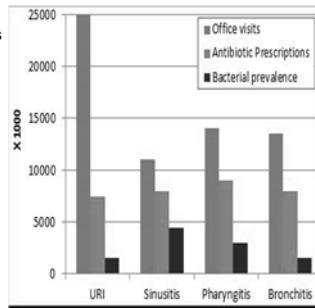


## Respiratory Infections and Antibiotics

Approximately 75% of all ambulatory antibiotic prescriptions are for the treatment of 5 specific acute respiratory infections (ARI):  
 Otitis media  
 Sinusitis  
 Pharyngitis  
 Bronchitis  
 Upper respiratory tract infections (URIs)



CDC.gov. Figure adapted from Gonzales et al. *Clin Infect Dis*. 2001;33:757-62

	Rate per 1000 Population 2010-2011 (Weighted Mean Annual Rate of Antibiotic Prescriptions (95% CI)	Estimated Appropriate Annual Rate of Antibiotic Prescriptions <sup>a</sup>	Percentual Reduction in Annual Antibiotic Prescription Rates, %
<b>20-64 y</b>			
All acute respiratory conditions <sup>a</sup>	150 (129 to 170)	45 <sup>b</sup>	-70
Sinusitis	55 (45 to 64)	27	-51
Suppurative otitis media	9 (7 to 11)	6	-33
Pharyngitis	29 (23 to 35)	7	-75
Acute otitis media, influenza, non-suppurative otitis media, viral URI, and viral pneumonia <sup>a</sup>	52 (43 to 60)	0	-100
Pneumonia	5 (4 to 7)	5	0
Other conditions <sup>a</sup>	269 (239 to 298)	227 <sup>b</sup>	-16
Urinary tract infection	35 (30 to 41)	35	0
Miscellaneous bacterial infections	11 (9 to 13)	11	0
Remaining other conditions <sup>a</sup>	222 (197 to 248)	180	-19
Total <sup>a</sup>	418 (372 to 464)	272	-35
<b>65 y</b>			
All acute respiratory conditions <sup>a</sup>	136 (113 to 162)	63 <sup>b</sup>	-54
Sinusitis	44 (32 to 57)	37	-16
Acute otitis media, influenza, non-suppurative otitis media, viral URI, and viral pneumonia <sup>a</sup>	66 (48 to 84)	0	-100
Pneumonia	12 (7 to 17)	12	0
Other conditions <sup>a</sup>	480 (418 to 543)	443 <sup>b</sup>	-8
Urinary tract infection	64 (51 to 77)	64	0
Remaining other conditions <sup>a</sup>	401 (346 to 456)	362	-10
Total <sup>a</sup>	617 (544 to 689)	504	-18
<b>All Ages</b>			
All acute respiratory conditions <sup>a</sup>	221 (198 to 245)	111	-50
Other conditions <sup>a</sup>	284 (256 to 313)	242	-15
Total <sup>a</sup>	506 (458 to 554)	353	-30

>30% of outpatient antibiotic prescriptions are unnecessary

Fleming-Dutra et al. *JAMA* 2016

## Optimizing Antibiotic Use

- The excessive use of antibiotics in ambulatory practice has contributed to the emergence and spread of antibiotic-resistant bacteria.
- Proper selection of who and when to treat is important.
- Issues to balance:
  - Patient discomfort
  - Patient expectations

## Get Smart: Know When Antibiotics Work



Get Smart About Antibiotics Week is an annual one-week observance to raise awareness of the threat of antibiotic resistance and the importance of appropriate antibiotic prescribing and use.

## Case 1

35-year-old woman presents with 7 days of cough, productive of yellow-green sputum, no fever, chills, sweats, weight loss. Non-smoker. No travel. No sig PMHx.  
 On exam: normal vital signs, + scattered bilateral wheezes.

You suspect acute bronchitis. Which of the following would be an indication for a Chest X-ray in a this patient?

- New onset wheezing
- Purulent sputum
- Temperature >38°C
- Cough of 2 weeks duration

## Acute Bronchitis

- Cough is the most common symptom for which adult patients visit their primary care provider, and acute bronchitis is the most common diagnosis in these patients.
- Typical presentation: Cough more than five days and less than 3 weeks duration
  - Normal vitals, afebrile
  - May have wheezing
  - May have purulent sputum

Albert RH. Diagnosis and treatment of acute bronchitis. *Am Fam Physician*. 2010;82(11):1345-50.

