UWTASP

tele-antimicrobial stewardship program

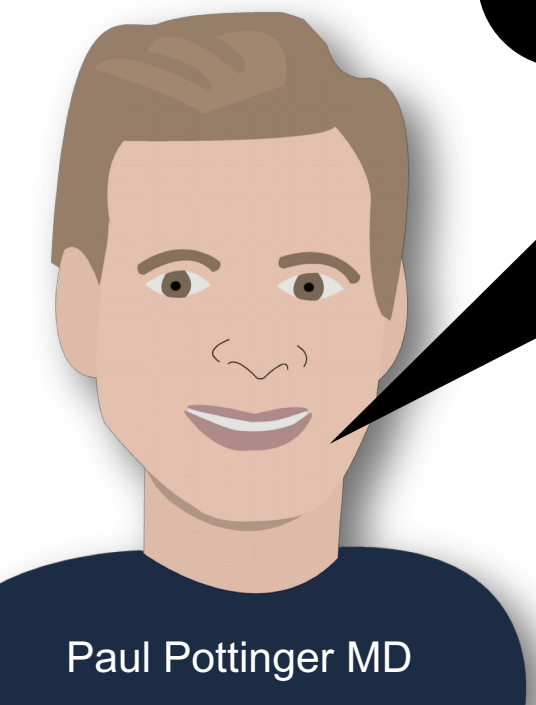
26 March, 2019

Agenda

- Paul Pottinger: *4 Moments of Stewardship*
- Case Discussions
- Open Discussion

4 Moments: *Objectives*

- Name the 4 Moments...
- Examples for Each Moment...
- Share your successes and challenges



Paul Pottinger MD

4 Moments: *Overview*

- Steward's Perspective
  - ✓ We think about bugs & drugs for a living...
  - ✓ Macro-data perspective...
  - ✓ AS is clearly the right thing to do...

- Prescriber's Perspective
  - ✓ ID one of many tasks in a busy day...
  - ✓ Individual patient-focus...
  - ✓ AS sounds cool... I want to help...
    I'm busy... HOW can I make a difference?

4 Moments: *Overview*

- Make It Easy
- Boil our approach into 4 moments...

1. Does my pt have an infection that needs abx?
2. If so... have I ordered cultures before abx? And what empiric abx should I choose?
3. It's a new day... Can I stop abx, or deescalate spectrum, or convert IV to PO?
4. If abx still needed... how long should I treat?

Tamma *JAMA* 2019

Moment #1: *Does my pt need abx?*

Common Pitfalls

- UTI... or ABU?
- CAP... or bronchitis?

Moment #1: *Does my pt need abx?*

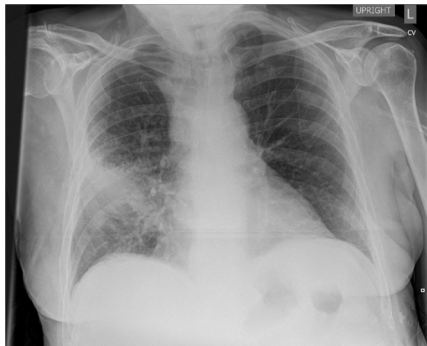
UTI... or ABU?

- Colonization (asymptomatic bacteriuria): Endogenous flora ascends urethra (common in elderly). Abx NOT indicated.
- Infection (UTI): Inflammatory response to invasive bugs (rare). Abx for this subset only.

Moment #1: *Does my pt need abx?*

CAP... or Bronchitis?

- Bronchitis (Common... rarely harmful): Cough but **no infiltrates** or sepsis. Abx NOT indicated.
- CAP (potentially deadly): Cough... purulent sputum... fever... WBC elevation... **infiltrate on CXR**. Abx for this group.



Moment #1: *Does my pt need abx?*

"Despite clear evidence, guidelines, quality measures and more than 15 years of educational efforts stating the antibiotic prescribing rate should be zero, the antibiotic prescribing rate for acute bronchitis is around 70%"

Michael Barnett, MD
JAMA 2014

Moment #2: *UTI Testing....*

Microscopic analysis

Pyuria: majority of symptomatic UTIs have pyuria…
but *lower PPV among catheterized pts*

Gram stain for bacteria: >1 organism per hpf on uncentrifuged urine is $>10^5$ on culture

Culture

Method: collect from mid-stream or sterilized tube port, not bag
Inoculate 1 to 10 μl onto agar plate

Criteria for *Enterobacteriaceae* UTI

- Symptomatic women
  10^2: sensitivity 95%, specificity 85% for cystitis
- Asymptomatic women
  10^5: used in high risk clinical settings & research

Moment #2: *UTI Empiric Rx....*

- Nitrofurantoin (*Macrobid*) 100mg PO BID x 5 d (caution in pyelo, GFR<30, age> 65)

OR

- TMP/SMX (*Bactrim*) resistance <20%: 1 DS PO BID x 3 days

OR

- Fosfomycin (*Monurol*) 3gm PO x 1 dose (not for pyelo!)
- TMP/SMX resistance >20%:
  - ✓ Cipro 500mg PO QD x 3 days *OR*
  - ✓ Cefpodoxime 100mg PO BID x 7 days

Moment #2: *CAP Testing....*

Microscopic Sputum Analysis

- Sheets of gram-positive diplococci? It's *S.pneumoniae*!

