff and get their buy in up front
- Try to hardwire nasal PCR screening with orders for anti-MRSA therapy
  - Reflex nasal swab orders for PCR with orders for vancomycin or linezolid
  - Consider a protocol to allow pharmacists to order nasal PCR testing
  - Incorporate nasal PCR testing results as part of your prospective audit and feedback review of antibiotics

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Clostridium difficile IDSA Guideline Updates

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C.DIFF IDSA GUIDELINE UPDATE[5]

- Recommendations to assess C.diff testing practices
- Changes to treatment recommendations for first line, second line, and recurrent infection
- Recommendations for the role of antimicrobial stewardship programs
  - Minimize frequency/duration of high risk therapy
  - Consider restricting fluoroquinolones, clindamycin, cephs

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TESTING OPTIONS[5]

- Stool toxin test as part of multi-step algorithm (GDH + Toxin, GDH + Toxin arbitrated by NAAT, NAAT + Toxin) rather than NAAT alone when there are no preagreed institutional criteria for patient stool submission.
- NAAT alone or multistep algorithm for testing (GDH + Toxin, GDH + Toxin arbitrated by NAAT, NAAT + Toxin) rather than toxin test alone when there are preagreed institutional criteria for patient stool submission.

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CLOSTRIDIUM DIFFICILE: IDSA 2017 GUIDELINE UPDATE[5]

2010 Guidelines	2017 Guidelines
1st infection **Mild to moderate:** Metronidazole 500 mg TID x 10-14 days OR Vancomycin 125 mg QID x 10-14 days **Severe:** Vancomycin 500 mg QID, Vancomycin rectal enema 500 mg per 100 mL NS Q6H, and Metronidazole 500 mg IV Q8H (severe complicated)	**1st infection** **All initial infections:** Vancomycin 125 mg QID x 10-14 days OR Fidaxomicin 200 mg BID x 10 days **Note:** Metronidazole use is not recommended unless above options are unavailable 500 mg TID x 10 days (mild to moderate only) **Fulminant CDI:** Vancomycin 500 mg QID, Vancomycin rectal enema 500 mg per 100 mL NS Q6H, and Metronidazole 500 mg Q8H

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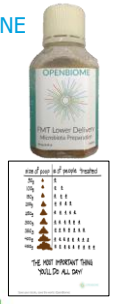
CLOSTRIDIUM DIFFICILE: IDSA 2017 GUIDELINE UPDATE[5]

- OpenBiome
  - Commercially prepared fecal slurry and capsules for stool transplantation
    - Capsules= $635 (30ct), Slurry= $485
  - A couple of regulatory hoops
    - Requires "clinical partner registration form" for your facility that asks to identify a supervising physician as a point of contact
    - Must be evidence of recurrence despite standard therapy
    - Post administration follow up with patient



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Outpatient Antibiotic Stewardship

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OUTPATIENT ANTIBIOTIC STEWARDSHIP[6,7]

Reference	Methodology	Important Highlights
Dobson et al. "Outpatient antibiotic stewardship: Interventions and opportunities." APHA. 2017.	➢ Perspective article summarizing key concepts with regulatory considerations and practical applications for outpatient antibiotic stewardship programs	➢ Both articles condense information needed to educate and plan for outpatient antibiotic stewardship activities ➢ Provides practical advice for building an outpatient AMS team ➢ Outlines initiatives that AMS programs may target ➢ Provides suggestions for possible metrics
Klepser et al. "A call to action for outpatient antibiotic stewardship." APHA. 2017	➢ Perspective article outlining strategic steps for implementing outpatient antibiotic stewardship programs	

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OUTPATIENT ANTIBIOTIC STEWARDSHIP[6,7]

- Identify your outpatient antibiotic stewardship team
- Target high volume prescribing disease states with your initiatives
- Develop quality metrics that you will follow with pre/post implementation
  - Percent of visits with antibiotic prescription
  - Total antibiotic prescriptions
- Consider a multi pronged approach to implementation
  - Heavy dose of education to the medical and nursing staff
  - Developing electronic or paper pathways to help drive practice

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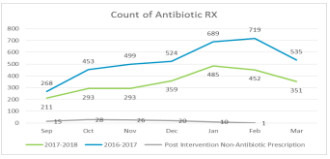
OUTPATIENT ANTIMICROBIAL STEWARDSHIP AT SPH

- **Team:** Am care pharmacist, primary care provider, quality, informatics, nursing, lab
- **FY 18': Upper respiratory tract infections**
  - Developed targeted education
  - Developed clinical pathways
  - Developed viral prescription
- **Key interventions:**
  - Promotion of "watchful waiting" using viral prescription
  - Developed clinical pathways for viral vs. bacterial diagnosis with treatment recommendations



REFERENCES & RESOURCES

1. Wald-Dickler et al. "Busting the myth of static vs. cidal: A systemic literature review." CID. 2018.
2. Parente et al. "The clinical utility of methicillin-resistant Staphyloccocus aureus (MRSA) nasal screening to rule out MRSA pneumonia: A diagnostic meta-analysis with antimicrobial stewardship implications." CID. 2018.
3. Baby et al. "Nasal methicillin-resistant Staphylococcus aureus (MRSA) PCR testing reduces duration of MRSA-targeted therapy in patients with suspected MRSA pneumonia." AAC. Vol 61(4). 2017.
4. Willis et al. "Impact of a pharmacist-driven methicillin-resistant Staphylococcus aureus surveillance protocol." AJHP. Vol 74(21). 2017.
5. McDonald et al. "Clinical practice guidelines for Clostridium difficile infection in adults and children: 2017 update by the Infectious Disease Society of America (IDSA) and Society for Healthcare Epidemiology of America (SHEA)." CID. 2018.
6. Klepser et al. "A call to action for outpatient antibiotic stewardship." APHA. Vol 57. 2017.
7. Dobson et al. "Outpatient antibiotic stewardship: Interventions and opportunities." APHA. Vol 57. 2017.

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QUESTIONS?

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