## Acute Bronchitis - Diagnosis

- Viral
    - Adenovirus
    - Coronavirus
    - Influenza A and B
    - Metapneumovirus
    - Parainfluenza virus
    - Respiratory syncytial virus
    - Rhinovirus
  - Bacterial
    - Mycoplasma pneumoniae
    - Chlamydia pneumoniae
    - Bordetella pertussis
- Diagnostic testing in otherwise healthy hosts is not typically performed
- The vast majority of infections are viral
  - Identifying and treating Mycoplasma or Chlamydia bacterial bronchitis has not been found to be clinically useful
- Influenza, pneumonia, and pertussis are diagnoses needing consideration for specific testing and treatment in the appropriate clinical setting

Albert RH. Diagnosis and treatment of acute bronchitis. *Am Fam Physician*. 2010;82(11):1345-50.

## Indications for a Chest X-ray

Obtain a Chest X-ray to evaluate for pneumonia IF:

- Abnormal vital signs
    - heart rate  $\geq 100$  beats/min
    - respiratory rate  $\geq 24$  breaths/min
  - Fever (oral temperature  $\geq 38$  °C)
  - Abnormal lung examination findings
    - focal consolidation, egophony, fremitus
- new onset wheezing, purulent sputum are not indicative of bacterial infection or pneumonia

Albert RH. Diagnosis and treatment of acute bronchitis. *Am Fam Physician*. 2010;82(11):1345-50.

## Influenza

- Consider a diagnosis of Influenza if:
    - Fever
    - in a patient with
    - Cough, Sputum, Constitutional symptoms
- If a diagnosis of Influenza is made based on clinical, epidemiological (season, outbreak), or laboratory data, consideration of anti-viral therapy is warranted

Albert RH. Diagnosis and treatment of acute bronchitis. *Am Fam Physician*. 2010;82(11):1345-50.  
<http://www.cdc.gov/flu/professionals/antivirals/index.htm>

## Should I test for Pertussis?

- Epidemiology: Unvaccinated patient in setting of known outbreak or known exposure
  - Clinical: Patients with paroxysms of coughing, whooping, or post-tussive emesis and a cough of at least two weeks duration without an apparent cause may be appropriate for testing
- If a diagnosis of Pertussis is made based on clinical criteria or laboratory testing, antibiotic therapy is warranted

## Antibiotics for ARI

- Routine treatment of uncomplicated acute bronchitis with antibiotics is not recommended
  - Antibiotics may have a modest beneficial effect in elderly people with multimorbidity
  - The magnitude of benefit needs to be considered against potential side effects, increased resistance and costs
- URI and acute bronchitis may overlap or coincide
  - Over 200 viruses can cause the common cold; antibiotics are not indicated for URI

www.CDC.gov/Get Smart-. Cochrane Antibiotics for acute bronchitis. 2014  
 Albert RH. Diagnosis and treatment of acute bronchitis. *Am Fam Physician*. 2010;82(11):1345-50.

## Strategies for Improving Antibiotic Use for ARI

- Symptom Management
  - Delayed Prescription (contingency plan)
  - Education
    - Antibiotics do not cure viral infections
    - Antibiotic harms include resistance, adverse effects, *C. difficile*
- The duration of office visits for acute respiratory infection is unchanged or only one minute longer when antibiotics are not prescribed.



www.cdc.gov/getsmart

## Symptom Management

Symptomatic therapy:

- Decongestants combined with a first-generation antihistamine
- Non-steroidal anti-inflammatory drugs
- Beta agonists (albuterol) if wheezing is present
  
- Evidence is lacking to support antihistamines (as monotherapy), opioids, intranasal corticosteroids, and nasal saline irrigation
- Weigh the benefits and harms of symptomatic therapy

www.CDC.gov/Get Smart.; Albert RH. Diagnosis and treatment of acute bronchitis. *Am Fam Physician*. 2010  
Fashner J, Ericson K, Werner S. Treatment of the common cold in children and adults. *Am Fam Physician*. 2012;86(2):153-9.

