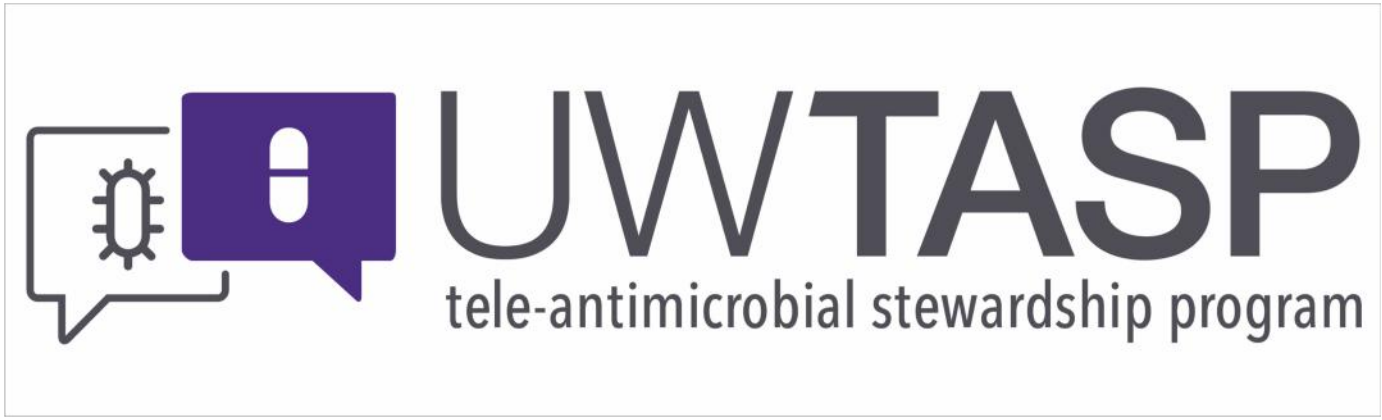
UWTASP

tele-antimicrobial stewardship program

January 15, 2019

Agenda

- *Quick Hits:* PNA, UTI and SSTI
- Case Discussions
- Open Discussion



Quick Hits: Stewarding Pneumonia

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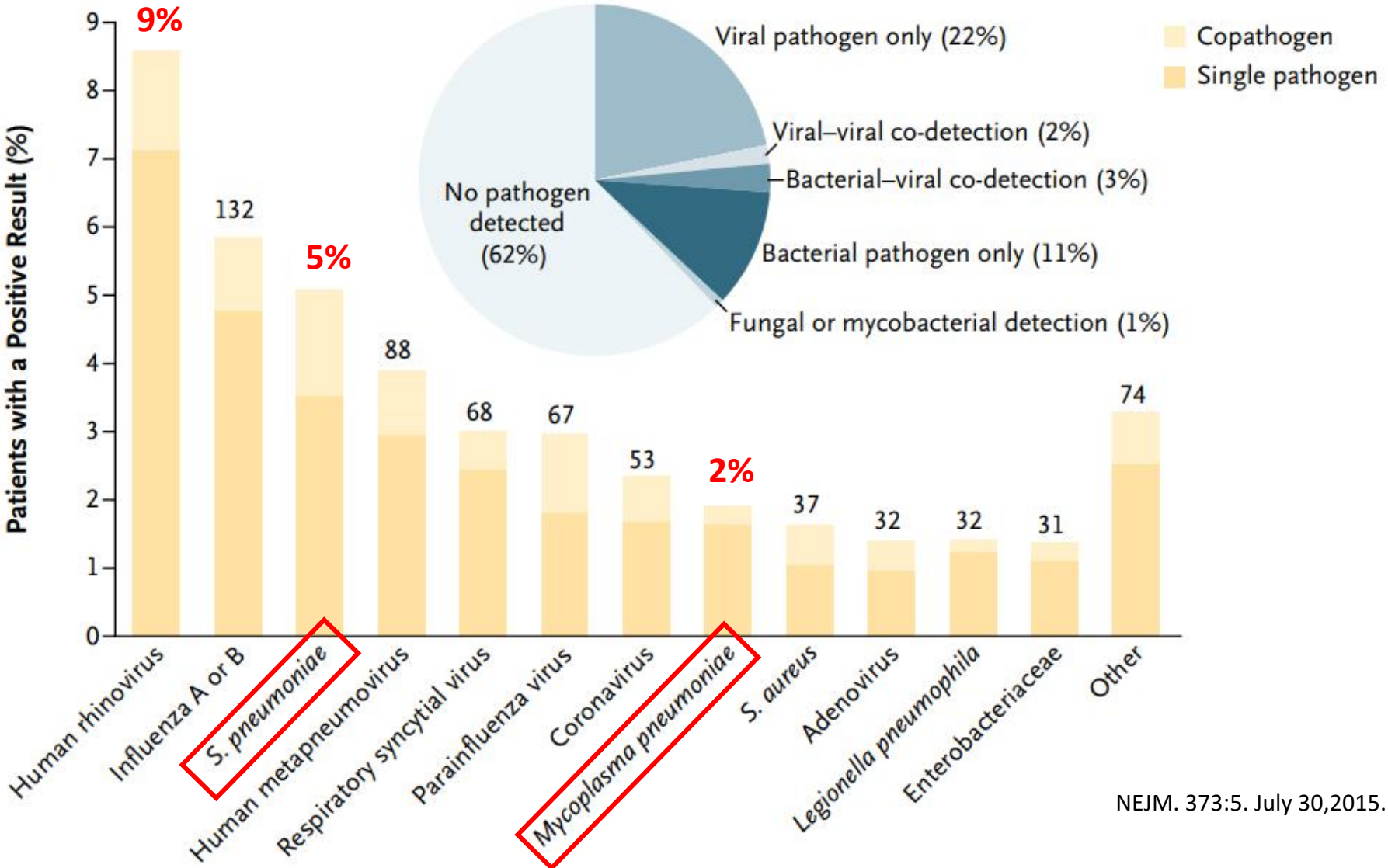
Causative organisms in pneumonia identified in 38% of cases



