Skin and Soft Tissue Infections

The following FAQ addresses common questions about diabetic foot infections, and antibiotic choices for cellulitis/erysipelas and necrotizing infections. A chart, *Antibiotics for MRSA Skin Infections,* is also included to help with choice of antibiotic.

--Information in chart may differ from product labelling. Information pertains to ADULTS--

Clinical Question	Pertinent Information or Suggested Approach
What are some risk factors for **foot infections in patients with diabetes**?	• Poor glycemic control[2] • Peripheral neuropathy, especially with loss of protective sensation[2] • Peripheral artery disease[2] • Foot deformity, corns, or calluses[2] • Previous foot ulceration or amputation[2] • Visual impairment[2] • Chronic kidney disease, especially for patients receiving dialysis[2] • Smoking[2]

What can be done to **prevent foot infections** in patients with **diabetes**?	• Patients should check their feet every day.[2]
	  ○ Palpate the feet.
	  ○ Visually examine all parts of the feet, using a non-breakable mirror as needed.[2]
	  ○ Enlist the help of caregivers (i.e., if the patient has visual, physical, or cognitive problems that impair their ability to assess their feet).[2]
	• Choose appropriate shoes (e.g., well-fitting walking or running shoes; no open-toe sandals).[2]
	  ○ Refer patients who may benefit for specialized shoes or orthotics (e.g., patients with plantar calluses, hammertoes, ulcers, Charcot foot, loss of protective sensation, poor circulation, history of amputation).[2]
	• Patients should avoid going barefoot.[2]
	• Advise use of a moisturizer on dry or scaly skin.[2]
	• Avoid self-treatment of ingrown toenails or calluses.[2]
	• Patients should seek urgent medical care for ulceration, redness, swelling, or skin warmth.[2]
	• Advise a comprehensive foot exam at least yearly (patients with sensory loss or prior ulceration or amputation should have their feet inspected at each visit).[2] This should include:
	  ○ documentation of risk factors.[2]
	  ○ physical exam (10 g monofilament test plus pinprick, temperature, or vibration testing; visual inspection; assessment for deformities; assessment of pulses in legs and feet).[2]
	  ○ inquiry about symptoms (e.g. pain, burning, numbness, leg fatigue, claudication).[2]

Clinical Question	Pertinent Information or Suggested Approach
What topical products have evidence for management of diabetic foot ulcers?	• Treatment of diabetic ulcers includes offloading, revascularization, debridement, treatment of infection, and physiologic wound dressings.[2] • Patients who do not achieve a 50% reduction of wound area within four weeks can be referred for "advanced" wound management.[2] o Evidence from placebo-controlled RCTs to guide selection of advanced wound therapies is lacking.[2] o Interventions with the most evidence include placental membranes, bioengineered skin substitutes, acellular matrices, and autologous platelet/leukocyte/fibrin patches.[2] Topical antibiotics or antiseptics, honey, negative pressure devices, topical or hyperbaric oxygen lack convincing evidence.[1]
How are diabetic foot infections classified?	• **Mild infections** only involve the skin or subcutaneous tissue; there are no systemic signs or symptoms.[1] Two or more of the following are present: erythema extending >0.5 to <2 cm from the wound margin; local swelling or induration; local tenderness or pain; warmth; and/or purulent discharge.[1] • **Moderate infections** have erythema extending ≥2 cm from the wound margin, and/or involve bone, joint, tendon, or muscle, without systemic symptoms.[1] • **Severe infections** are any foot infection with ≥2 of the following: temp >38°C or <36°C; heart rate >90 beats per minute; respiratory rate >20 breaths per minute or PaCO2 <32 mmHg; WBC >12,000 per mcL or <4,000 per mcL, or ≥10% bands.[1]
What are the **empiric** antibiotic choices for **diabetic foot infections**? *Continued…*	• General considerations: o Consult surgery for patients with severe infection or moderate infection with extensive gangrene, severe ischemia, necrotizing infection, deep abscess, or compartment syndrome.[1] o Choose empiric coverage based on likely organisms, cost, adverse effects, allergies, and infection severity.[1] o Switch to targeted coverage when culture and sensitivity results (of **tissue** collected aseptically with biopsy or curettage) are available.[1] o Generally use IV instead of oral antibiotics in severe infections, or unless stepping down (when improving).[1,30] o Consider hospitalization for IV antibiotics (at least initially) in moderate infections in patients with severe peripheral artery disease or problems with adherence.[1] o Dose antibiotics as for serious infection, with dose adjustment for comorbidities (e.g., kidney insufficiency).[1] o Empiric coverage of *Pseudomonas* is not routinely needed in North America.[1] o Continue antibiotics for mild cases for one to two weeks (10 days post-debridement), or two to four weeks for more severe cases (IV initially, then oral).[1] Duration will be different for patients with bone or joint involvement.[1] • For **mild** infections, usually choose oral agents that cover streptococci and staphylococci (e.g., dicloxacillin [US], cloxacillin [Canada], cephalexin).[1] o For patients who cannot take a beta-lactam, options might include clindamycin,[a] TMP/SMX, doxycycline, levofloxacin, or moxifloxacin.[1]