## Case 2

40-year-old woman comes to the office with complaint of sore throat, sudden onset 3 days ago, associated with hoarseness. No fever, chills, sweats, or cough.

PEx: Normal VS; mild tonsillar erythema, no exudate, no lymphadenopathy

The optimal management includes:

1. Do a rapid antigen test for Group A Strep; only treat if positive
2. Do a throat culture for GAS; empiric antibiotics while waiting for results
3. No diagnostic testing; empiric antibiotics for GAS
4. No diagnostic testing; symptomatic management

## Clinical Features: Viral Pharyngitis

- Cough
- Hoarseness
- Nasal congestion
- Runny nose
- Conjunctivitis
- Oral ulcers

## Is it Group A Streptococcus (GAS)?

Responsible for only 5-15%  
of adult cases of pharyngitis

Reasons for identification/treatment of GAS pharyngitis:

- Prevent sequelae including acute rheumatic fever, peritonsillar abscess and acute otitis media
- Decrease duration of symptoms/culture positivity

Shulman ST, et al. *Clin Infect Dis*. 2012. 55:e86- e102.

## Pharyngitis – Is it GAS?

- Clinical features alone do not distinguish between GAS and viral pharyngitis
  
- Those who meet two or more Centor criteria (e.g., fever, tonsillar exudates, tender cervical lymphadenopathy, absence of cough) should receive a RADT.
  
- Throat cultures are not routinely recommended for adults.

Shulman ST, et al. *Clin Infect Dis*. 2012. 55:e86- e102.

## Centor Clinical Criteria

Fever, lymphadenopathy, exudate, absence of cough

### < 2 Criteria Present

- No diagnostic testing and no antibiotic treatment recommended
- Good for ruling out patients who do not have the disease

### ≥ 2 Criteria Present

- Different strategies amongst experts and specialty societies but CDC recommends testing with RADT

Centers for Disease Control and Prevention. Adult Appropriate Antibiotic Use Summary. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/adult-approp-summary.html>

## Suspected GAS Pharyngitis



Swab the throat and test for GAS pharyngitis by rapid antigen detection test (RADT)<sup>1</sup>

In one large study, slightly < 60% of patients with 4 Centor criteria tested (+) for GAS<sup>2</sup>

1. Shulman ST, et al. *Clin Infect Dis*. 2012; 55:e86- e102.  
2. Fine AM, et al. *Arch Intern Med*. 2012; 172:847-852.

## GAS Pharyngitis: Diagnostic Testing for Adults

### Rapid antigen detection tests (RADT) of throat swab for GAS

Test

Sensitivity 70-90%

Specificity 95%

High negative predictive value

If (+) treat for GAS pharyngitis

If (-) do not treat

## GAS Pharyngitis: Culture of Throat Swab?



Routine use of back-up throat culture (if RADT is negative)

Not usually necessary in adults

Low incidence of GAS pharyngitis in adults

Extremely low risk of subsequent acute rheumatic fever

Shulman ST, et al. *Clin Infect Dis*. 2012 Nov 15;55(10):e86-102.

## GAS Pharyngitis: Culture of Throat Swab?



Clinicians who wish to ensure maximal sensitivity in diagnosis may continue to use conventional throat culture or to back up negative RADTs with a culture:

- Immunocompromised hosts
- Investigation of outbreak of GAS disease
- Other pathogens are being considered (i.e., *Neisseria gonorrhoeae*)

Shulman ST, et al. *Clin Infect Dis*. 2012 Nov 15;55(10):e86-102.

## GAS Pharyngitis: Treatment



### Amoxicillin or Penicillin (oral)

- 10 day course
- Intramuscular benzathine penicillin G for patients unable to be adherent with oral course of therapy

### For Penicillin-Allergic Patients

- Oral first generation cephalosporin [if allergy not IgE-mediated anaphylactic reaction] (10 days)
- Clindamycin (10 days)
- Azithromycin (5 days)
- Clarithromycin (10 days)

Shulman ST, et al. *Clin Infect Dis*. 2012 Nov 15;55(10):e86-102.

## GAS Pharyngitis: Treatment

### NOT Recommended

- Tetracycline/doxycycline
- Sulfonamides (including trimethoprim-sulfamethoxazole)
- Fluoroquinolones
  - Ciprofloxacin not effective
  - Levofloxacin and moxifloxacin are effective but too broad-spectrum and costly



Shulman ST, et al. *Clin Infect Dis*. 2012 Nov 15;55(10):e86-102.

