

National Pharmacy Council
Antibiotic Stewardship Program



Ambulatory Care

Disclaimer:

The following guidelines have been developed and adapted from various clinical practice guidelines from reputable professional organizations. These guidelines have been developed using evidence based medicine and are not intended to replace clinical judgment. The treatment medications are not listed in order of preference, and therapeutic decisions should be based on a number of factors including patient history, comorbidities, suspected etiology, antimicrobial susceptibility patterns, and cost. In certain populations (e.g., intravenous drug abusers, immunosuppressed, travelers), the suspected organisms may include a broader range of organisms.

Contents

Dental Infections:.....	4
Dental caries	4
Simple gingivitis	4
Necrotizing gingivitis.....	4
Odontogenic infections Mild/Early infection.....	4
Antibiotic Prophylaxis prior to Procedure	5
Helicobacter pylori.....	7
Lyme Disease.....	8
Sexually Transmitted Diseases.....	11
Bacterial Vaginosis	11
Cervicitis.....	12
Chlamydia	12
Gonorrhea.....	13
Herpes Simplex Virus (HSV), Genital.....	15
Genital Herpes in Patients with HIV infection	16
Nongonococcal Urethritis	16
Pelvic Inflammatory Disease.....	17
Syphilis: Primary or secondary infection.....	18
Trichomoniasis	20
Skin Infections:.....	21
General Culture Information:	21
Impetigo	22
Cellulitis.....	23
Diabetic Foot Infection.....	24

Dog or Cat Bite	25
Rabies.....	26
Human Bite	28
Tuberculosis	29
Latent Tuberculosis Infection (LTBI)	29
Treatment of TB disease:	30
Upper Respiratory Tract Infections.....	33
Bronchitis	33
Rhinosinusitis	33
URI, unspecified	34
Pharyngitis	34
Croup.....	37
Otitis Media.....	39
Urinary Tract Infections	43
Asymptomatic bacteriuria (ASB).....	43
Uncomplicated Cystitis (women).....	43
Pyelonephritis (women).....	44
Pediatric UTI.....	45

Dental Infections:

Early diagnosed infections tend to be aerobic gram positive in nature. As the infection progresses, anaerobic bacteria become more prevalent. Beta-lactamase producing bacteria is also a concern, and therapy may need to be adjusted to cover these bacteria if initially unsuccessful.

Odontogenic infections progress in a three-stage manner: inoculation, cellulitis, then abscess. Prescribing of antibiotics without directly addressing cause of infection is not recommended. Surgical incision and drainage of any superficial abscess is imperative.

Treatment should last **7-10 days**. Diabetic patients may require longer therapy due to the delayed healing processes.

Please consult table below for antibiotic recommendations:

Indication	Clinical Features	Antimicrobial Therapy
Dental caries	Toothache, hot/cold sensitivity, low-grade fever, facial swelling	Systemic antibiotics usually not required
Simple gingivitis	Gum bleeding, inflammation	Antibiotics typically not required ; however, consider adding Chlorhexidine 0.12% oral rinse 15 mL swish & spit morning and evening
Necrotizing gingivitis	Gum bleeding, inflammation, acute pain, necrosis of gingival tissues, fever	<p><i>If not febrile:</i></p> <p>Antibiotics typically not required</p> <p><i>If febrile:</i></p> <p>Penicillin G 1-4 MU IV q 4-6 hours <u>OR</u> Ampicillin/sulbactam 1.5-3 g IV q 6 hours</p> <p><u>AND/OR</u></p> <p>Metronidazole 500 mg PO or IV q 8 hours</p> <p>All patients should also receive: Chlorhexidine 0.12% oral rinse 15 mL swish & spit morning and evening</p>
Odontogenic infections Mild/Early infection	Abscesses, erythema, tenderness of gums, symptoms < 3 days	<p>1st Line: Penicillin VK 500 mg PO q 6 hours <u>OR</u> Amoxicillin 500mg PO q 8 hours</p> <p><u>Penicillin allergy:</u></p> <p>Type I reaction: Clindamycin 300-450 mg PO q6h Non-type I reaction: Cephalexin 250-1000 mg PO q6h</p>

<u>Odontogenic infections</u> Unresponsive to mild treatment/Anaerobes or β -lactamase producing bacteria/Late infection	Abscesses, erythema and tenderness of gums, mild treatment ineffective, symptoms > 3 days**	Clindamycin 300-450 mg PO q 6 hours <u>OR</u> Amoxicillin/clavulanate 875/125 PO q12h <u>or</u> 500/125 PO q8h <u>OR</u> Penicillin VK 500 mg PO q 6 hours PLUS Metronidazole 500mg PO q 8 hours <u>Immunocompromised (ie uncontrolled DM, HIV, etc):</u> Penicillin VK 500 mg PO q 6 hours PLUS Metronidazole 500 mg PO q 8 hours
<u>Severe Odontogenic infections</u> Requiring hospitalization	Abscesses, erythema and tenderness of gums, mandibular pain and trismus	Penicillin G 2-4 MU IV q 4-6 hours PLUS metronidazole 0.5 g IV q 6 hours <u>OR</u> Ampicillin/sulbactam 2 g IV q 4 hours <u>Penicillin allergy:</u> Clindamycin 600 mg IV q 6 hours

Antibiotic Prophylaxis prior to Procedure:

Infective endocarditis is rare following a dental procedure, and proper prophylaxis only prevents a small number of infective endocarditis cases. Prophylaxis is recommended in patients at an increased risk of developing infective endocarditis. Examples of patients at an increased risk of developing infective endocarditis are as follows:

- Artificial heart valves
- A history of infective endocarditis
- Cardiac transplant that develops heart valve problems
- Patients with unrepaired or incompletely repaired congenital heart disease, or completely repaired congenital heart defects with prosthetic material

ADA and AAOS 2012 guideline recommends against prophylactic antibiotics prior to dental procedures in patients with hip or knee prosthetic joints. This is considered a limited recommendation.

Refer to table below for medication recommendations:

Situation	Agent	Regimen: Single Dose 30-60 min Before Procedure	
		Adults	Children
Oral	Amoxicillin	2 g	50 mg/kg
Unable to take oral medications	Ampicillin	2 g IM or IV	50 mg/kg IM or IV
	Cefazolin or Ceftriaxone	1 g IM or IV	50 mg/kg IM or IV
Allergic to penicillins or ampicillin - oral	Cephalexin	2 g	50 mg/kg
	Clindamycin	600 mg	20 mg/kg
	Azithromycin or Clarithromycin	500 mg	15 mg/kg
Allergic to penicillins or ampicillin and unable to take oral medications	Cefazolin or Ceftriaxone	1 g IM or IV	50 mg/kg IM or IV
	Clindamycin	600 mg IM or IV	20 mg/kg IM or IV

References:

1. Hull M, Chow A. An approach to oral infections and their management. *Current Infectious Disease Reports*. 2005;7:17-27
2. Gregorie C. How are odontogenic infections best managed?. *J Can Dent Assoc*. 2010;76:a37
3. Southerland J, Taylor G, Offenbacher S. Diabetes and periodontal infection: Making the connection. *Clin Diabetes*. 2005;23(4):171-8
4. Dar-Odeh NS, et. al. Antibiotic prescribing practices by dentists: a review. *Ther Clin Risk Manag*. 2010; 6:301-6.
5. Walton RE, Torabinejad M. Principles and Practice of Endodontics. Third Edition
6. Ngoyen DH, Martin JT. Common dental infections in the primary care setting. *Am Fam Physician*. 2008;77(6):797-802.
7. Wilson W, Taubert KA, Gewitz M, et. al. Prevention of infective endocarditis: Guidelines from the American Heart Association. *Circ*. 2007; 116:1736-54.
8. AAOS Clinical Practice Guideline Unit. *Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures: Evidence-Based Guideline and Evidence Report*. 2012.

Helicobacter pylori

In order to reduce symptoms and complications associated with *H. pylori* infection, it is important to achieve a high eradication rate.

Triple therapy regimens are often used as first-line treatment; however, resistance to clarithromycin and metronidazole is on the rise (rates up to 20% and 42%, respectively) and cure rates have fallen below 80% (the acceptable standard).

Therefore the choice of first line therapy should be based on local susceptibilities patterns.

- Sequential therapy: PPI PO BID + amoxicillin 1 gm PO BID x 5 days, followed by a PPI PO BID + clarithromycin 500mg PO BID + tinidazole 500mg PO BID for an additional 5 days. If concerned about clarithromycin resistance, substitute levofloxacin 500mg QD for the clarithromycin. If levofloxacin resistance is high at your facility, consider use of quadruple therapy below.

Alternative therapy:

- Quadruple therapy: PPI + bismuth 2 tablets (525 mg total) + metronidazole 250mg + tetracycline 500mg for 14 days – all dosed QID except the PPI is BID
 - Doxycycline can be considered as an alternative to tetracycline
- PPI + clarithromycin 500mg + amoxicillin 1 g (all dosed BID) for 10days

Treatment failure:

- **Salvage/retreatment:** PPI + (Levofloxacin 500mg QD or Moxifloxacin 250mg QD) + Amoxicillin 1 gm BID x 7-10 days

References:

1. Yaxley J, Chakravarty B. Helicobacter pylori eradication – an update on the latest therapies. Australian Fam Physician. 2014;43(5):301-305.
2. Sanford Guide (Web edition). Antimicrobial therapy. February 6, 2014.
3. O'Connor AO, Molina-Infant J, Gisbert JP, O'Morain CO. Treatment of Helicobacter pylori infection 2013. Helicobacter. 2013;18(suppl1):58-65.
4. Liou J, Chen D, Chen M, et al. Lancet. 2013;381:205-213.
5. Morgan DR, Torres J, Sexton R, et al. Risk of recurrent Helicobacter pylori infection 1 year after initial eradication therapy in 7 Latin American communities. JAMA. 2013;309(6):578-586

Lyme Disease

The most common tick-borne disease in the United States caused by the spirochete *Borrelia burgdorferi* and transmitted by the bite of *Ixodes scapularis* (deer tick). Prophylactic treatment may be indicated for some patients.