Clinical Question	Pertinent Information or Suggested Approach
Empiric antibiotic choices for **diabetic foot infections,** continued	• **MRSA** coverage is recommended in: o mild infection with history of MRSA infection or colonization (oral).[1] ▪ Options might include clindamycin,[a] TMP/SMX, doxycycline, linezolid, levofloxacin, or moxifloxacin.[1] o moderate or severe infection and history of MRSA infection or colonization, or MRSA risk factors (e.g., recent antibiotic use or invasive procedure, recent hospital or nursing home stay, hemodialysis, HIV, long-term central venous access, open wounds.[1] ▪ Options might include TMP/SMX, doxycycline, vancomycin, linezolid, or daptomycin.[1] • **Gram negative** coverage is recommended or should be considered in certain scenarios:[1] o moderate or severe infection with no complicating factors. Options might include amoxicillin/clavulanic acid, ampicillin/sulbactam, cefuroxime, cefotaxime, ceftriaxone.[1] o **recent antibiotic exposure** and:[1] ▪ mild infection. Oral options might include amoxicillin/clavulanic acid, TMP/SMX, levofloxacin, or moxifloxacin.[1] ▪ moderate or severe infection (consider expert consult).[1] Options might include ticarcillin/clavulanic acid, piperacillin/tazobactam, cefuroxime, cefotaxime, ceftriaxone, or ertapenem.[1] o moderate or severe infection with risk factors for ESBL-producers.[1] Consider expert consult. Options might include ertapenem, meropenem, imipenem/cilastatin, ciprofloxacin, amikacin, colistin.[1] o moderate or severe infection with suspicion of *Pseudomonas* (macerated ulcer, warm climate, water immersion).[1,30] Options might include ticarcillin/clavulanic acid, piperacillin/tazobactam, meropenem, or imipenem/cilastatin.[1] o moderate or severe infection with ischemia, limb necrosis, or gas formation (gangrene).[1] Urgent surgical consultation is recommended for extensive gangrene, deep abscess, compartment syndrome, severe ischemia.[1] Consider anerobic coverage as well.[1] (Necrotizing infections are covered in a separate section below.) Antibiotic options might include amoxicillin/clavulanic acid, ampicillin/sulbactam, ticarcillin/clavulanic acid, piperacillin/tazobactam, ertapenem, meropenem, imipenem/cilastatin, or cephalosporin (cefuroxime, cefotaxime, ceftriaxone) plus clindamycin[a] or metronidazole.[1]
What antibiotics may be appropriate for **empiric** treatment of **cellulitis** and **erysipelas** (non-necrotizing)? *Continued…*	• General considerations: o Usually choose agents that cover *Streptococcus pyogenes*, or perhaps staphylococci (e.g., for **purulent** infections).[3,5] Due to the difficulty of determining the causative bacteria in most cellulitis cases, prescribers may choose antibiotics that target both.[25] o *Streptococcus pyogenes* is susceptible to beta-lactams.[25] o Consider MRSA coverage for severe penetrating trauma, injection drug use, unhoused persons, military personnel, correctional facility residents, athletes, history of MRSA infection or colonization, prior hospitalization for skin or soft tissue infection, antibiotic use in the past six months, recent invasive procedure (e.g., dialysis), severe infections, septic shock, age <2 yrs or >65 yrs, purulent infections, or facial erysipelas.[4-6,8]