Cultures

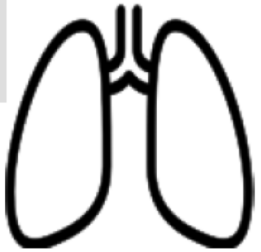
- Blood Cultures: Up to 20% positivity.
- Sputum Cultures: Often overgrown with oral flora

Other Testing

- CXR
- CBC with Diff, CMP
- Urinary pneumococcal antigen
- Consider influenza testing... legionella testing

Moment #2: *CAP Empiric Rx....*

PNEUMONIA



A. Community-acquired pneumonia [non-aspiration risk] (*S. pneumoniae, atypicals*)

Diagnosis: Send sputum gram stain & culture, CXR, urinary pneumococcal antigen and blood cultures.

- Ceftriaxone 1 gm IV q24h **PLUS**
- Azithromycin 500 mg PO/IV q24h x 5 days
- If previous MRSA colonization or infection, **CONSIDER ADDING:** Vancomycin**

Typical Duration: 7 days

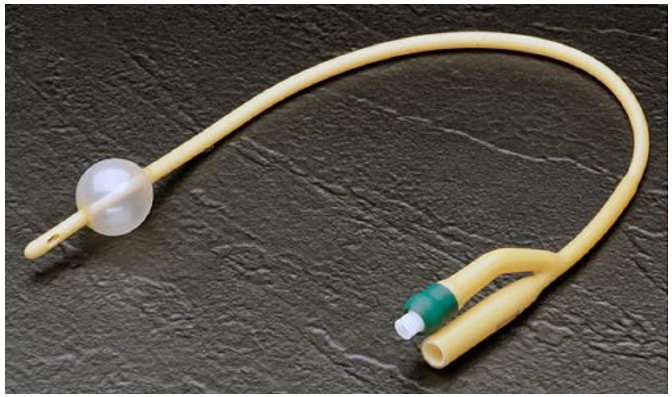
B. CAP with cavitary lesion(s) (*Oral anaerobes and MRSA*)

- Ampicillin/Sulbactam 3 gm IV q6h **PLUS**
- Azithromycin 500 mg PO/IV q24h **PLUS**
- Vancomycin**

Typical Duration: 10-21 days

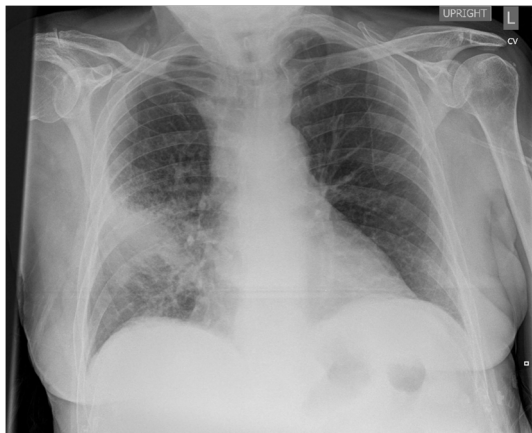
Moment #3: *UTI De-Escalation...*

- It's *E.coli*... right?
- Most will be sensitive to TMP/SMX or nitro or fosfomycin... all great options in cystitis.
- For pyelonephritis, best likely options are TMP/SMX or beta-lactam or FQ... and all can be given PO.



Moment #3: *CAP De-Escalation...*

- Patient is improving... right?
- It's *S.pneumo*... right?
- If so, follow the sensi panel... probably amoxicillin alone is fine.
- If cultures negative:
  - ✓ amoxicillin-clav 875-2000 mg PO BID
  - ✓ 2nd Generation Ceph
  - ✓ Levo or Moxi (if you must…)



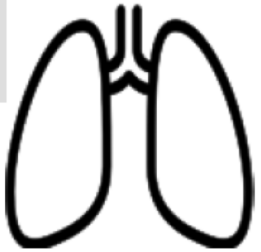
Moment #4: *UTI Duration….*

- Nitrofurantoin *(Macrobid*) 100mg PO BID x 5 days (avoid in pyelo!) *OR*
- TMP/SMX (*Bactrim*) resistance <20%: 1 DS PO BID x 3 days *OR*
- Fosfomycin (*Monurol*) 3gm PO x 1 dose (avoid in pyelo!)