Prophylaxis

Criteria for antibiotic prophylaxis following a tick bite:

- Tick is identified as an adult or nymphal *Ixodes scapularis* tick (deer tick)
- Tick has been attached for approximately ≥ 36 hours (by engorgement or time of exposure)
- Prophylaxis is begun within 72 hours after tick has been removed
- Local rate of infection with *B. burgdorferi* is $\geq 20\%$
- There are no contraindications to doxycycline

If the patient meets **ALL** the criteria for prophylaxis:

- Adults: Doxycycline 200 mg PO given once for adults
- Children 8 years and older: Doxycycline 4 mg/kg (max of 200 mg)

Early Disease (erythema migrans)-occurs a few days to one month from a deer tick bite

Treatment Options for Adults:

- Doxycycline 100 mg PO BID x 10-21 days
or
- Amoxicillin 500 mg PO TID x 14-21 days
or
- Cefuroxime Axetil 500 mg PO BID x 14-21 days

Generally a 14 day course is considered adequate in patients with mild to moderate symptoms

*Please note other alternatives are available but are less effective

Early Disseminated Disease (cardiac and neurologic manifestations)-weeks to months after tick bite

Isolated Facial Nerve Palsy:

- Doxycycline 100 mg PO BID x 14-28 days

Acute neurologic manifestations of Lyme disease (with the exception of isolated facial palsy) are usually treated with IV antibiotics:

- Ceftriaxone: 2 g intravenously once daily x 10-28 days
or
- Cefotaxime : 2 g intravenously every eight hours x 14-28 days
or
- Penicillin G (in adults: 18 to 24 million units per day intravenously divided into 6 daily doses x 14-28 days

Cardiac Involvement (asymptomatic patients)*:

- Doxycycline 100 mg PO BID x 10-21 days
or
- Amoxicillin 500 mg PO TID x 14-21 days
or
- Cefuroxime Axetil 500 mg PO BID x 14-21 days

*generally patients with cardiac involvement who are symptomatic are hospitalized and given IV therapy

Late Disease

Arthritis without neurologic disease:

- Doxycycline 100 mg PO BID x 28 days
or
- Amoxicillin 500 mg PO TID x 28 days

Arthritis with neurologic disease:

- Ceftriaxone: 2 g intravenously once daily x 28 days
or
- Cefotaxime : 2 g intravenously every eight hours x 14-28 days

Recurrent Arthritis (despite adequate prior oral therapy):

- Doxycycline 100 mg PO BID x 28 days
or

- Amoxicillin 500 mg PO TID x 28 days
or
- Ceftriaxone: 2 g intravenously once daily x 14-28 days

Reference

1. Wormser, GP, Dattwyer, RJ, Shapiro, ED, et al. The Clinical Assessment, Treatment, and Prevention of Lyme Disease, Human Granulocytic Anaplasmosis, and Babesiosis: Clinical Practice Guidelines by the Infectious Disease Society of America. *Clin Infect Dis* 2006;43:1089.

Sexually Transmitted Diseases

These recommendations closely follow the Morbidity and Mortality Weekly Report (MMWR). Sexually transmitted disease treatment guidelines, 2010. Centers for Disease Control and Prevention Web site. <http://www.cdc.gov.ezproxyhhs.nihlibrary.nih.gov/mmwr/preview/mmwrhtml/rr5912a1.htm>.

Accessed August 8, 2014

Bacterial Vaginosis

Recommended regimens:

- Metronidazole 500mg PO BID x 7 days*
OR
- Metronidazole gel 0.75%, one full applicator (5g) intravaginally, once a day for 5 days
OR
- Clindamycin cream 2%, one full applicator (5g) intravaginally at bedtime x 7 days[‡]

Alternative regimens:

- Tinidazole 2g PO once daily x 3 days*
OR
- Tinidazole 1g PO once daily x 5 days*
OR
- Clindamycin 300mg PO BID x 7 days
OR
- Clindamycin ovules 100mg intravaginally once at bedtime x 3 days

Recommended regimens for pregnant women:

- Metronidazole 500mg PO BID x 7 days*
OR
- Metronidazole 250mg PO TID x 7 days*
OR
- Clindamycin 300mg PO BID x 7 days

*consuming alcohol should be avoided during treatment with metronidazole or tinidazole. Alcohol abstinence should continue for 24 hours after use of metronidazole and for 72 hours after use of tinidazole.

[‡]clindamycin cream is oil-based and might weaken latex condoms and diaphragms for 5 days after use.

Cervicitis

Recommended Regimens for Presumptive Treatment*:

- Azithromycin 1 g PO in a single dose
OR
- Doxycycline 100mg PO BID x 7 days

*Consider concurrent treatment for gonococcal infection if prevalence of gonorrhea is high in the patient population under assessment

Recurrent or persistent cervicitis:

The patients should be reevaluated for possible re-exposure to an STD.

Management of sexual partners of women treated for cervicitis should be appropriate for the identified or suspected STD.

Chlamydia

Recommended regimens:

Non-pregnant patients:

- Azithromycin 1 g PO as a single dose (direct observed therapy is recommended)
OR
- Doxycycline 100mg PO BID x 7 days

Alternative regimens for use in the setting of true allergy to first line therapy options:

- Erythromycin base 500mg PO QID x 7 days
OR
- Erythromycin ethylsuccinate 800mg PO QID x 7 days
OR
- Levofloxacin 500mg PO QD x 7 days
OR
- Ofloxacin 300mg PO BID x 7days

Pregnant patients:

- Azithromycin 1 g PO as a single dose (direct observed therapy is recommended)
OR
- Amoxicillin 500mg PO TID x 7 days

Alternative regimens for pregnant patients:

- Erythromycin base 500mg PO QID x 7 days
OR
- Erythromycin base 250mg PO QID x 14 days
OR
- Erythromycin ethylsuccinate 800mg PO QID x 7 days
OR
- Erythromycin ethylsuccinate 400mg PO QID x 14 days

Expedited Partner Therapy (EPT):

All sexual partners from the last 60 days should be referred for evaluation, testing, and treatment. If the patient's partner is not likely to seek evaluation, testing, and treatment, patient delivery of antibiotic therapy to their partners can be considered. The patient must inform their partners of their infection and provide them with written materials about the importance of seeking evaluation for any symptoms suggestive of complications. Patient delivered partner therapy is not routinely recommended for men having sex with men (MSM) due to the high risk for coexisting infections, especially undiagnosed HIV, in their partners.

The recommended regimen is:

- Azithromycin 1 g PO as a single dose (direct observed therapy is recommended)
OR
- Doxycycline 100mg PO BID x 7 days

Gonorrhea

Uncomplicated urogenital, anorectal, and pharyngeal gonorrhea:

- Ceftriaxone 250mg IM as a single dose*
PLUS, EITHER
- Azithromycin 1 g PO as a single dose
OR
- Doxycycline 100mg PO BID x 7 days

Alternative regimens are listed below: - if used, **patient should return one week after treatment for a test-of-cure at the infected anatomic site.** If treatment failure occurs with alternative regimen, the patient should be treated with ceftriaxone 250mg IM as a single dose PLUS azithromycin 2g PO as a single dose and should receive infectious disease consultation and reported to the CDC through the local or state health department.

If ceftriaxone is not available:

- Cefixime 400mg PO as a single dose
PLUS, EITHER
- Azithromycin 1 g PO as a single dose
OR
- Doxycycline 100mg PO BID x 7days

If patient has severe cephalosporin allergy:

- Azithromycin 2 g PO as a single dose

*Fluoroquinolones and oral cephalosporins are no longer recommended due to resistance patterns.

Treatment failure: culture relevant clinical specimens and perform antimicrobial susceptibility test of *N. gonorrhoeae* isolates. The provider should seek treatment advice from an infectious disease specialist and report the case to the CDC through the local or state health department within 24 hours of diagnosis. A test-of-cure should be conducted 1 week after re-treatment, and clinicians should ensure that the patient's sex partners from the preceding 60 days are evaluated promptly with culture and treated as indicated.

Expedited Partner Therapy (EPT):

Due to resistance patterns for oral cephalosporin agents in the treatment of gonorrhea, every effort should be made to ensure that a patient's sex partners from the past 60 days are evaluated and treated with a recommended regimen:

- Ceftriaxone 250mg IM as a single dose*
PLUS, EITHER
- Azithromycin 1 g PO as a single dose
OR
- Doxycycline 100mg PO BID x 7 days

However, because that is not always possible, provider can still consider EPT with the recommendation that the partner receive a **test-of-cure approximately one week after finishing their medication**. If the patient's partner is not likely to seek evaluation, testing, and treatment, patient delivery of antibiotic therapy to their partners can be considered. The patient must inform their partners of their infection and provide them with written materials about the importance of seeking evaluation for any symptoms suggestive of complications. Patient delivered partner therapy is not routinely recommended for men having sex with men (MSM) due to the high risk for coexisting infections, especially undiagnosed HIV, in their partners.

The oral regimen is:

- Cefixime 400mg PO as a single dose
PLUS, EITHER
- Azithromycin 1 g PO as a single dose
OR
- Doxycycline 100mg PO BID x 7days

Additional Reference:

Guidance on the use of expedited partner therapy in the treatment of gonorrhea. Centers for Disease Control Web site. <http://www.cdc.gov/std/ept/GC-Guidance.htm> . Accessed 8/19/14.

Herpes Simplex Virus (HSV), Genital

First Clinical Episode:

Treatment can be extended if healing is incomplete after 10 days of therapy.

- Acyclovir 400mg PO TID for 7-10 days
OR
- Acyclovir 200mg PO 5 times daily for 7-10 days
OR
- Famciclovir 250mg PO TID for 7-10 days
OR
- Valacyclovir 1 g PO BID for 7-10 days

Suppressive therapy:

Valacyclovir dosed at 500mg/day might be less effective than other dosing regimens in patients who have 10 or more episodes a year.

- Acyclovir 400mg PO BID
OR
- Famciclovir 250mg PO BID
OR
- Valacyclovir 500mg PO QD
OR
- Valacyclovir 1gm PO QD

Episodic Therapy for Recurrent Genital Herpes:

Effective episodic treatment of recurrent herpes requires initiation of therapy within 1 day of lesion onset or during the prodrome that precedes some outbreaks. The patient should be provided with a supply of drug or a prescription for the medication with instructions to initiate therapy immediately when symptoms begin.

- Acyclovir 400mg PO TID x 5 days
OR
- Acyclovir 800mg PO BID x 5 days
OR
- Acyclovir 800mg PO TID x 2 days
OR
- Famciclovir 125mg PO BID x 5 days
OR
- Famciclovir 1000mg PO BID x 1 day
OR
- Famciclovir 500mg PO once, followed by 250mg BID x 2 days
OR
- Valacyclovir 500mg PO BID x 3 days
OR
- Valacyclovir 1 g PO QD x 5 days

IV acyclovir should be provided for severe HSV disease or complications that necessitate hospitalization (e.g., disseminated infection, pneumonitis, or hepatitis) or CNS complication (e.g., meningoencephalitis).

The recommended regimen is acyclovir 5-10mg/kg IV q8hr for 2-7 days or until clinical improvement is observed, followed by oral antiviral therapy to complete at least 10 days of total therapy.

Genital Herpes in Patients with HIV infection

Immunocompromised patients can have prolonged or severe episodes of genital, perianal, or oral herpes.

Suppressive Therapy:

- Acyclovir 400-800mg PO 2-3 times a day
OR
- Famciclovir 500mg PO BID
OR
- Valacyclovir 500mg PO BID

Episodic Therapy:

- Acyclovir 400mg PO TID for 5-10 days
OR
- Famciclovir 500mg PO BID for 5-10 days
OR
- Valacyclovir 1 g O BID for 5-10 days

For severe HSV disease, initiating therapy with acyclovir 5-10mg/kg IV q8h might be necessary.

In cases of resistance, foscarnet, 40 mg/kg VI q8h until clinical resolution is attained. IV cidofovir 5mg/kg once weekly might also be effective.

Nongonococcal Urethritis

Test for gonorrhea and chlamydia also

Recommended regimens:

- Azithromycin 1 g PO as a single dose (preferred therapy for *M. genitalium*)
OR
- Doxycycline 100mg PO BID x 7 days

Alternative regimens:

- Erythromycin base 500mg PO QID x 7 days
OR
- Erythromycin ethylsuccinate 800mg PO QID x 7 days
OR
- Levofloxacin 500mg PO qd x 7 days
OR
- Ofloxacin 300mg PO BID x 7 days

All sex partners within the preceding 60 days should be referred for evaluation, testing, and empiric treatment with a drug regimen effective against chlamydia.