### Case 3

45-year-old man comes to the office with four days of nasal discharge and cough, requesting antibiotics for sinusitis.



*What is the optimal management approach for his sinus infection?*

1. Obtain a sinus CT scan; treat if abnormal
2. Tell him to come back if his symptoms persist for >10 days or get worse
3. Amoxicillin 500 mg orally 3 X/day for 10 days
4. Azithromycin 500 mg PO once, then 250 mg once daily for 4 days

## Acute Rhinosinusitis

- About 1 out of 8 adults (12%) in 2012 reported receiving a diagnosis of rhinosinusitis in the previous 12 months, resulting in more than 30 million diagnoses
- 90–98% of rhinosinusitis cases are viral, and antibiotics are not guaranteed to help even if the causative agent is bacterial.

www.CDC.gov/Get Smart.

## Acute Bacterial Rhinosinusitis (ABRS): Diagnosis Based on Clinical Criteria

Presence of one of the following :

Persistent symptoms or signs compatible with acute rhinosinusitis lasting for >10 days without any evidence of clinical improvement

or

Onset with severe symptoms or signs of high fever (>102 F) and purulent nasal discharge or facial pain lasting for at least 3–4 consecutive days at the beginning of illness

or

Onset with worsening symptoms or signs characterized by new onset of fever, headache, or increase in nasal discharge following a typical viral URI that lasted 5–6 days and were initially improving (ie, “double-sickening”)

URI = upper respiratory infection

Chow AW, et al. IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults. *Clin Inf Dis*. 2012;54(8):e72–112.

## Is Imaging Helpful?

- 31 patients with “colds” for 48-96 hours
  - 87% had abnormalities of maxillary sinus
- After two weeks, CT repeated in 14 patients
  - 79% showed clearing or marked improvement

At beginning of illness

Two weeks later without treatment



Gwaltney JM, et al. *N Engl J Med*. 1994;330:25-30.

## Treatment of ABRS

- Amoxicillin/clavulanate is the recommended first-line therapy of bacterial sinusitis
  - no longer amoxicillin due to resistance
  - high dose (2gm orally bid) if high risk of resistance
- Macrolides such as azithromycin are not recommended due to high levels of *S. pneumoniae* resistance (~40%).
- For penicillin-allergic patients, doxycycline or a respiratory fluoroquinolone (levofloxacin or moxifloxacin) are recommended as alternative agents.

Chow AW, et al. IDSA Clinical Practice Guideline for Acute Bacterial Rhinosinusitis in Children and Adults. *Clin Inf Dis*. 2012;54(8):e72–112.

## Summary – Antibiotics for Acute Respiratory Infections

**High-Value Care Advice 1:** Clinicians should not perform testing or initiate antibiotic therapy in patients with bronchitis unless pneumonia is suspected.

**High-Value Care Advice 2:** Clinicians should test patients with symptoms suggestive of group A streptococcal pharyngitis (eg, persistent fevers, anterior cervical adenitis, and tonsillopharyngeal exudates or other appropriate combination of symptoms) by rapid antigen detection test and/or culture for GAS. Clinicians should treat patients with antibiotics only if they have confirmed streptococcal pharyngitis.

**High-Value Care Advice 3:** Clinicians should reserve antibiotic treatment for acute rhinosinusitis for patients with persistent symptoms, onset of severe symptoms or signs of high fever (>39 °C) and purulent nasal discharge or facial pain lasting for at least 3 consecutive days, or onset of worsening symptoms .

**High-Value Care Advice 4:** Clinicians should not prescribe antibiotics for patients with the common cold.

Harris A et al. *Ann Intern Med*. Published online 19 January 2016 .

## Updates in STD Diagnosis and Management

### Sexually Transmitted Diseases Treatment Guidelines, 2015

#### Case 4:

A 25-year-old woman presents with vaginal discharge. She is sexually active with 2 male partners and uses oral contraception for birth control. On exam you find whitish vaginal discharge.

You diagnose gonorrhea infection. What is the most appropriate management?