Clinical Question	Pertinent Information or Suggested Approach
Antibiotics that may be appropriate for **empiric** treatment of **cellulitis** and **erysipelas** (non-necrotizing), continued	○ Patients with diabetes may need additional coverage (e.g., for Enterobacterales and anaerobes).[5] ○ Orbital or periorbital cellulitis may also involve *Haemophilus influenzae*, *Moraxella catarrhalis*, other gram negatives (post-trauma), or anaerobes (dental source).[5] ○ Consider additional organisms in specific situations (e.g., bite wounds, fresh water [e.g., *Aeromonas* spp; may cause necrotizing infection]; sea water or seafood exposure [*Vibrio* spp. may cause necrotizing infection])[4,6,7] ○ Associated abscess (e.g., due to staph) will require incision and drainage.[5,6] • **Milder infection** ○ A 5-day course of an oral beta-lactam (penicillin VK, amoxicillin, dicloxacillin [US]. cephalexin) may be sufficient.[3-6,25] For patients who cannot take a beta-lactam, options might include azithromycin, clindamycin,[a] linezolid, tedizolid (US), or omadacycline (US).[5,25] ▪ For MRSA coverage, options include TMP/SMX, doxycycline, clindamycin,[a] minocycline, linezolid, tedizolid (US), delafloxacin (US), or omadacycline.[5,6,8,9] ○ For mild **peri**orbital cellulitis (no systemic signs of infection), expand coverage to amoxicillin/clavulanic acid, cefpodoxime, or cefdinir (plus TMP/SMX or linezolid if MRSA coverage is needed).[5] ○ For patients with **diabetes** and mild infection (outpatient treatment), TMP/SMX should be added to penicillin VK or cephalexin.[5] Omadacycline is another option.[5] • **More severe infection** (i.e., signs of systemic infection[25])(necrotizing infections are discussed in a separate section below) ○ Moderate to severe infection: options might include IV penicillin, cefazolin, ceftriaxone, nafcillin (US), oxacillin (US).[5,6] Alternatives for patients with serious beta-lactam allergy include vancomycin, linezolid, or clindamycin.[5,6,a] ▪ For **MRSA** coverage, options include vancomycin, linezolid, daptomycin, ceftaroline, telavancin, dalbavancin, and ortiavancin.[5,6,9] ○ For severe infection, consider expanding empiric coverage by using vancomycin plus piperacillin/tazobactam.[4] For information on necrotizing infections, see the section below. ○ For orbital cellulitis (consult surgery) or periorbital cellulitis, consider vancomycin **plus** piperacillin/tazobactam or ampicillin/sulbactam or ceftriaxone and metronidazole.[5] For patients with serious beta-lactam allergy, add moxifloxacin to vancomycin in place of a beta-lactam.[5] Linezolid or daptomycin are vancomycin alternatives.[5] ○ For patients with diabetes, consider coverage for Enterobacterales (carbapenem, levofloxacin, or piperacillin/tazobactam) and staph (vancomycin, linezolid, or daptomycin).[5]

Clinical Question	Pertinent Information or Suggested Approach
What antibiotics may be appropriate for **empiric** treatment of **necrotizing** infections?	• In addition to rapid introduction of appropriate IV broad-spectrum antibiotics, surgical intervention is required.[1,6,29] • **Broad spectrum antimicrobial coverage is needed empirically**, including *Streptococcus pyogenes*, MRSA, gram negatives, and anaerobes.[5,6] o Consider vancomycin, linezolid, or daptomycin **plus** piperacillin/tazobactam, a carbapenem, or ceftriaxone plus metronidazole).[4-6] Add clindamycin,[a] or include linezolid, if a toxin-producer is suspected (see below).[5,6] • Consider coverage for *Aeromonas* (e.g., doxycycline plus ciprofloxacin) in cases involving fresh or brackish water exposure, or *Vibrio* in cases involving sea water or seafood exposure.[4,6,7] o For information on *Vibrio* treatment from the CDC, see https://www.cdc.gov/vibrio/healthcare.html. • Include a protein synthesis inhibitor (e.g., clindamycin,[a] linezolid) to block bacterial toxin production if any of the following bacteria are suspected (e.g., in rapidly progressive, severe infection; suggestive gram stain):[5,6,29] o For staph coverage in staphylococcal toxic shock syndrome (e.g., hypotension, fever, organ failure, macular rash, and later desquamation of the palms and soles), consider including vancomycin plus clindamycin,[a] or linezolid.[5,6] o *S. pyogenes* may be covered with high-dose IV penicillin (24 million units/day[c]) or ampicillin, plus high-dose clindamycin[a] (900 mg IV q8h[c]).[5,6,29] For severe necrotizing fasciitis or streptococcal toxic shock syndrome (e.g., hypotension, nausea, vomiting, diarrhea, kidney and/or respiratory failure, erythroderma), consider adjunctive IVIG (0.5 g/kg x 1, then 25 g on days 2 and 3[c]).[5,6,29] o *Clostridium* may be covered with high-dose IV penicillin plus a protein synthesis inhibitor (e.g., clindamycin[a]).[4,6]
How do **antibiotics for MRSA** compare?	See the chart below, Antibiotics for MRSA Skin Infections, below.
How is **impetigo** treated?	• Antibiotic treatment, whether oral or topical, should be aimed at both *Streptococcus pyogenes* and *Staphylococcus. aureus*. Topical antibiotics may be used when there are only a few lesions, while oral antibiotics are used for multiple lesions.[26] • Topical options: mupirocin, fusidic acid [Canada], retapamulin [*Altabax*, US].[8,27] o Ozenoxacin (*Xepi* [US]; *Ozanex* [Canada]) is not first-line due to high cost and lack of head-to-head studies with older agents.[27] The tube size available in Canada may not be sufficient for more than one treatment course in the event of recurrence.[27] • Oral options: dicloxacillin, cephalexin, erythromycin (some *Streptococcus pyogenes* and *Staphylococcus aureus* may be resistant), clindamycin,[a] amoxicillin-clavulanic acid.[4]