Recurrent or persistent Urethritis

Patients with persistent or recurrent urethritis can be retreated with the initial regimen if they did not comply with the treatment regimen or if they were re-exposed to an untreated sex partner. Persistent urethritis after doxycycline treatment might be caused by doxycycline-resistant *U. urealyticum* or *M. genitalium*.

Recommended regimens:

- Metronidazole 2 g PO in a single dose
OR
- Tinidazole 2g PO in a single dose PLUS azithromycin 1 g PO in a single dose (if not used for initial episode)

Pelvic Inflammatory Disease

Recommended Regimen:

- Ceftriaxone 250mg IM in a single dose
PLUS
 - Doxycycline 100mg PO BID x 14 days
WITH or WITHOUT
 - Metronidazole 500mg PO BID x 14 days
- OR -
- Cefoxitin 2 g IM in a single dose
PLUS
 - Probenecid 1g PO administered in a single dose concurrently with the cefoxitin
PLUS
 - Doxycycline 100mg PO BID x 14 days
PLUS
 - Metronidazole 500mg PO BID x 14 days

Alternative Regimen:

Ceftriaxone 250mg IM or IV in a single dose
Followed by Azithromycin 1g PO weekly x 2 weeks
And consider metronidazole 500mg PO BID x 14 days

Additional Reference:

Morbidity and Mortality Weekly Report (MMWR). Update to CDC's sexually transmitted diseases treatment guidelines, 2010: Oral cephalosporins no longer a recommended treatment for gonococcal infections. Centers for Disease Control and Prevention Web site.

<http://www.cdc.gov.ezproxyhhs.nihlibrary.nih.gov/mmwr/preview/mmwrhtml/mm6131a3.htm>.

Accessed August 8, 2014.

Syphilis: Primary or secondary infection

Primary infection – ulcer or chancre at the infection site

Secondary infection – manifestations that include, but are not limited to, skin rash, mucocutaneous lesions, and lymphadenopathy

Adults:

- Benzathine penicillin G (Bicillin L-A) 2.4 mu IM in a single dose

-Other formulations of penicillin (e.g., benzathine-procaine penicillin) are not effective

Retreatment, if initial therapy fails, includes weekly injections of benzathine penicillin G 2.4 million units IM for 3 weeks.

Penicillin-allergic, non-pregnant patients:

- Doxycycline 100mg PO BID x 14 days
OR
- Tetracycline 500mg PO QID x 14 days
OR, if treating early syphilis, other options include:
- Ceftriaxone 1 g IM/IV daily for 10-14 days
- Azithromycin 2g PO one-time dose (some resistance, use last line and do NOT use in MSM or pregnant women)

Penicillin-allergic, pregnant patients:

- Desensitize and treat with penicillin

Infants and children:

- Benzathine penicillin G 50,000 units/kg IM, up to the adult dose of 2.5 million units in a single dose

Tertiary Syphilis Infection – cardiac or gummatous lesions

Adults with no signs of neurosyphilis:

- Benzathine penicillin 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals.

Patients with penicillin allergy: seek consultation with infectious disease specialist

Pregnancy:

- Desensitize and treat with penicillin

Neurosyphilis:

Cranial nerve dysfunction, meningitis, stroke, acute or chronic altered mental status, loss of vibration sense, and auditory or ophthalmic abnormalities

- Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units IV q4h or continuous infusion, for 10-14 days.
OR
- Procaine penicillin 2.4 million units IM once daily for 10-14 days
PLUS
- Probenecid 500mg PO QID for 10-14 days

Benzathine penicillin 2.4 million units IM once per week for up to 3 weeks, can be considered after completion of these neurosyphilis treatment regimens to provide a comparable duration of therapy as that given in late syphilis in the absence of neurosyphilis.

Penicillin allergy alternative:

- Ceftriaxone 2 g daily either IM or IV for 10-14 days*

*If concern exists regarding the safety of ceftriaxone (risk of cross-reactivity) for a patient with neurosyphilis, skin tested should be performed to confirm penicillin allergy and, if necessary, desensitization in consultation with a specialist.

Pregnancy:

- Desensitize and treat with penicillin

Latent syphilis:

Seroreactivity without other evidence of disease

Early latent syphilis – acquired within the preceding year

Adults:

- Benzathine penicillin 2.4 million units IM in a single dose

Penicillin-allergic, non-pregnant patients:

- Doxycycline 100mg PO BID x 14 days
OR
- Tetracycline 500mg PO QID x 14 days
OR, if treating early syphilis, other options include:
- Ceftriaxone 1 g IM/IV daily for 10-14 days
- Azithromycin 2g PO one-time dose (some resistance, use last line and do NOT use in MSM or pregnant women)

Penicillin-allergic, pregnant patients:

- Desensitize and treat with penicillin

Children:

- Benzathine penicillin G 50,000 units/kg IM, up to the adult dose of 2.5 million units in a single dose

Late Latent syphilis or latent syphilis of unknown duration:

Adults:

- Benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals

Penicillin-allergic, non-pregnant patients:

- Doxycycline 100mg PO BID x 28 days
OR
- Tetracycline 500mg PO QID x 28 days

Penicillin-allergic, pregnant patients:

- Desensitize and treat with penicillin

Children:

- Benzathine penicillin G 50,000 units/kg IM, up to the adult dose of 2.4 million units, administered as 3 doses at 1-2week intervals

Trichomoniasis

Recommended regimens:

- Metronidazole 2g PO in a single dose
OR
- Tinidazole 2g PO in a single dose*

Alternative regimen:

- Metronidazole 500mg PO BID x 7 days*

Treatment failure with metronidazole 2g single dose:

- Metronidazole 500mg PO BID x 7 days

Treatment failure with metronidazole 500mg BID x 7days:

- Metronidazole OR tinidazole 2g PO QD x 5 days

*consuming alcohol should be avoided during treatment with metronidazole or tinidazole. Alcohol abstinence should continue for 24 hours after use of metronidazole and for 72 hours after use of tinidazole.

Skin Infections:

Skin and soft tissue infections (SSTIs) have extensive overprescribing of antibiotics active for Gram-negative species despite 97% of patients having positive cultures with *Streptococcus* or *S. aureus*¹⁰. The focus of these recommendations is the diagnosis and appropriate treatment of diverse SSTIs. Emphasis must be placed on the importance of clinical skills in promptly diagnosing SSTIs, identifying the pathogen, and administering effective treatments in a timely fashion.

Our recommendations closely follow the 2014 Infectious Disease Society of America's guidelines for Skin and Soft Tissue Infections, Diabetic Foot Infections and Infections Caused by Methicillin-Resistant *Staphylococcus Aureus*, all of which can be accessed at: <http://www.idsociety.org/>

General Culture Information:

1. Cultures should be collected prior to antibiotic initiation when possible
2. **Blood** should be sterile; any organism isolated should be considered pathogenic. However, there are some likely contaminants including:
 - a. Coagulase-negative staphylococci
 - b. Alpha-hemolytic streptococci
 - c. *Bacillus* spp.
 - d. *Corynebacterium* spp. (except *C. jeikeium*)
 - e. *Propionibacterium acnes***consider how cultures drawn vs. how many are positive and what the organism is
3. **Tissue and body fluids:** should be sterile; any organism isolated should be considered pathogenic. Judgment should be utilized in evaluation of what could possibly be normal flora present in the source of the specimen.

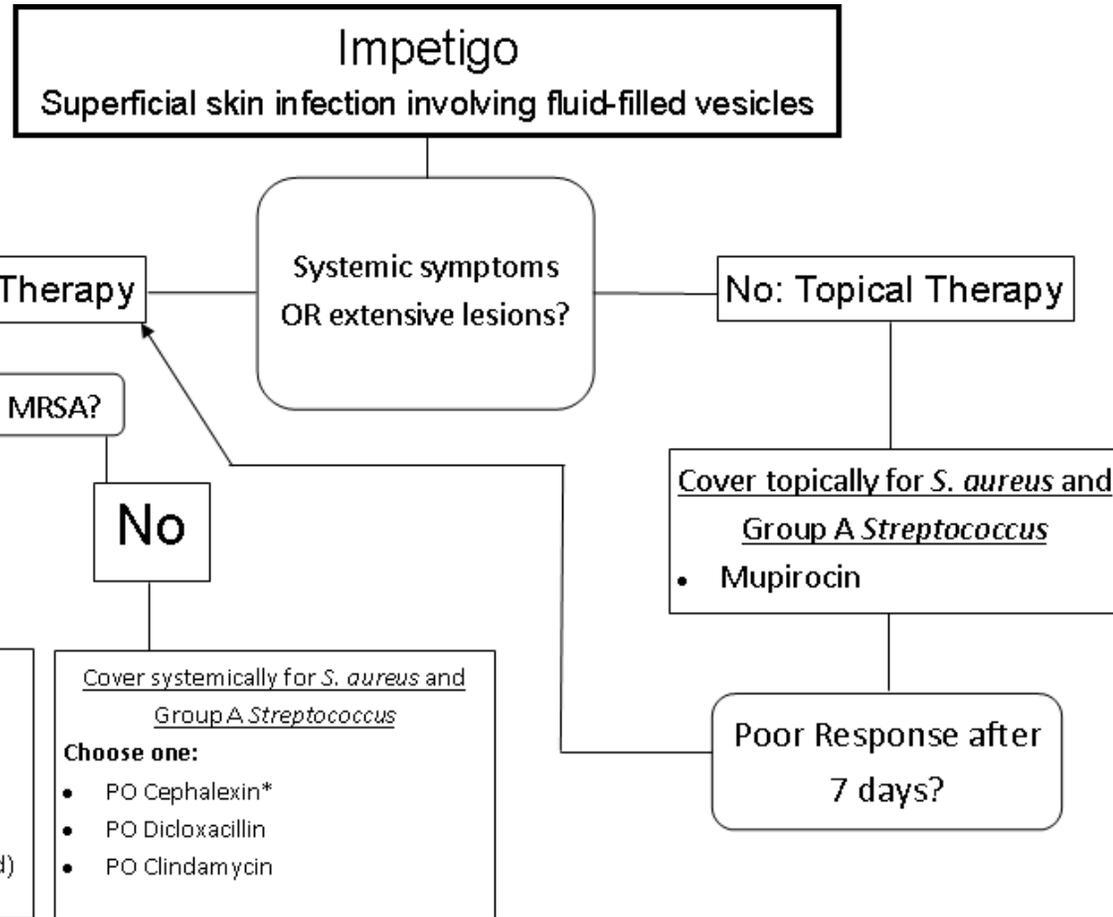
Normal flora of the eye/ear include:

- a. Coagulase-negative staphylococci
- b. Non-hemolytic streptococci
- c. Alpha-hemolytic streptococci
- d. Diphtheroids

Normal flora of the skin includes:

- a. Coagulase-negative staphylococci
- b. *Propionibacterium acnes*
- c. Alpha-hemolytic- streptococci
- d. Diphtheroids
- e. *Bacillus* spp.