NEJM. 373:5. July 30,2015.

What drives duration of therapy?
History, the Solar System, and a Human hand

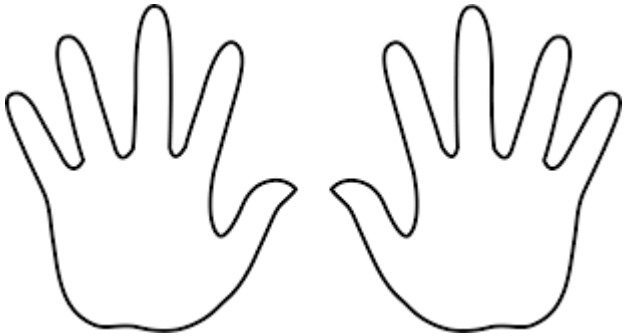
Constantine

-Babylonians held the number 7 in mystical significance

-Ancient Chinese and Japanese based 7-day cycles on celestial bodies (Sun, Moon, Mars, Mercury, Jupiter, Venus and Saturn)

-Judaism, the world was created in 7 days

AD 321: 7-day week is formally codified by the Romans



JAMA Intern Med. 2016 Sep 1; 176(9): 1254–1255.
http://www.bbc.co.uk/religion/0/20394641

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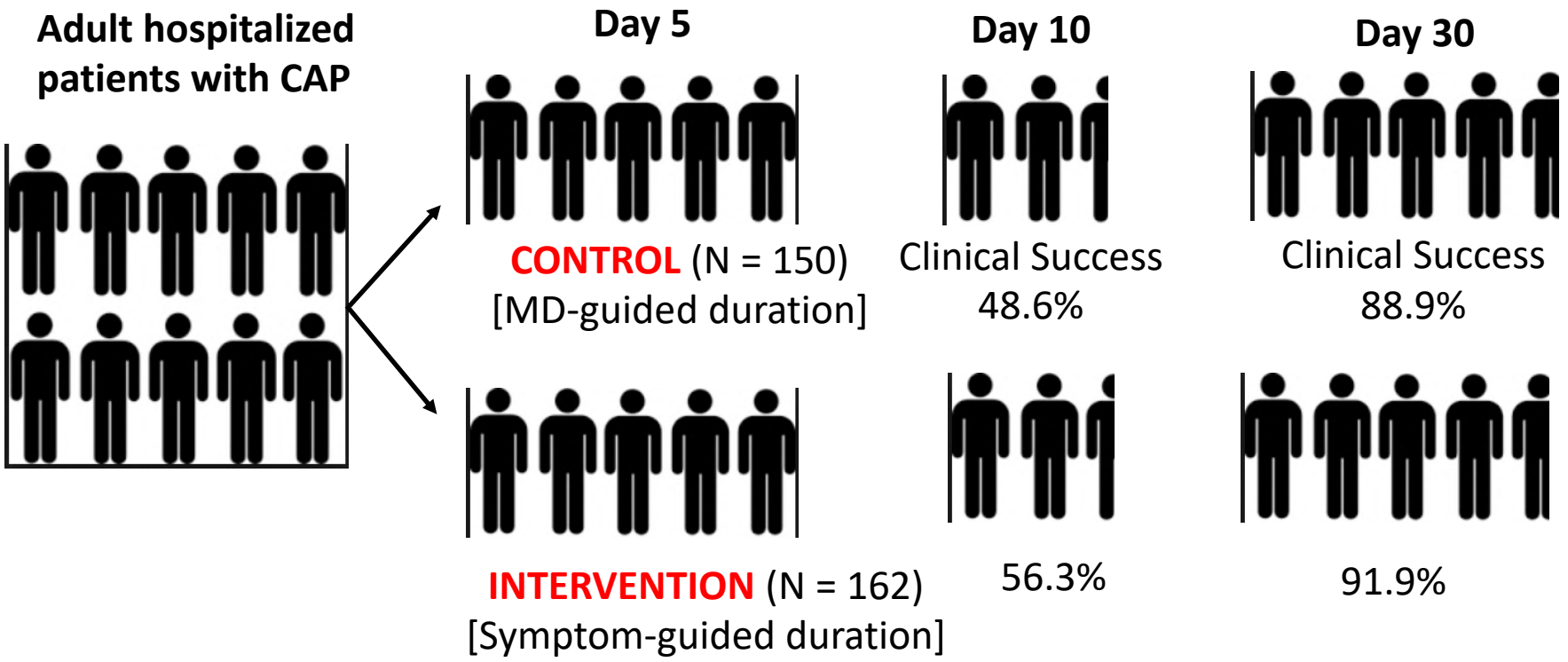
Symptom-guided duration