--Continue to the section below for a chart, *Antibiotics for MRSA Skin Infections*---

Antibiotics for MRSA Skin Infections

Drug	Considerations and Dosing[b]	Cost (see footnote d)
Ceftaroline (*Teflaro* [US])	• Parenteral formulation only. • Approved for acute bacterial skin and skin structure infections caused by *Staphylococcus aureus* (including MRSA), *E. coli*, *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Klebsiella pneumoniae*, and *Klebsiella oxytoca*.[10,b] • Potential for cross-sensitivity in patients with beta-lactam allergy.[10] • Usual adult dose 600 mg IV Q12H.[10] Reduce dose for CrCl ≤50 mL/min.[10]	$490.40/day. Approved duration of therapy 5 to 14 days.[10]
Clindamycin	• Parenteral and oral formulations available. • Approved for skin and soft tissue infections with *Streptococcus pyogenes*, *Staphylococcus aureus*, and anaerobes.[11-13,b] • Usual adult PO dose: 300 to 450 mg Q6H.[4] • Adult dose for necrotizing infections: 900 mg IV Q8H.[5] • Bacteriostatic.[4] • See **footnote a** regarding resistance concerns.	**US**: ~$30/day (IV); <$10/day (PO) **Canada**: ~$75/day (IV), <$5/day (oral)
Dalbavancin (*Dalvance* [US], *Xydalba* [Canada])	• Parenteral formulation only. • A lipoglycopeptide approved for skin and soft tissue infections with Staphylococcus aureus (including MRSA), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus dysgalactiae*, *Streptococcus anginosus* group, and vancomycin-sensitive Enterococcus faecalis.[14,15,b] • Insufficient data for diabetic foot infection to recommend.[1] • 1,500 mg x 1, OR 1,000 mg on day one, then 500 mg on day eight.[14,15] Reduce dose for CrCl <30 mL/min.[14,15] • Because it can be given as a one-time infusion, could be used for moderately ill patients with cellulitis who refuse hospitalization, or for an outpatient who might be nonadherent.[5]	**US**: $5,337.39/course of therapy **Canada**: ~$3,101.22
Daptomycin (*Cubicin* [Canada], *Cubicin RF* [Canada], generics)	• Parenteral formulation only. • A cyclic lipopeptide approved for complicated skin and soft tissue infections caused by *Staphylococcus aureus* (including MRSA), *Streptococcus pyogenes*, *Streptococcus agalactiae*, (US: *Streptococcus dysgalactiae* subspecies *equisimilis*, and vancomycin-sensitive *Enterococcus faecalis*).[16,17,b] • Usual adult dose is 4 mg/kg Q24H.[16,17] Reduce dose for CrCl <30 mL/min.[16,17] • Check creatine phosphokinase weekly (more often in kidney impairment or recent statin users) and monitor for muscle pain or weakness. Also monitor for peripheral neuropathy.[16,17]	**US**: ~$55/day (for 70 kg adult); **Canada**: ~$98; Approved duration of therapy seven to 14 days.[16,17]