Impetigo



* requires renal dosing

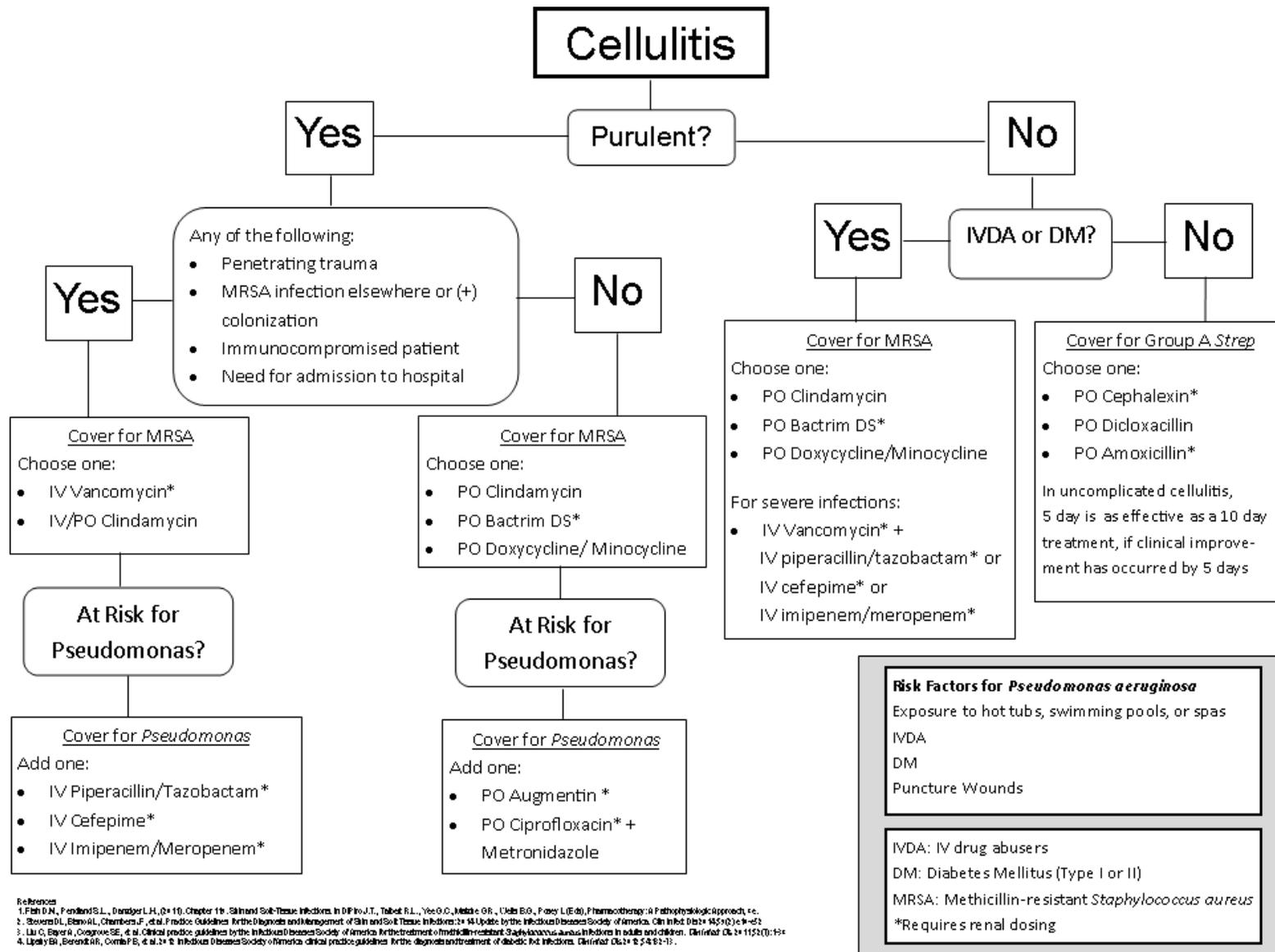
MRSA: Methicillin-resistant *Staphylococcus aureus*

Risk Factors:

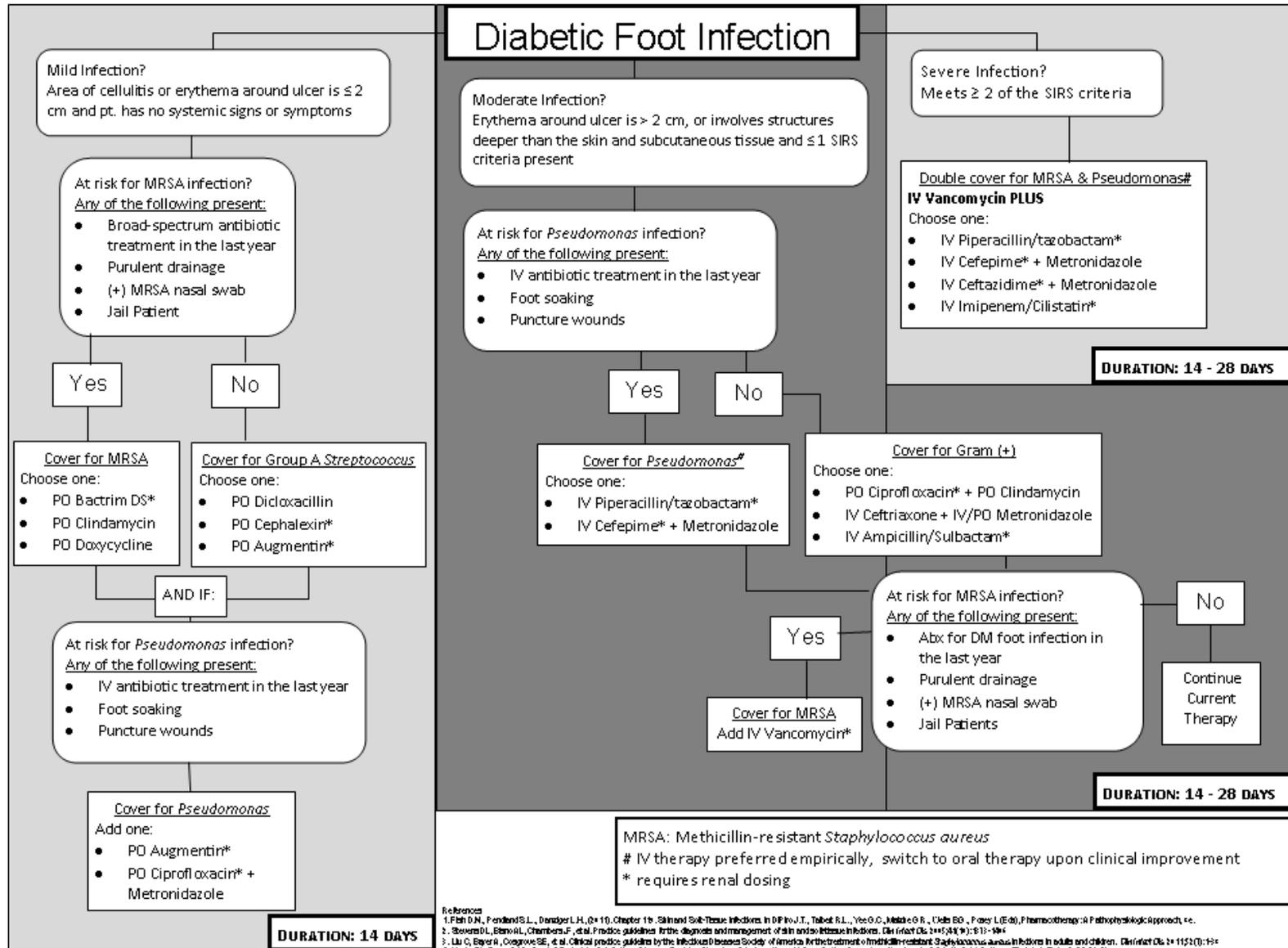
IV drug abusers	(+) MRSA nasal swab
Children in daycare	Boil, abscess, or "spider bite"
Homeless	Athletically active adolescents
Jail Patients	Immunocompromised pts.

Antibiotic Dosing		
	Adult	Pediatric
Clindamycin	300-450 mg PO QID	20 mg/kg/d in 3 divided doses PO
Bactrim	1 double strength tablet PO BID	8-12 mg/kg (based on trimethoprim component) in either 4 divided doses IV or 2 divided doses PO
Doxycycline	100 mg PO BID	Not recommended for age <8 yd
Cephalexin	500 mg PO QID	25-50 mg/kg/d 4 divided doses po
Dicloxacillin	250 mg PO QID	N/A

Cellulitis



Diabetic Foot Infection



Dog or Cat Bite

- An antimicrobial agents or agents active against both aerobic and anaerobic bacteria should be used.
- Purulent bite wounds and abscess are more likely to be polymicrobial (mixed aerobes and anaerobes), whereas nonpurulent wounds commonly yield staphylococci and streptococci, but may be polymicrobial.
- Tetanus toxoid should be administered to patients without toxoid vaccination within the last 10 years. Tdap is preferred over Td if Tdap has not been previously given.
- Primary wound closure is not recommended for wounds with the exception of those to the face which should undergo copious irrigation, cautious debridement, and preemptive antibiotics. Other wounds should be approximated.
- Postexposure prophylaxis for rabies may be indicated. Consult with local health official to determine if vaccination should be initiated. Also refer to rabies information in this document.

If patient presents with 12 to 24 hours of the bite and meets any of the following criteria:

- immunocompromised,
- asplenic,
- advanced liver disease,
- pre-existing or resultant edema of the affected area,
- moderate/severe injury especially to the hand or face or has injuries that may have penetrated the periosteum or joint capsule

Then give preemptive antibiotic therapy for 3-5 days. See therapy choices below.

If the patient presents greater than 24 hours from the bite AND the wound from the bite is infected, antimicrobial therapy is warranted.

First line therapy is :

- Amoxicillin/clavulanate 875mg/125mg PO BID*

For patients with Penicillin allergy, alternative regimens include:

- Cefuroxime 500mg PO bid + either Clindamycin 300mg PO TID
OR
- metronidazole 250-500mg TID*
OR
- Doxycycline 100mg PO BID
OR
- SMX-TMP 160-800mg (1 DS tablet) PO BID + either Clindamycin 300mg PO TID **OR**
metronidazole 250-500mg TID*
OR
- Moxifloxacin 400mg PO QD
OR
- Levofloxacin 750mg PO QD + either Clindamycin 300mg PO TID **OR** metronidazole 250-500mg
PO TID

*Preferred regimen in pregnancy.

Rabies

- Rabies is a vaccine-preventable viral disease which occurs in more than 150 countries and territories.
- 40% of people who are bitten by suspect rabid animals are children under 15 years of age.
- Bats are the source of most human rabies death in the Americas, Australia, and western Europe. Dogs are the source of infection in all human rabies deaths in Asia and Africa.
- Immediate wound cleansing and immunization within a few hours after contact with a suspect rabid animal can prevent the onset of rabies and death.

The incubation period for rabies is typically 1-3 months, but can be as short as <1 week to as long as over a year. Initial symptoms of rabies are fever and pain or an unusual or unexplained tingling, pricking or burning sensation (paresthesia) at the wound site. As the virus spreads through the central nervous system, progressive fatal inflammation of the brain and spinal cord develops.

There are 2 forms of the disease:

- Furious rabies exhibits signs of hyperactivity, excited behavior, hydrophobia and sometimes aerophobia with death in a few days from cardio-respiratory arrest.
- Paralytic rabies accounts for 3% of cases and is a less dramatic form of the disease. Muscles gradually become paralyzed, starting at the site of the scratch or bite. A coma develops, followed by death.

Diagnosis:

There are no tests available to detect rabies before the onset of disease and clinical diagnosis is difficult unless the signs of hydrophobia or aerophobia are present.