INTERVENTION, antibiotics stopped if:
Afebrile x48h AND ≤1 CAP-associated sign of clinical instability:
[SBP < 90 | HR > 100 | RR>24 |O2 Sat < 90% |PaO2 < 60 on RA]

JAMA Intern Med. 2016 Sep 1;176(9):1257-65.

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Symptom-guided duration, some caveats

- 30% of subjects in the intervention received >5 days of antibiotic therapy
- Excluded patients living in a nursing home or prior hospital stay within 14 days prior to admit
- Excluded immunosuppressed patients
- No differences in LOS or length or days of IV antibiotic
- 80% of antibiotics selected were fluoroquinolones

JAMA Intern Med. 2016 Sep 1;176(9):1257-65.

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From Publication to Patient

Sticky Notes to Physicians

Comment

MD, IV fluids order was for 1 liter which is complete. Would you like to d/c the order now? Thank you, nursing.

2/1- Dr. Yuan, suggest d/c antibiotics after tomorrow's dose (2/2). Will have completed 5 days of abx which is non-inferior to longer duration for mild-moderate CAP. JAMA Int Med. 2016 Sep; 176(9): 1257-65. Thank you- Kevin S, PharmD x5636

Last edited by **Kevin Stock, PharmD** on 02/01/18 at 1206

View All

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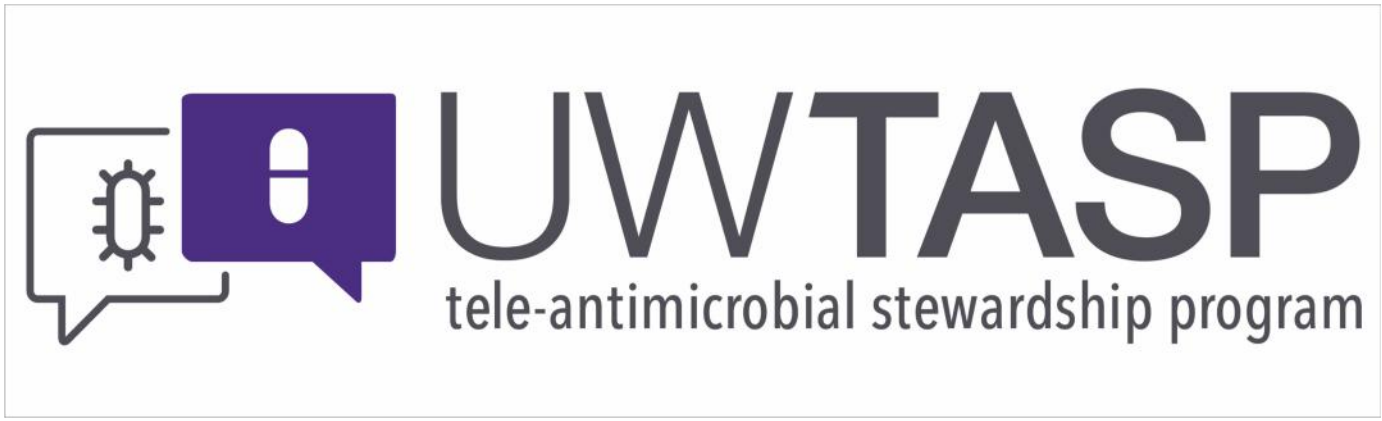