1. Treat and return to clinic for retesting at 3 months
2. Treat and do a test of cure at 2 weeks
3. Treat and RTC only if recurrent symptoms
4. Treat and do a test of cure at 2 weeks and then retest annually



#### Urgent Threats:

1. *Clostridium difficile*
2. Carbapenem-resistant Enterobacteriaceae
3. Drug-resistant *Neisseria gonorrhoeae*

Centers for Disease Control and Prevention (CDC). Antibiotic resistance threats in the United States, 2013. Atlanta: CDC; 2013. <http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf>

### Gonorrhea (*Neisseria gonorrhoeae*)

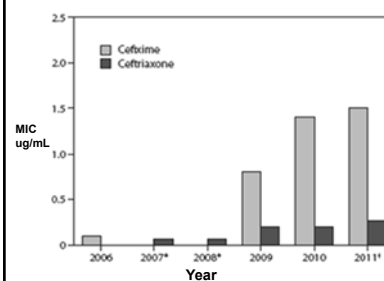
- Asymptomatic in 50% women, 10% men
  - cervicitis, epididymitis, urethritis, or proctitis; also PID
- If untreated → infertility, ↑risk ectopic pregnancy & HIV
- Co-pathogen with Chlamydia in up to 45% cases

#### Diagnosis

- Preferred method is nucleic acid amplification (NAATS)
  - Can perform on urine or on swab
  - NAAT for GC and chlamydia are done together; and may warrant screen for syphilis and HIV
- In men, can do a gram stain of urethral discharge
- Culture if treatment failure (for susceptibility) or if extra-genital disease

Mayor et al Am Fam Physician. 2012;86(10):931-938.; Cook et al Ann Intern Med. 2005 ;142(11):914-25.

### Gonorrhea – Treatment Update



➤ Antibiotic resistance is a major problem

➤ The approach to therapy is a moving target

Urethral *N gonorrhoeae* isolates with cefixime MIC≥0.25 ug/mL and ceftriaxone MIC≥0.125 ug/mL

MMWR / August 10, 2012 / Vol. 61 / No. 31; Kirikaly et al Ann Intern Med. 5 March 2013;158(5 Part 1):321-328

## Gonorrhea Treatment

Uncomplicated Genital, Rectal,  
or Pharyngeal Infections

Ceftriaxone 250 mg IM **PLUS\*** Azithromycin  
in a single dose 1 g orally

\* Regardless of CT test result

*Doxycycline demoted from recommended to alternative,  
because of tetracycline resistance in U.S. GISP isolates*

CDC 2015 STD Treatment Guidelines  
[www.cdc.gov/std/treatment](http://www.cdc.gov/std/treatment)

## Gonorrhea Treatment Alternatives

**IF CEFTRIAXONE UNAVAILABLE**  
❖ Cefixime 400 mg orally once **plus** azithromycin 1 g

**IN CASE OF ALLERGY TO PENICILLIN:**  
❖ Gemifloxacin 320 mg orally once **plus** azithromycin 2 g

OR

❖ Gentamicin 240 mg IM **plus** azithromycin 2 g

**IN CASE OF ALLERGY TO AZITHROMYCIN:**  
❖ Cefixime 400 mg orally once **plus** doxycycline 100 mg BID x 7d

→ Single Dose **Azithromycin 2 g orally removed as an  
alternative regimen**

## Gonorrhea – Test of Cure

Prior TOC recommendation: Test of cure in 1 week if alternative regimen used

New TOC recommendations:

- Limit TOC only to pharyngeal GC not treated with recommended regimen
- Perform TOC at 14 days with either NAAT\* or culture

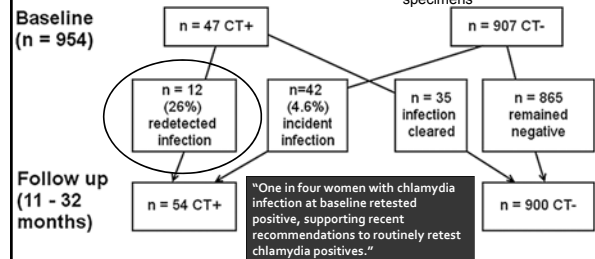
\*Not FDA-approved for extragenital testing, but has been validated.