Risk is increased if:

- The biting mammal is a known rabies reservoir or vector species;
- The animal looks sick or has abnormal behavior;
- A wound or mucous membrane was contaminated by the animal's saliva;
- The bite was unprovoked; and
- The animal has not been vaccinated

Our recommendations closely follow the World Health Organization and Centers of Disease Control recommendations. These can be accessed at the following sites:

<http://www.who.int/mediacentre/factsheets/fs099/en/> and <http://www.cdc.gov/mmwr/pdf/rr/rr5902.pdf> . Accessed 10/30/14

Post-exposure Prophylaxis (see table below):

- Local treatment of the wound as soon as possible. Immediate and thorough flushing and washing of the wound is recommended for a minimum of 15 minutes with soap and water, detergent, povidone iodine or other substances to kill the virus.
- A 4-dose course of a potent rabies vaccine that meets WHO recommendations; and
- Administration of rabies immunoglobulin, if indicated.

Category of Contact with Suspected Rabid Animal	Post-exposure (PEP) measures
Category I – touching or feeding animals, licks on intact skin	None
Category II – nibbling of uncovered skin, minor scratches or abrasions without bleeding	Immediate vaccination and local treatment of the wound
Category III – single or multiple transdermal bites or scratches, licks on broken skin; contamination of mucous membrane with saliva from licks, contacts with bats.	Immediate vaccination and administration of rabies immunoglobulin; local treatment of wound

Doses:

These regimens are for all age groups, including children.

If patient has not previously been vaccinated for rabies:

Human Rabies Immune Globulin (HRIG) - 20 IU/kg once on day 0* (can be given as late as day 7)

If feasible, the full dose should be infiltrated around and into the wound(s). Any remaining volume should be administered IM at an anatomical site distant from the site of vaccination administration. Do not administer in the same syringe as the vaccine and do not use more than the recommended dose as the HRIG may partially suppress active production of rabies vaccine antibody.

Vaccine – Human diploid cell vaccine (HDCV) or purified chick embryo cell vaccine (PCECV) 1ml, IM in the deltoid area (required site of administration for adults and older children; for younger children, the outer aspect of the thigh may be used. Do NOT use the gluteal area). One dose each should be administered on days 0*, 3, 7, and 14. Immunosuppressed patients will need the full 5-dose regimen given on days 0, 3, 7, 14, and 28.

If patient has been previously vaccinated with an ACIP-recommended rabies vaccine regimen or received another vaccine regimen and has a documented history of response to the prior vaccination:

HRIG should not be administered

Vaccine – HDCV or PCECV 1ml IM in the deltoid area (required site of administration for adults and older children; for younger children, the outer aspect of the thigh may be used. Do NOT use the gluteal area). One dose each should be administered on days 0* and 3.

*day 0 is the date when first dose of the vaccine is administered

Human Bite

The bacteriologic characteristics of these wounds are complex, but include aerobic bacteria, such as streptococci, *S. aureus*, and *Eikenella corrodens*, as well as with multiple anaerobic organisms, including *Fusobacterium*, *Peptostreptococcus*, *Prevotella*, and *Porphyromonas* species. *Eikenella corrodens* is resistant to first-generation cephalosporins, macrolides, clindamycin, and aminoglycosides.

If patient presents with 12 to 24 hours of the bite and meets any of the following criteria:

- immunocompromised,
- asplenic,
- advanced liver disease,
- pre-existing or resultant edema of the affected area,
- moderate/severe injury especially to the hand or face or has injuries that may have penetrated the periosteum or joint capsule

Then give preemptive antibiotic therapy for 3-5 days. See therapy choices below.

If the patient presents greater than 24 hours from the bite AND the wound from the bite is infected, antimicrobial therapy is warranted.

First line therapy is :

- Amoxicillin/clavulanate 875mg/125mg PO BID*
OR
- Ampicillin/sulbactam 1.5 to 3.0 grams IV q6h*
OR
- Ertapenem 1 gm IV daily*

For patients with Penicillin allergy, alternative regimens include:

- Doxycycline 100mg PO BID
OR
- Moxifloxacin 400mg PO QD
OR
- Levofloxacin 750mg PO QD + Clindamycin 300mg PO TID

*Preferred regimen in pregnancy.

Tuberculosis

The following recommendations closely follow the CDC guidelines from 2000 latent tuberculosis infection (LTBI), 2003 (TB) with the update in 2011 regarding LTBI and update in 2013 regarding the use of bedaquiline fumarate for the treatment of multidrug resistant tuberculosis. These references can be found at:

<http://www.cdc.gov/mmwr/PDF/rr/rr4906.pdf>

<http://www.cdc.gov/mmwr/pdf/wk/mm6048.pdf>

<http://www.cdc.gov/mmwr/pdf/wk/mm5211.pdf>

<http://www.cdc.gov/mmwr/PDF/rr/rr6209>

Tuberculosis (TB) develops in 5-10% of persons who get infected with *M. tuberculosis*, typically after a latency of 6-18 months or as long as decades in some patients. Conditions that impair cellular immunity, especially HIV infection, increase the likelihood of disease development at any interval after infection.

Latent Tuberculosis Infection (LTBI)

Isoniazid (INH) is the only medication FDA-approved medication for TB preventive therapy . However, self-supervised daily regimens have a completion rate of only 60% or less largely due to the long duration of therapy (6 month to 9 months). Isoniazid-rifapentine (INH-RPT) has been demonstrated to be as effective as daily INH therapy when administered once weekly by direct observed therapy (DOT) for 12 weeks.

Definitions for this section:

DOT = direct-observed therapy

INH = Isoniazid

INH-RPT = Isoniazid/Rifapentine

RIF = Rifampin

INH-RPT therapy may be used in place of 9 months of INH daily monotherapy in the following patients, **if active TB has been ruled out:**

- Otherwise healthy patients 12 years of age or older who have a predictive factor for greater likelihood of TB developing (e.g., recent exposure to contagious TB, conversion from negative to positive on a TB skin test, radiographic findings of healed pulmonary TB)
- HIV-infected persons who are otherwise healthy and are not taking antiretroviral medications

INH-RPT is NOT recommended for:

- Children 2 years of age or younger (safety not established)
- HIV-infected persons receiving antiretroviral treatment (due to drug-drug interactions)
- Patients presumed to be infected with INH or RIF-resistant *M. tuberculosis*
- Women who are pregnant or wishing to become pregnant (safety unknown)

Regimens for the Treatment of LTBI :

Adults:

- INH 300mg PO daily x 6 - 9 months (5mg/kg; max 300mg)* (minimum doses: 180-270)
- INH 900mg PO twice weekly DOT x 6 - 9 months (15 mg/kg; max 900mg)* (minimum doses: 76)
- INH-RPT 900mg/900mg PO DOT weekly x 12 doses (Minimum doses: 12)
 - INH: 15 mg/kg rounded to nearest 50 or 100mg up to 900mg maximum
 - RPT: 10-14kg = 300mg; 14.1-25 kg = 450mg; 25.1-32kg = 600mg; 32.1-49.9kg = 750mg; 50kg or more = 900mg
- Rifampin 600mg PO daily x 4 months (10mg/kg; max 600mg) (minimum doses: 120)

Children aged 2-11 years:

- INH 15 mg/kg daily x 9 months (rounded up to the nearest 50 or 100mg; 900mg maximum)
-

**Regimens of rifampin and pyrazinamide should not be offered to LTBI due to the reports of severe liver injury and deaths.

*9 months of treatment is preferred (A rating), especially in HIV positive patients; 6 months is an acceptable alternative in HIV negative patients (B rating), but should only be considered in HIV positive patients when 9 months of treatment is not possible

Completion of therapy is based on total number of doses taken and the patient may be given up to one year to complete the minimum number of doses.

Baseline and routine laboratory monitoring during treatment of LTBI are indicated only when there is a history of liver disease, HIV infection, pregnancy (or within 3 months post delivery), or regular alcohol use. When indicated, baseline labs should consist of AST, ALT, and bilirubin.

Treatment of TB disease:

In individuals with active tuberculosis, utilize the following combinations:

TABLE 2. Drug regimens for culture-positive pulmonary tuberculosis caused by drug-susceptible organisms

Regimen	Initial phase		Continuation phase			Range of total doses (minimal duration)	Rating* (evidence) [†]		
	Drugs	Interval and doses [‡] (minimal duration)	Regimen	Drugs	Interval and doses ^{‡§} (minimal duration)		HIV ⁻	HIV ⁺	
1	INH RIF PZA EMB	Seven days per week for 56 doses (8 wk) or 5 d/wk for 40 doses (8 wk) [¶]	1a	INH/RIF	Seven days per week for 126 doses (18 wk) or 5 d/wk for 90 doses (18 wk) [¶]	182–130 (26 wk)	A (I)	A (II)	
			1b	INH/RIF	Twice weekly for 36 doses (18 wk)		92–76 (26 wk)	A (I)	A (II) [#]
			1c**	INH/RPT	Once weekly for 18 doses (18 wk)		74–58 (26 wk)	B (I)	E (I)
2	INH RIF PZA EMB	Seven days per week for 14 doses (2 wk), then twice weekly for 12 doses (6 wk) or 5 d/wk for 10 doses (2 wk), [¶] then twice weekly for 12 doses (6 wk)	2a	INH/RIF	Twice weekly for 36 doses (18 wk)	62–58 (26 wk)	A (II)	B (II) [#]	
			2b**	INH/RPT	Once weekly for 18 doses (18 wk)		44–40 (26 wk)	B (I)	E (I)
3	INH RIF PZA EMB	Three times weekly for 24 doses (8 wk)	3a	INH/RIF	Three times weekly for 54 doses (18 wk)	78 (26 wk)	B (I)	B (II)	
4	INH RIF EMB	Seven days per week for 56 doses (8 wk) or 5 d/wk for 40 doses (8 wk) [¶]	4a	INH/RIF	Seven days per week for 217 doses (31 wk) or 5 d/wk for 155 doses (31 wk) [¶]	273–195 (39 wk)	C (I)	C (II)	
			4b	INH/RIF	Twice weekly for 62 doses (31 wk)		118–102 (39 wk)	C (I)	C (II)

Definition of abbreviations: EMB = Ethambutol; INH = isoniazid; PZA = pyrazinamide; RIF = rifampin; RPT = rifapentine.

* Definitions of evidence ratings: A = preferred; B = acceptable alternative; C = offer when A and B cannot be given; E = should never be given.

[†] Definition of evidence ratings: I = randomized clinical trial; II = data from clinical trials that were not randomized or were conducted in other populations; III = expert opinion.

[‡] When DOT is used, drugs may be given 5 days/week and the necessary number of doses adjusted accordingly. Although there are no studies that compare five with seven daily doses, extensive experience indicates this would be an effective practice.

[§] Patients with cavitation on initial chest radiograph and positive cultures at completion of 2 months of therapy should receive a 7-month (31 week; either 217 doses [daily] or 62 doses [twice weekly]) continuation phase.

[¶] Five-day-a-week administration is always given by DOT. Rating for 5 day/week regimens is All.

[#] Not recommended for HIV-infected patients with CD4⁺ cell counts <100 cells/ μ l.

** Options 1c and 2b should be used only in HIV-negative patients who have negative sputum smears at the time of completion of 2 months of therapy and who do not have cavitation on initial chest radiograph (see text). For patients started on this regimen and found to have a positive culture from the 2-month specimen, treatment should be extended an extra 3 months.