Quick Hits: Stewarding UTI

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There are three truths: death, taxes, and the urine culture is gonna grow

UTI Symptoms

Sx of UTI: fever, urgency, frequency, dysuria, hematuria, suprapubic tenderness, or hypotension

UTI Symptom Myths

- Dark, foul-smelling, cloudy urine
- Dizziness, falls, decreased appetite, AMS
- DON'T CHECK THE URINE

UTI: Diagnostic Stewardship

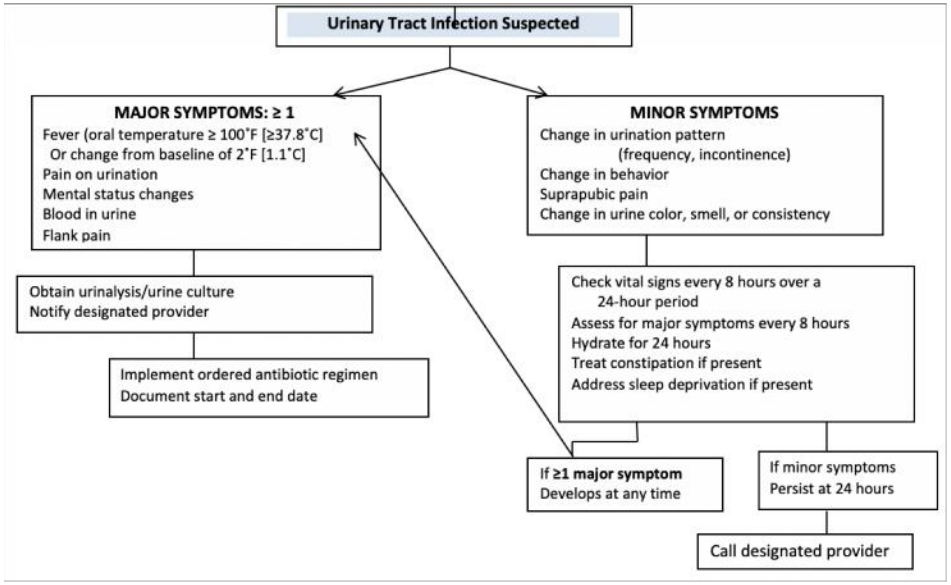
Asymptomatic bacteriuria (and even pyuria)

- ONLY TREAT: pregnancy, urologic procedure
- Common, increases with age and catheters
- Treatment does NOT improve outcomes
  - Not a/w lower rate of complications/death
  - Adverse drug events and rising resistance

UTI: Diagnostic Stewardship Strategies

IMPROVE APPROPRIATE TESTING

- Utilize education and algorithms



STOP INAPPROPRIATE Cx

- Reflex to culture only when UA is positive

(+LE, +WBC, +nitrites, + bacteria)