CDC 2015 STD Treatment Guidelines  
[www.cdc.gov/std/treatment](http://www.cdc.gov/std/treatment)

Frequency and risk factors for incident and  
redetected *Chlamydia trachomatis* infection  
in sexually active, young, multi-ethnic women:  
a community based cohort study

Adamma Aghaizu,<sup>1,2</sup> Fiona Reid,<sup>1</sup> Sally Kerry,<sup>3</sup> Phillip E Hay,<sup>4</sup> Harry Mallinson,<sup>5</sup>  
Jorgen S Jensen,<sup>6</sup> Sarah Kerry,<sup>7</sup> Sheila Kerry,<sup>7</sup> Pippa Oakeshott<sup>1</sup>

Sexually active female  
students 15-27 years old,  
enrolled in the British  
Prevention of Pelvic  
Infection (POPI) trial  
between 2004-06, who self-  
collected 2 vaginal swab  
specimens



Aghaizu A et al. *STI* 2014

## Repeat Screening after an STD infection

- Women with CT, GC or trichomonas should be rescreened at 3 months after treatment.
- Men with CT or GC should be rescreened at 3 months after treatment.
- Patients diagnosed with syphilis should undergo follow up serologic serology per current recommendations.
- HIV testing should also be considered in all patients with a prior STD history

## Updated Guidelines for Skin and Soft Tissue Infections

## Case 5

30 yo female presents with scraped knee acquired while playing outdoor tennis

- Area was cleaned and bandaged, but now, 3 days later, is inflamed and tender to the touch
- No abscess, systemic signs, or other symptoms  
Otherwise healthy

What is the diagnosis?

Does she need antibiotics?

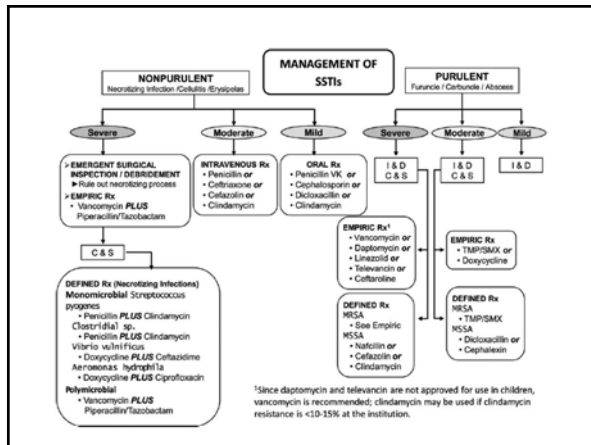
If so, do you need to cover MRSA?

## Practice Guidelines for the Diagnosis and Management of Skin and Soft Tissue Infections: 2014 Update by the Infectious Diseases Society of America

Dennis L. Stevens,<sup>1</sup> Alan L. Bisno,<sup>2</sup> Henry F. Chambers,<sup>3</sup> E. Patchen Dellinger,<sup>4</sup> Ellie J. C. Goldstein,<sup>5</sup> Sherwood L. Gorbach,<sup>6</sup> Jan V. Hirschmann,<sup>7</sup> Sheldon L. Kaplan,<sup>8</sup> Jose G. Montoya,<sup>9</sup> and James C. Wade<sup>10</sup>

<sup>1</sup>Division of Infectious Diseases, Department of Veterans Affairs, Boise, Idaho; <sup>2</sup>Medical Service, Miami Veterans Affairs Health Care System, Florida; <sup>3</sup>San Francisco General Hospital, University of California; <sup>4</sup>Division of General Surgery, University of Washington, Seattle; <sup>5</sup>University of California, Los Angeles, School of Medicine; and R.M. Allen Research Laboratory, Santa Monica, California; <sup>6</sup>Department of Community Health, Tufts University, Boston, Massachusetts; <sup>7</sup>Medical Service, Puget Sound Veterans Affairs Medical Center, Seattle, Washington; <sup>8</sup>Department of Pediatrics, Baylor College of Medicine, Houston, Texas; <sup>9</sup>Department of Medicine, Stanford University, California; and <sup>10</sup>Geisinger Health System, Geisinger Cancer Institute, Danville, Pennsylvania

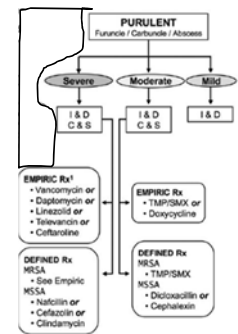
Stevens D, et al. IDSA Practice Guidelines for SSTI. *Clin Infect Dis.* 2014.