Table 3. Doses of antituberculosis drugs for adults and children

Drug	Preparation	Adults / Children	Doses			
			Daily	1x/wk	2x/wk	3x/wk
First Line Drugs						
Isoniazid	Tablets (50mg, 100mg, 300mg); elixir (50mg/5ml); aqueous solution (100mg/ml) for IV or IM injection	Adult (max.)	5mg/kg (300mg)	15mg/kg (900mg)	15mg/kg (900mg)	15mg/kg (900mg)
		Children (max.)	10-15mg/kg (300mg)	—	20-30mg/kg (900mg)	—
Rifampin	Capsule (150mg, 300mg); powder may be suspended for oral administration; aqueous solution for IV administration	Adult (max.)	10mg/kg (600mg)	—	10mg/kg (600mg)	10mg/kg (600mg)
		Children (max.)	10-20mg/kg (600mg)	—	10-20mg/kg (600mg)	—
Rifabutin	Capsule (150mg)	Adult (max.)	5mg/kg (300mg)	—	5mg/kg (300mg)	5mg/kg (300mg)
		Children (max.)	Appropriate dosing unknown	Appropriate dosing unknown	Appropriate dosing unknown	Appropriate dosing unknown
Rifapentine	Tablet (150mg, film coated)	Adult (max)	—	10mg/kg (continuation phase) (600mg)	—	—
		Children	Not approved for use	Not approved for use	Not approved for use	Not approved for use
Pyrazinamide	Tablet (500mg, scored)	Adult	See table 4	—	See table 4	See table 4
		Children (max.)	15-30mg/kg (2g)	—	50mg/kg (2g)	—
Ethambutol	Tablet (100mg, 400mg)	Adult	See table 5	—	See table 5	See table 5
		Children (max.)	15-20mg/kg daily (1g)	—	50mg/kg (2.5g)	—

TABLE 4. Suggested pyrazinamide doses, using whole tablets, for adults weighing 40–90 kilograms

	Weight (kg)*		
	40–55	56–75	76–90
Daily, mg (mg/kg)	1,000 (18.2–25.0)	1,500 (20.0–26.8)	2,000† (22.2–26.3)
Thrice weekly, mg (mg/kg)	1,500 (27.3–37.5)	2,500 (33.3–44.6)	3,000† (33.3–39.5)
Twice weekly, mg (mg/kg)	2,000 (36.4–50.0)	3,000 (40.0–53.6)	4,000† (44.4–52.6)

*Based on estimated lean body weight.

†Maximum dose regardless of weight

TABLE 5. Suggested ethambutol doses, using whole tablets, for adults weighing 40–90 kilograms

	Weight (kg)*		
	40–55	56–75	76–90
Daily, mg (mg/kg)	800 (14.5–20.0)	1,200 (16.0–21.4)	1,600† (17.8–21.1)
Thrice weekly, mg (mg/kg)	1,200 (21.8–30.0)	2,000 (26.7–35.7)	2,400† (26.7–31.6)
Twice weekly, mg (mg/kg)	2,000 (36.4–50.0)	2,800 (37.3–50.0)	4,000† (44.4–52.6)

*Based on estimated lean body weight.

†Maximum dose regardless of weight

Completion of therapy:

Completion of therapy is determined by the total number of doses taken rather than on the duration of therapy. In cases of patient nonadherence, the goal is to deliver the specified number of doses within a recommended maximum period of time. For example, for a 6-month daily regimen the 182 doses should be administered within 9 months of beginning treatment.

Please refer to the full MMWR document for second-line drugs or for multi-drug resistance.

<http://www.cdc.gov/mmwr/pdf/wk/mm5211.pdf>

<http://www.cdc.gov/mmwr/PDF/rr/rr6209>

Bedaquiline may be used for 24 weeks of treatment in adults with laboratory-confirmed pulmonary multi-drug resistant TB (i.e., resistance to both INH and RIF) when an effective treatment regimen cannot otherwise be provided. The recommended dose is 400mg PO once daily for 2 weeks, followed by 200mg PO three times a week for 22 weeks. It should be taken with food in order to maximize absorption.

Upper Respiratory Tract Infections

Please find references at the end of this URTI section.

Bronchitis 1,2,5,6

Adult

- >90% non-bacterial; empiric antibiotics NOT recommended
- Focus of clinical assessment should be to rule out pneumonia
- Purulent sputum is not predictive of bacterial infection
- In patients with cough > 3 weeks, vital sign abnormalities or asymmetrical lung sounds consider chest x-ray
- Consider influenza therapy, start within 48 hours of symptom onset
- If pertussis is suspected, initiate empiric therapy while confirming diagnosis
- **Routine antibiotics are not recommended regardless cough duration**

Pediatric

- Cough illness/bronchitis rarely warrants antibiotic treatment
- Consider Antibiotic treatment for
 - Suspected pneumonia based on fever with focal exam, infiltrates on chest x-ray, tachypnea, or toxic appearance
 - Prolong cough (>10-14 days) without improvement.
 - If child has underlying chronic pulmonary disease (not including asthma)
- Treat with a macrolides (erythromycin) for children > 5 with suspected mycoplasma or pertussis (option: tetracycline ≥8years old)

Rhinosinusitis 1,3,5,7

Adult

- Most cases are uncomplicated viral infections
- Reserve diagnosis of bacterial rhinosinusitis to patients with symptoms >7 days of unilateral maxillary facial/tooth pain/tenderness and purulent nasal
- Most bacterial rhinosinusitis improves without antibiotics (absolute benefit 15%).
- Patients with mild symptoms should not receive antibiotics, but symptomatic treatment
 - Oral decongestants may reduce nasal symptoms
 - Most trials for symptom relief have been inconclusive
- Consider antibiotic for patients with moderate or severe symptoms.
- Use narrow spectrum agents for *S. pneumonia* and *H. influenzae*
 - Amoxicillin remains an appropriate choice for uncomplicated infection.
 - Consider 2nd line agent if no improvement after 72 hours
- **Empiric Therapy** (*S.pneum*/*H. flu*)
 - Amoxicillin/Clavulanate 875/125 po BID x 5days
 - Note: amoxicillin alone may be used based on local antibiogram
 - Beta-lactam allergy: doxycycline 100mg po BID x 5days
 - Levofloxacin 500mg Q 24 hours x 5 days
 - Clindamycin 300mg PO TID plus Cefpodoxime 200mg BID X 5 days
- Note: azithromycin, SMX/TMP, and 2nd/3rd generation cephalosporins are NOT appropriate

Pediatric

- Most cases are uncomplicated viral infection: Antibiotics not indicated
- Mucopurulent rhinitis (thick, opaque, or discolored nasal discharge) is common with viral rhinosinusitis
- Consider bacterial sinusitis if:
 - If rhinorrhea or day time cough symptoms last more than >10-14days without improvement.
or
 - Severe symptoms exist: fever >39C with purulent nasal discharge; facial swelling or pain
- Initial antibiotic treatment should be a narrow-spectrum agent active against likely pathogens
 - Good options are Amoxicillin or amoxicillin/clavulanate
- **Empiric Therapy**
 - Amoxicillin/Clavulanate 45mg/kg/day po BID x 10days
 - Note: amoxicillin alone may be used based on local antibiogram
 - Clindamycin 30-40mg/kg/day PO TID plus Cefdinir 14mg/kg/day PO divided BID x 10 days
 - Levofloxacin: 6 months to 5 years: Levofloxacin 16-20mg/kg/day PO divided BID x 10 days (max dose of 500mg)
 - Levofloxacin: 5 to 16 years of age: 8-10 mg/kg/day PO Q 24 Hours x 10 days (max dose of 500mg)
 - If patient is at risk for antibiotic resistance (<2yo, daycare, prior antibiotics within past month, prior hospitalization within past 5 days, immunocompromised) or failed initial therapy: use amoxicillin/clavulanate 90mg/kg/day po BID 10-14days
 - Note: in children with vomiting that precludes oral antibiotics, a single dose of ceftriaxone (50mg/kg/day) may be given IV or IM followed by initiation of oral antibiotics 24hours later.

URI, unspecified ^{1,4,5,7}

Sore throat, cough and nasal symptoms may be present, without a prominent symptom, may last up to 14 days

- Purulent secretions in nares/throat are neither predictive of bacterial infection NOR benefit from antibiotic treatment
- Antibiotic treatment is NOT recommended, DOES NOT enhance illness resolution or prevent complications
- Acute cough may be relieved by first-generation antihistamines and decongestants
- In uncomplicated colds, cough and nasal discharge may persist for 14 days or more
- Mucopurulent rhinitis (thick, opaque, or discolored nasal discharge) frequently accompany viral infection
- Antibiotics are not indicated until symptoms have not improved for 10-14 days.

Pharyngitis ^{8,9,10,11}

- ADULT Pharyngitis
 - Background
 - Only 5-15% of adult cases are caused by Group A β -hemolytic streptococcal (GAS) pharyngitis
 - Antibiotic therapy of GAS pharyngitis hastens resolution by 1-2 days if initiated within 2-3 days of symptom onset
 - Diagnosis

- Testing for GAS pharyngitis usually is NOT recommended for adults when s/sx strongly suggest a viral etiology such as cough, rhinorrhea, hoarseness, or oral ulcers
 - Lab testing is not indicated in all patients with pharyngitis
 - Patients with none or only one of the following s/sx should NOT be tested or treated. Rapid Streptococcal antigen test (RAT) is recommended for patients with two or more criteria:
 - History of fever
 - Lack of cough
 - Tonsillar exudates
 - Tender anterior cervical adenopathy
 - Antibiotic therapy restricted to those patient with positive RAT results
 - Cultures are not recommended for routine evaluation or for confirmation of negative results if RAT sensitivity >80%
- Treatment
- Penicillin V 250mg QID x 10 days
 - Penicillin V 500mg BID x 10 days
 - Amoxicillin 1000mg QDay x 10 days
 - Amoxicillin 500mg BID x 10 days
 - Benzathine Penicillin G 1.2MU IM x1 Dose
- If patient has history of anaphylaxis to penicillin:*
- Cephalexin 500mg BID x10 days
 - Cefadroxil 1Gm Qday x10 days
- If patient does not have history of anaphylaxis to penicillin:*
- Clindamycin 300mg TID x10 days
 - Azithromycin 500mg Qday x5 days
 - Clarithromycin 250mg BID x10 days

Antibiotics NOT recommended:

- Tetracyclines – due to high level of resistance
- Fluoroquinolones – due to unnecessarily broad spectrum
 - TMP-SMX – due to resistance and reported clinical failures

- PEDS Pharyngitis
 - Background
 - GAS is the most common bacterial cause of acute pharyngitis, accounting for 20-30% of cases in children
 - Diagnosis
 - The signs and symptoms of viral and bacterial pharyngitis overlap so broadly that accurate diagnosis on the basis of clinical grounds alone is usually impossible, however, prominent rhinorrhea, cough, hoarseness, conjunctivitis, and/or diarrhea suggest a VIRAL etiology
 - Rapid Strep Kits or culture should be positive before beginning antibiotic treatment
 - Confirm negative results on antigen tests with culture
 - Treatment
 - Do not treat pending culture results, however, if done so, make sure to stop antibiotics when culture is negative and discourage parents from saving antibiotics
 - Penicillin V 250mg BID x10 days
 - Penicillin V 250mg TID x10 days
 - Amoxicillin 50mg/kg (max 1000mg) QDay x10 days
 - Amoxicillin 25mg/kg (max 500mg) BID x10 days
 - Benzathine Penicillin G (< 27kg): 600,000 Units IM x1 Dose
 - Benzathine Penicillin G (>27kg): 1,200,000 Units IM x1 Dose
 - If patient has history of anaphylaxis to penicillin:*
 - Cephalexin 20mg/kg (max 500mg) BID x 10 days
 - Cefadroxil 30mg/kg (max 1Gm) QDay x 10 days
 - If patient does not have history of anaphylaxis to penicillin:*
 - Clindamycin 7mg/kg/dose (max 300mg/dose) TID x 10 days
 - Azithromycin 12mg/kg (max 500mg) QDay x 5 days
 - Clarithromycin 7.5mg/kg/dose (max 250mg/dose) BID x 10 days