- NPV of pyuria is 90%+

UTI: Fluoroquinodon’t

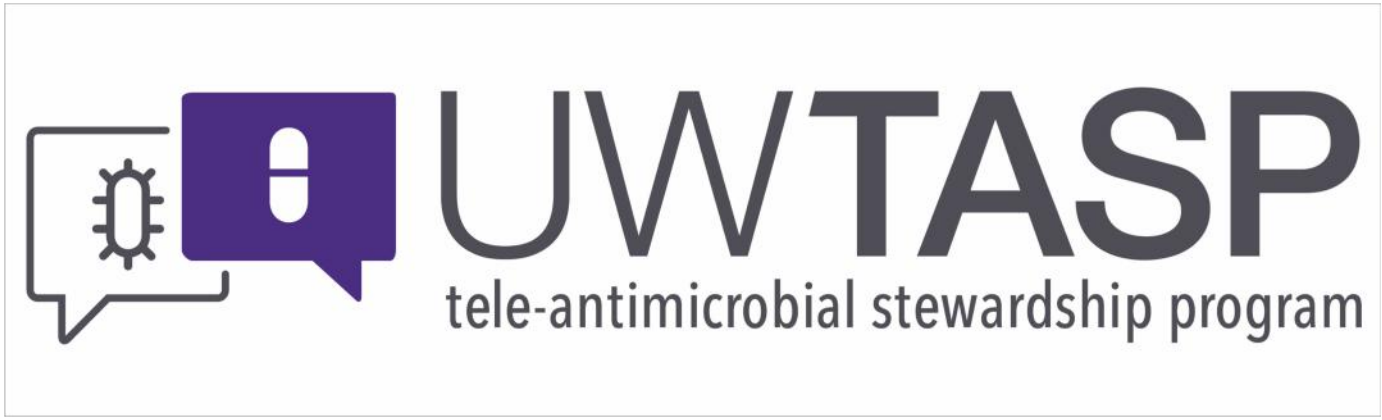
Cystitis

- FQ are NOT first line

Pyelonephritis

- FQ appropriate for outpatient treatment with sensitive organisms
- **Duration 5-7 days (non-inferior to 14)**

Peterson J, Urology, 2008



Quick Hits: Stewarding SSTI

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SSTI: Most Common Organisms

- Aerobic Gram-positive bacteria
- ***Staphylococcus aureus*** **(MSSA and MRSA)**
  - ➢ **Purulent SSTI like abscesses and wound infections**
- ***Streptococcus pyogenes (*****aka Group A strep)**
  - ➢ **Non-purulent SSTIs like cellulitis**
- *Vibrio vulnificis,* aeromonas, peptostreptococcus, clostridia species
- Polymicrobial infections

10 Cellulitis Myths

- Myth 1: Skin that is red and swollen is definitely cellulitis.
- Myth 2: My patient has bilateral lower-extremity swelling and redness; my patient has bilateral cellulitis.
- Myth 4: All clinically stable, community-dwelling patients presenting to the ED with cellulitis should be treated with an antibiotic that has activity against MRSA.
- Myth 5: My patient requires hospitalization for cellulitis, therefore, my patient has a MRSA infection and requires MRSA targeted anti-infective therapy.

McCreay, J Emerg Med, 2017

10 Cellulitis Myths

- Myth 7: Because one cannot tell whether cellulitis is caused by *Streptococcus* spp., MSSA, MRSA, Gram-negative or anaerobic pathogens, each patient needs to be treated with broad-spectrum antibiotic therapy.
- Myth 8: If the redness extends beyond the drawn wound margin in a patient with cellulitis, the patient is getting worse.
- Myth 10: All patients with tick bites and surrounding redness have cellulitis.

McCreay, J Emerg Med, 2017

MANAGEMENT OF SSTIs

NONPURULENT
Necrotizing Infection /Cellulitis /Erysipelas

Severe
- **EMERGENT SURGICAL INSPECTION / DEBRIDEMENT**
  - ► Rule out necrotizing process
- **EMPIRIC Rx**
  - Vancomycin ***PLUS*** Piperacillin/Tazobactam

C & S

DEFINED Rx (Necrotizing Infections)

Monomicrobial *Streptococcus pyogenes*
- Penicillin ***PLUS*** Clindamycin

Clostridial sp.
- Penicillin ***PLUS*** Clindamycin

Vibrio vulnificus
- Doxycycline ***PLUS*** Ceftazidime

Aeromonas hydrophila
- Doxycycline ***PLUS*** Ciprofloxacin

Polymicrobial
- Vancomycin ***PLUS*** Piperacillin/Tazobactam

Moderate
INTRAVENOUS Rx
- Penicillin ***or***
- Ceftriaxone ***or***
- Cefazolin ***or***
- Clindamycin

Mild
ORAL Rx
- Penicillin VK ***or***
- Cephalosporin ***or***
- Dicloxacillin ***or***
- Clindamycin

Moderate: signs of infection
Severe: failure of therapy or +SIRS

PURULENT
Furuncle / Carbuncle / Abscess

Severe
I & D
C & S

EMPIRIC Rx[1]
- Vancomycin ***or***
- Daptomycin ***or***
- Linezolid ***or***
- Televancin ***or***
- Ceftaroline

DEFINED Rx
MRSA
- See Empiric

MSSA
- Nafcillin ***or***
- Cefazolin ***or***
- Clindamycin

Moderate
I & D
C & S

EMPIRIC Rx
- TMP/SMX ***or***
- Doxycycline

DEFINED Rx
MRSA
- TMP/SMX

MSSA
- Dicloxacillin ***or***
- Cephalexin

Mild
I & D

[1]Since daptomycin and televancin are not approved for use in children, vancomycin is recommended; clindamycin may be used if clindamycin resistance is <10-15% at the institution.