- TMP/SMX resistance >20%:
  - ✓ Cipro 500mg PO QD x 3 days *OR*
  - ✓ Cefpodoxime 100mg PO BID x 7 days

Moment #4: *CAP Duration....*

PNEUMONIA



A. Community-acquired pneumonia [non-aspiration risk] (*S. pneumoniae, atypicals*)

Diagnosis: Send sputum gram stain & culture, CXR, urinary pneumococcal antigen and blood cultures.

- Ceftriaxone 1 gm IV q24h **PLUS**
- Azithromycin 500 mg PO/IV q24h x 5 days
- If previous MRSA colonization or infection, **CONSIDER ADDING:** Vancomycin**

Typical Duration: 7 days

B. CAP with cavitary lesion(s) (*Oral anaerobes and MRSA*)

- Ampicillin/Sulbactam 3 gm IV q6h **PLUS**
- Azithromycin 500 mg PO/IV q24h **PLUS**
- Vancomycin**

Typical Duration: 10-21 days

4 Moments: *Overview*

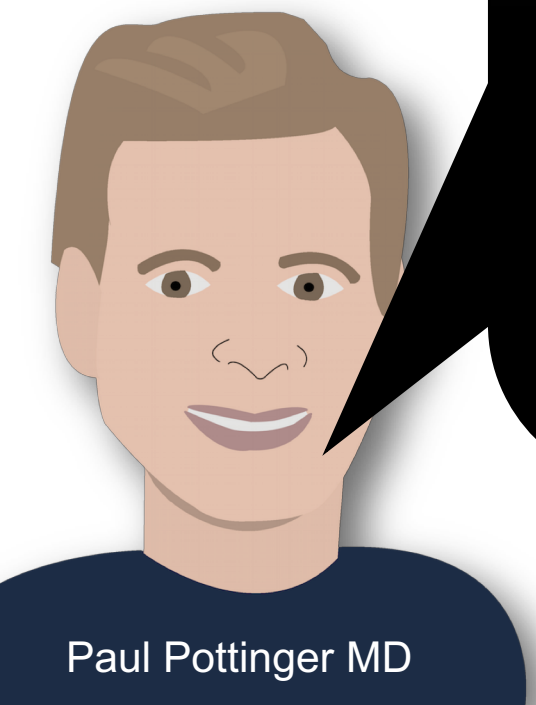
- Make It Easy
- Boil our approach into 4 moments...

1. Does my pt have an infection that needs abx?
2. If so... have I ordered cultures before abx? And what empiric abx should I choose?
3. It's a new day... Can I stop abx, or deescalate spectrum, or convert IV to PO?
4. If abx still needed... how long should I treat?
5. Prevent spread of bad bugs!

Tamma *JAMA* 2019

4 Moments: *Conclusions*

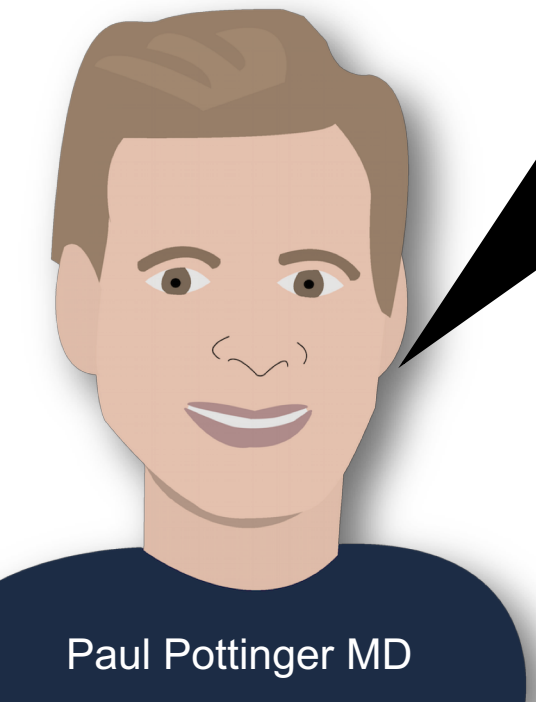
- The 4 Moments:
  - ✓ Need Abx?
  - ✓ Proper testing & empiric Rx?
  - ✓ De-Escalation at 24-48 hrs?
  - ✓ How long until done?
- Rational...
- Evidence- based...
- Easy-to-use!



Paul Pottinger MD

4 Moments: *Question*

- Will you consider incorporating these “moments” into your AS activities?



A. Yep
B. Nope
C. Maybe