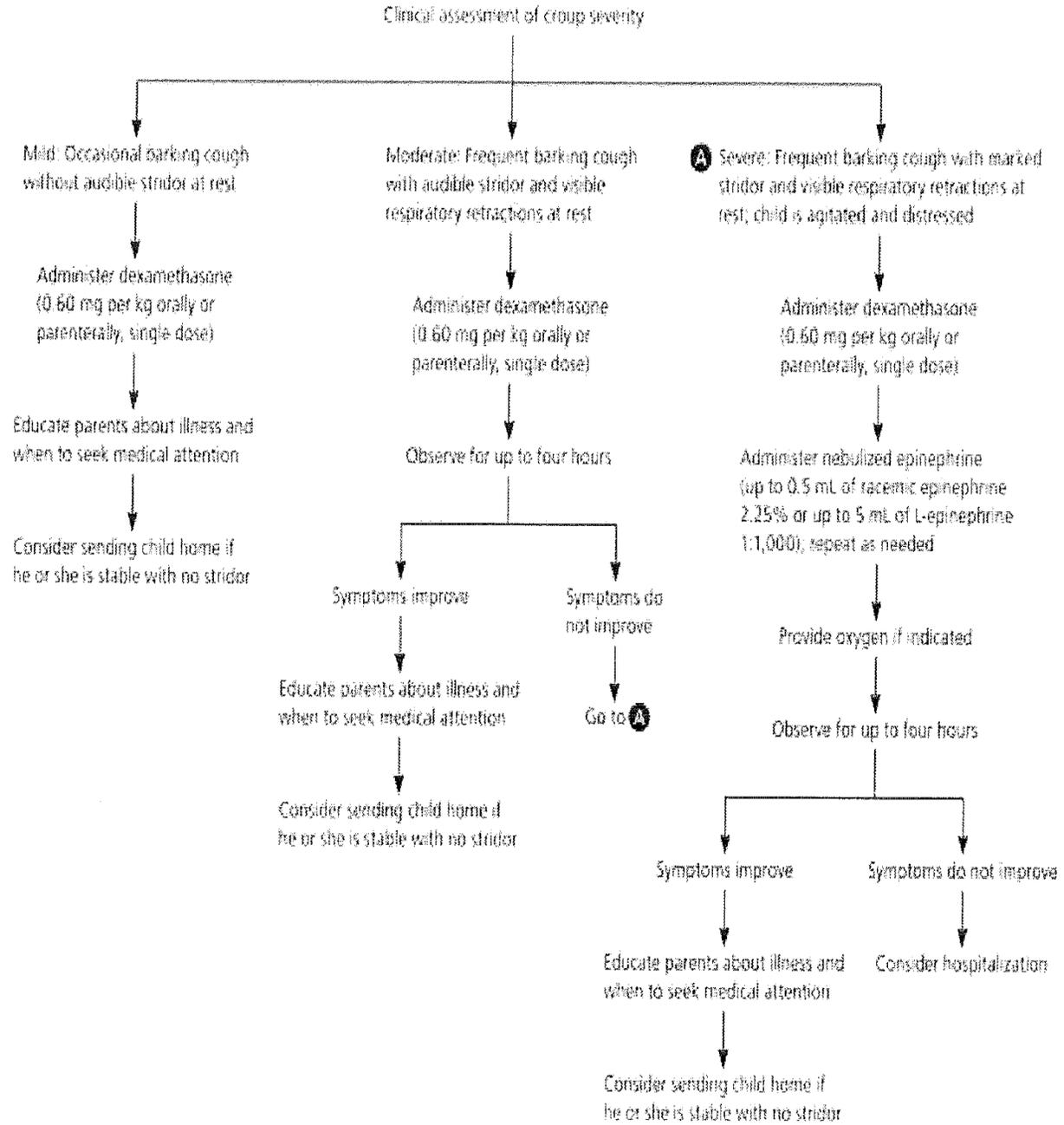
Antibiotics NOT recommended:

- Tetracyclines – due to high level of resistance
- Fluoroquinolones – due to unnecessarily broad spectrum and risk of cartilage damage in children
- TMP-SMX – due to resistance and reported clinical failures

Croup¹²

- Background
 - Clinical syndrome of upper airway obstruction causing a hoarse voice, barking cough, inspiratory stridor, and variable amounts of respiratory distress – usually of viral origin
 - One of the most frequent causes of acute respiratory distress in children
 - Represents 15% of lower respiratory tract disease usually occurring in children <6 years of age, primarily in children between 6 months and 3 years
- Diagnosis
 - Diagnosis is made on clinical grounds and does not typically require any laboratory testing or radiography
 - Lateral neck x-ray may be useful to help detect epiglottitis, bacterial tracheitis, or retropharyngeal abscess
 - Bronchoscopy or direct laryngoscopy may be useful for patients with recurrent croup due to a higher likelihood of a subglottic lesion
 - Endoscopy may be needed to evaluate for GERD
 - Posterior-Anterior chest x-ray and CBC with differential are recommended if lower respiratory tract involvement is suspected
 - Defer all testing if the child is in respiratory distress
- Treatment
 - Stabilization and assessment of airway is paramount
 - Refer to Croup Treatment Algorithm

Croup Treatment Algorithm³¹:



Otitis Media ^{13,14,15,16,17}

- Background
 - Acute – presence of a middle ear effusion and inflammation with signs and symptoms of acute infection
 - Chronic – persistence of a middle ear effusion for greater than 3 months, and the effusion may be serous or purulent
 - Affects all ages, but mostly infants and young children under the age of 4
 - Second most common organic disease seen by pediatricians (after upper respiratory tract infections)
- Diagnosis
 - Based on presence of moderate to severe bulging of the TM or new onset otorrhea
 - May diagnose with mild bulging and recent (<48 hours) onset of ear pain (holding, tugging, rubbing or the ear in a nonverbal child) or intense erythema of the TM
 - Differentiate severe AOM (moderate to severe otalgia >48 hours or fever >39 C) from mild to moderate AOM
- Treatment
 - For severe AOM, initiate treatment in all children > 6 months
 - For mild to moderate unilateral AOM in children 6-23 months, observe with analgesia for 48 hours before starting antibiotics or to begin treatment. If observation is chosen, make sure to arrange a method for follow-up
 - For mild to moderate AOM in children > 24 months, it is reasonable to observe for 48 hours or to begin antibiotic treatment
 - Do NOT initially treat otitis media with effusion (OME) with an antibiotic. Treatment may be indicated if bilateral effusion persists >3 months
 - Treat patients with acute onset of signs/symptoms + middle ear effusion + signs/symptoms of middle-ear inflammation
 - Acute empiric therapy *Primary regimen*
 - Age < 2 years: 10 days of therapy
 - Age ≥ 2 years: 5-7 days of therapy (5 days may be inadequate for severe infection)
 - Patient has not had antibiotics in the prior month and does not have purulent conjunctivitis:
 - Amoxicillin 80-90mg/kg/day Q12H
 - Amoxicillin 80-90mg/kg/day Q8H
 - Amox-Clav ES 90/6.4 mg/kg/day BID
 - Patient has had antibiotics in the prior month or fails to respond to Amoxicillin (make take 72h to respond):
 - Amox-Clav ES 90/6.4 mg/kg/day BID
 - Ceftriaxone 50mg/kg IV or IM QDay x3 days
 - *Alternative Regimen*
 - Cefdinir 14mg/kg/day Q12H
 - Cefdinir 14mg/kg/day QDay
 - Cefpodoxime proxetil 10mg/kg/day Q12H
 - Cefpodoxime proxetil 10mg/kg/day QDay

- Cefprozil 30mg/kg/day Q12H
- Cefuroxime axetil 30mg/kg/day Q12H
- Clindamycin 30mg/kg/day Q8H
- *Otitis Media, Treatment Failure after 3 Days*
 - No change in ear pain, fever, bulging TM or otorrhea after 3 days of therapy
 - Age < 2 years: 10 days of therapy
 - Age ≥ 2 years: 5-7 days of therapy (5 days may be inadequate for severe infection)
 - Primary Regimen (Patient has not had any antibiotics in the prior month other than in the last 3 days)
 - Amox-Clav 90mg/kg/day of Amoxicillin component BID
 - Cefdinir 7mg/kg Q12H
 - Cefdinir 14mg/kg QDay
 - Cefpodoxime proxetil 10mg/kg/day QDay
 - Cefprozil 15mg/kg Q12H
 - Cefuroxime axetil 30mg/kg/day Q12H
 - Ceftriaxone 50mg/kg IM x3 days
 - Patient **has had** antibiotics in the prior month in addition to the last 3 days
 - Ceftriaxone 50mg/kg IM x3 days
 - Clindamycin 20-30mg/kg/day QID + Tympanocentesis
 - Newer fluoroquinolones are active against drug-resistant Strep. Pneumoniae, but are not approved for use in children
 - Vancomycin is active against drug-resistant Strep Pneumoniae
 - Ceftriaxone IM x3 days is superior to 1-day treatment against drug-resistant Strep Pneumoniae
 - Amox-Clav high dose reported successful for AOM caused by penicillin-resistant Strep Pneumoniae

References for the Upper Respiratory Infections:

1. Adult Appropriate Antibiotic Use Summary: Physician Information Sheet (Adults). Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/adult-approp-summary.pdf> Accessed: 8 August 2014.
2. Acute Cough Illness (Acute Bronchitis): Physician Information Sheet (Adults). Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/adult-acute-cough-illness.pdf> Accessed: 8 August 2014
3. Acute Bacteril Rhinosinusitis: Physician Information Sheet (Adults). Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/adult-acute-bact-rhino.pdf> Accessed: 8 August 2014

4. Non specific Upper Respiratory Tract Infection: Physician Information Sheet (Adults). Center for Disease Control and Prevention. <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/adult-nurti.pdf> Accessed: 8 August 2014
5. Appropriate treatment Summary: Physician Information Sheet (Pediatrics). Center for Disease Control and Prevention. Available at : <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/child-approp-treatmt.pdf> Accessed: 8 August 2014
6. Cough Illness/Bronchitis: Physician Information Sheet (Pediatrics). Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/child-cough-illness.pdf> Accessed: 8 August 2014
7. The Common Cold: Rhinits vs. Sinusitis: Physician Information Sheet (Pediatrics). Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/child-rhin-vs-sinus.pdf> Accessed: 8 August 2014.
8. Acute Pharyngitis in Adults. Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/adult-acute-pharyngitis.pdf> Accessed: 14 August 2014.
9. Pharyngitis in Children. Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/child-pharyngitis.pdf> Accessed: 14 August 2014.
10. Streptococcal Pharyngitis. Sanford Guide. Available at: <http://webedition.sanfordguide.com/sanford-guide-online/disease-clinical-condition/streptococcal-pharyngitis> Accessed: 14 August 2014.
11. Clinical Practice Guidelines for the Diagnosis and Management of Group A Streptococcal Pharyngitis: 2012 Update by the Infectious Diseases Society of America. Available at: <http://cid.oxfordjournals.org/content/early/2012/09/06/cid.cis629.full.pdf+html> Accessed: 14 August 2014.
12. Croup. Diseasedex Emergency Medicine Clinical Review. Available at: <http://www.micromedexsolutions.com/> Accessed: 14 August 2014.
13. Otitis Media. Center for Disease Control and Prevention. Available at: <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/child-otitismedia.pdf> Accessed: 14 August 2014.
14. Otitis Media, Prophylaxis. Sanford Guide. Available at: <http://webedition.sanfordguide.com/sanford-guide-online/disease-clinical-condition/otitis-media-prophylaxis> Accessed: 14 August 2014.
15. Otitis Media, Acute, Empiric Therapy. Sanford Guide. Available at: <http://webedition.sanfordguide.com/sanford-guide-online/disease-clinical-condition/otitis-media> Accessed: 14 August 2014.
16. Otitis Media, Treatment Failure. Sanford Guide. Available at: <http://webedition.sanfordguide.com/sanford-guide-online/disease-clinical-condition/otitis-media-treatment-failure> Accessed: 14 August 2014.