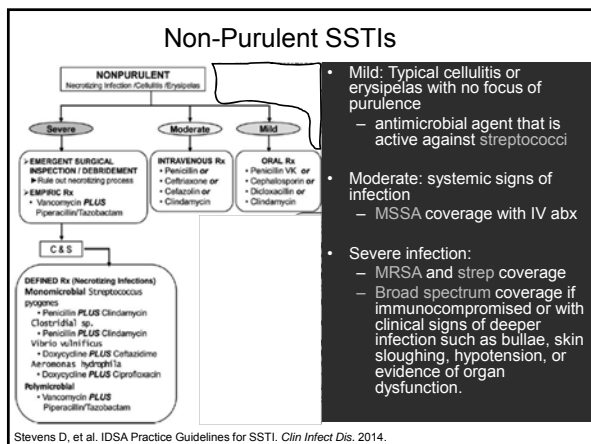
## Purulent SSTIs

Cutaneous abscesses, furuncles, carbuncles, inflamed epidermoid cysts

- I&D is the recommended treatment (strong, high).
- Antibiotics directed against MRSA as an adjunct to I&D if
  - Severe (presence of SIRS, temperature >38°C or <36°C, tachypnea, tachycardia, or WBC >12) or moderate (systemic signs of infection)
  - failed initial antibiotic treatment
  - markedly impaired host defenses



Stevens D, et al. IDSA Practice Guidelines for SSTI. *Clin Infect Dis.* 2014.



Stevens D, et al. IDSA Practice Guidelines for SSTI. *Clin Infect Dis.* 2014.

## Highlights from SSTI Update

- With appropriate incision and drainage, skin abscesses often heal
  - Avoid antibiotic use in mild purulent SSTI
  - Cover MRSA if moderate or severe infection
- Ensure streptococcal coverage for nonpurulent cellulitis
- Cover MRSA and streptococci if cellulitis associated with:
  - penetrating trauma
  - evidence of MRSA infection elsewhere,
  - nasal colonization with MRSA,
  - injection drug use,
  - SIRS (severe nonpurulent)

Stevens D, et al. IDSA Practice Guidelines for SSTI. *Clin Infect Dis.* 2014.



## A new twist .....

THE NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

### Trimethoprim–Sulfamethoxazole versus Placebo for Uncomplicated Skin Abscess

David A. Talan, M.D., William R. Mower, M.D., Ph.D.,  
Anusha Krishnadasan, Ph.D., Fredrick M. Abrahamian, D.O.,  
Frank Lovecchio, D.O., M.P.H., David J. Karras, M.D., Mark T. Steele, M.D.,  
Richard E. Rothman, M.D., Ph.D., Rebecca Hoagland, M.S.,  
and Gregory J. Moran, M.D.

*New Engl J Med.* March 3 2016

## Antibiotics after abscess drainage

- 1270 patients presenting to the ER with an abscess at least 2cm in diameter, drained, and randomized to 2 DS tabs TS bid vs placebo

Table 3. Cure Rates among Patients with a Drained Cutaneous Abscess in Three Trial Populations.\*

Trial Population	Cure of Abscess		Difference (95% CI)	P Value†
	Trimethoprim–Sulfamethoxazole no./total no. (%)	Placebo no./total no. (%)		
Modified intention-to-treat †	507/630 (80.5)	454/617 (73.6)	6.9 (2.1 to 11.7)	0.005
Per-protocol‡	487/524 (92.9)	457/533 (85.7)	7.2 (3.2 to 11.2)	<0.001
FDAGEEP	218/601 (36.3)	204/605 (33.7)	2.6 (–3.0 to 8.1)	0.38

Talan, et al. *New Engl J Med* March 2016

## Bottom Line ....

- If little concern about MRSA infection, the addition of antibiotics to incision and drainage is unnecessary
- Awareness of the prevalence of MRSA in the specific setting and in the community where one practices is important
- Clinical judgement must always prevail

Talan, et al. *New Engl J Med* March 2016; Wilbur MB, Daum RS, Gold HS. Skin abscess. *N Engl J Med* 2016;374:882-4.