17. Otitis Media. Diseasedex Emergency Medicine Clinical Review. Available at:
<http://www.micromedexsolutions.com/> Accessed: 14 August 2014.

Urinary Tract Infections

Asymptomatic bacteriuria (ASB)

Diagnosis of asymptomatic bacteriuria based on culture results

- a. Women must have 2 consecutive clean catch voided specimens containing counts $\geq 10^5$ cfu/ml
- b. In men, a single clean catch voided urine specimen with one bacterial isolate in counts $\geq 10^5$ in absence of symptoms
- c. Catheterized specimens in males or females $\geq 10^2$ units is diagnostic
- d. Pyuria alone is not an indication for treatment

Uncomplicated Cystitis (women)

1. Nitrofurantoin 100 mg PO BID for 5 days
 - **Drug of choice** due to minimal resistance and collateral damage when used for UTIs in patients with adequate renal function (CrCl >60ml/min).
 - The success of therapy depends on achieving adequate urinary concentrations.
 - Recently, the evidence supporting the contraindication of nitrofurantoin in patients with a CrCl of less than 60 mL/min has been the subject of debate.
 - A literature review for nitrofurantoin from 1965 to June 2012 supports using the drug in patients with a CrCl of 40 mL/min or higher when treatment is short term (≤ 1 week), however more studies are needed
2. Sulfamethoxazole/Trimethoprim 1 DS tablet PO BID x3 days
 - Review of local resistance is imperative
 - **Check local resistance patterns.** Should be used with **caution** and last line for empiric therapy when high resistance (>20%) is present at your service unit.
 - Also some studies have shown high levels of resistance when patients have been exposed to sulfamethoxazole/trimethoprim in the last 90-10 days.
3. Cephalexin 500mg PO BID for 10 days
 - An available option for uncomplicated cystitis
 - Considerations:
 - Drug displays extremely high drug concentration in bladder
 - Local resistance patterns must be reviewed
4. Ciprofloxacin 250mg PO BID for 3 days
 - Regimen should be considered as an alternative for acute cystitis when first and second line agents are inappropriate (ie. drug allergy, renal dysfunction, etc)
 - When local resistance is $\geq 10\%$ the use of a fluoroquinolone is cautioned

NOTE: B-lactams such as amoxicillin and ampicillin **should not** be used for empiric therapy due to poor efficacy and high antimicrobial resistance; other β -lactams such as amoxicillin/clavulanate, cefdinir, cefuroxime and cefpodoxime in 3-7 day regimens are appropriate in certain settings when patient factors such as allergies, comorbid conditions, and resistance patterns preclude use of recommended empiric agents. Other β -lactams generally are inferior to recommended agents and expose patients to increased risk of adverse effects.

Pyelonephritis (women)

Treatment of acute pyelonephritis in an outpatient setting:

A urine culture and susceptibility test should be performed and initial empiric therapy selected and tailored to the uropathogen.

- Cefuroxime 500 mg PO BID x 14 days with **OR** without a consolidated 24 hour dose of aminoglycoside given once **OR** 1 g ceftriaxone given once is appropriate for patients not requiring hospitalization.
- Ciprofloxacin 500 mg PO BID x 7 days (or initial 400 mg Cipro IV) with **OR** without a consolidated 24 hour dose of aminoglycoside **OR** 1 g ceftriaxone given once is appropriate as second line therapy in patients not requiring hospitalization.
 - Data are insufficient to make a recommendation about what fluoroquinolone resistance level requires an alternative agent in conjunction with or to replace a fluoroquinolone for treatment of pyelonephritis.

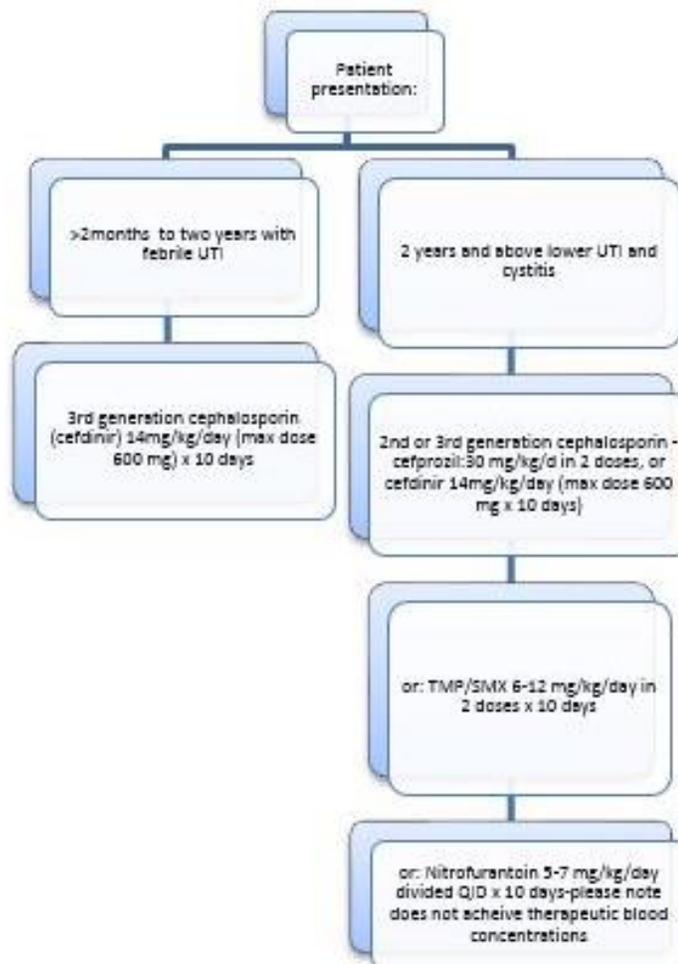
If hospitalization is required, treat with IV regimen such as fluoroquinolone or aminoglycoside with or without ampicillin; an extended-spectrum cephalosporin or extended-spectrum penicillin with or without an aminoglycoside.

UTI Screening-Pregnant women-initial screening should be performed early in pregnancy and treated if positive with a 3-7 day regimen. Screening is recommended to occur between 12-16 weeks

Screening for and treatment should occur before transurethral resection of the prostate (TURP) or other urologic procedures where mucosal bleeding is warranted

Screening and/or treatment is not recommended in the following patients: premenopausal, non-pregnant women, diabetic women, older persons living in the community, elderly institutionalized subjects, persons with spinal cord injury, catheterized patients while the catheter is in place

Pediatric UTI



National Pharmacy Council Antibiotic Stewardship Program (ASP) Recommendations

Guideline Recommendations

1. Inpatient recommended guidelines: separate document
2. AmbuCare recommended guidelines: separate document

Recommendations for ASP implementation at Service Units

1. Identify a local Provider and Pharmacist to champion ASP
 2. Education of facility staff (Providers, Pharmacy, Nursing, Lab and Infection Control) on ASP including rationale and referencing CMS transmittal
 3. Antimicrobial guidelines for inpatient and ambulatory care infections
- a. Recommend that each SU develop evidence-based guidelines for their specific most common infections, to include local resistance patterns, local patient specific needs, and local formulary restrictions
 - b. Recommend contacting ASP working group for help in developing Evidence Based Medicine (EBM) guidelines utilizing current recommendations as a starting point
4. ASP monitors, surveillance activities
- a. Recommend inpatient prospective audit and feedback activities as a primary focus for hospitalized patients.
 - b. Recommend trending antimicrobial utilization with regular feedback to prescribers.
 - c. Recommend tracking adverse drug effects – specifically w/ antimicrobials
 - d. Develop Service Unit (SU) specific intervention tracking – Access database would be very useful (ex. Anticoagulation Access database)
 - e. As programs develop, recommend national monitor for SU to report
 - f. Recommend contacting ASP working group for help in developing SU specific surveillance activities

Antibiogram recommendations

1. Recommended that each SU prepare an Antibiogram
 2. Recommend presenting an educational section of the antibiogram
- a. May include important strains that are not included in the antibiogram (*C. difficile*, MTB, KPC, etc)
 - b. May include trend data (MRSA, VISA, hVISA, CRE, etc)
3. Recommend use of an Antibiogram toolkit
- a. See AZ Antibiogram Toolkit attached
4. Recommend contacting ASP working group for help in developing antibiograms

Governance:

Determine where local antibiotic stewardship resides: P&T, ICC or both, Med Staff, other? How is the information moved to the Medical Staff and eventually to the Governing Body?

EHR recommendations

1. Develop EHR pediatric weight based antibiotic quick orders or at minimum attach a drug text to the orderable item with recommended weight based dosing
2. Develop EHR disease state menus with recommended first line, second line medications

Ongoing ASP workgroup support

1. Create and continually update an ASP SharePoint site providing links to newest guidelines from nationally recognized organizations for consideration, antibiogram data, educational documents and/or links, and other useful information
2. Provide direct interaction and recommendations with Service Units during the initial implementation phase
3. Provide antibiogram analysis
4. Provide direct interaction and recommendations with Service Units as requested
5. ASP workgroup report quarterly to National Pharmacy and Therapeutics Committee providing updates on national guidelines and formulary recommendations

Sharing information with local and regional health care systems:

1. Recommend all IHS Service Unit (SU) reporting antibiogram data to ASP workgroup
2. Recommend sharing resistance data with health systems that the SU commonly shares patients
3. Recommend sharing antimicrobial formulary with the local health systems
4. Recommend opening a dialog with these local health systems and with the state health departments that the SU covers (this may be multiple states for some SUs)
5. Recommend contacting ASP workgroup when initially developing regional ASP relationships

Local, regional and State health care considerations:

1. Establish POC/champions
2. Set an agenda
 - a. Initially modest
 - b. Discuss long range goal
3. Sharing of data
 - a. Facility approval
4. Communication in event of resistant microbe. Resistance trends reported

5. Monthly meetings to initially establish the group with quarterly meetings thereafter and an option for as needed meetings

Educational materials:

Providers: CDC, links to updated recommendations, and ASP SharePoint Patients: CDC materials

Real value is ASP workgroup's willingness to work assist with individual Service Units

implementation of ASP.

Survey Monkey for IHS ASP:

1. Recommend sending survey monkey for IHS ASP to all SU and participating tribal clinics to evaluate expectations of ASP
2. Recommend that ASP working group review data produced by survey and make additional recommendations