Drug	Considerations and Dosing[b]	Cost (see footnote d)
Delafloxacin (*Baxdela* [US])	• Parenteral and oral formulations available • A **quinolone** approved for skin and soft tissue infections with *Staphylococcus aureus* (including MRSA), *Staphylococcus haemolyticus*, *Staphylococcus lugdunensis*, *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus anginosus* group, *Enterococcus faecalis*, *E. coli*, *Enterobacter cloacae*, *Klebsiella pneumoniae*, and *Pseudomonas aeruginosa*.[28,b] • Usual adult dose: 300 mg IV Q12H or 450 mg PO Q12H[28] • Reduce **IV** dose if eGFR <30 mL/min/1.73 m^2, due to accumulation of the IV vehicle.[16] Do not use oral or IV delafloxacin if eGFR <15 mL/min/1.73 m^2.[28] • Typical quinolone warnings: tendinitis/tendon rupture, peripheral neuropathy, central nervous system effects.[28] Interacts with di- and trivalent cations (e.g., in antacids, sucralfate, multivitamins, iron supplements).[28] • Does not appear to cause significant CYP450 drug interactions, QT prolongation, or phototoxicity.[28]	~$142/day (IV), ~$160/day (oral) Approved duration of therapy five to 14 days.[28]
Doxycycline	• Parenteral (US) and oral formulations available. • An option for MRSA coverage in diabetic foot infections or milder cellulitis.[1,6] • Usual adult dose: 100 mg PO Q12H[4]	**US**: ~$40/day (IV), <$10/day (oral) **Canada**: <$1/day (oral)
Linezolid (*Zyvox*, *Zyvoxam*, generics)	• Parenteral and oral formulations available. Approved duration of therapy 10 to 14 days (14 to 28 for VRE).[18,19] • An oxazolidinone approved for complicated skin and soft tissue infections (including diabetic foot infections without osteomyelitis) with *Staphylococcus aureus* (including MRSA), *Streptococcus pyogenes*, *Streptococcus agalactiae*.[18,19,b] Also approved for uncomplicated infections caused by MSSA and *S. pyogenes*, and infections caused by VRE.[18,19,b] • Usual adult dose 600 mg IV or PO Q12H.[18,19] • Myelosuppressive; CBC required at least weekly.[18,19] • Linezolid is an MAO inhibitor and has serotonergic effects; screen for drug interactions.[18,19]	**US**: ~$90/day (IV); ~$15/day (oral); **Canada**: ~$230 (IV), ~$40/day (oral) Approved duration of therapy 10 to 14 days (14 to 28 days for diabetic foot infection [Canada] or VRE)[18,19]
Minocycline	• An option for MRSA coverage in milder cellulitis.[6] • Oral formulation only. • Usual adult dose 100 mg PO Q12H.[4]	US: <$10/day **Canada**: <$5/day

Drug	Considerations and Dosing[b]	Cost (see footnote d)
Omadacycline (*Nuzyra* [US])	• Parenteral and oral formulation available • An aminoethylcycline (a type of tetracycline) approved for acute bacterial skin and soft tissue infections caused by *Staphylococcus aureus* (including MRSA), *Staphylococcus lugdunensis*, *Streptococcus pyogenes*, *Streptococcus anginosu*s group, *Enterococcus faecalis*, *Enterobacter cloacae*, and *Klebsiella pneumoniae*.[20,b] • Usual adult IV dose: 200 mg on day one (200 mg x 1 or two separate 100 mg doses), then 100 mg Q24H.[20] • Usual adult PO dose: 450 mg Q24H x 2 days, then 300 mg Q24H.[20] • Potential for permanent tooth discoloration if used during the last half of gestation up to age eight years, or reversible inhibition of bone growth if used during the second or third trimesters, up to age eight years.[20] Breastfeeding is not recommended during treatment and for four days after the last dose.[20] • Nausea (incidence up to 30%) and vomiting (incidence up to 17%) appear to be more common in patients after an oral loading dose.[20] • No dosage adjustments needed in patients with kidney or liver impairment.[20]	~$437/day (IV), ~$510/day (oral). Approved duration of therapy seven to 14 days.[20]
Oritavancin (*Orbactiv* [US])	• Parenteral formulation only (single dose).[21] • Approved for skin and soft tissue infections caused by *Staphylococcus aureus* (including MRSA), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus anginosus* group, *Streptococcus dysgalactiae*, and vancomycin susceptible Enterococcus faecalis.[21,b] • Long-acting (dose is 1,200 mg x 1, over three hours[c]).[21] Could be used for moderately ill patients with cellulitis who refuse hospitalization, or for an outpatient who might be nonadherent.[5] • Insufficient data for diabetic foot infections to recommend.[1] • IV heparin contraindicated for five days after use due to artificial increases in coagulation tests. Affects aPTT for up to five days and PT/INR for up to 12 hours after administration.[21] • May cause infusion reaction (flushing, itching, rash). Stop or slow infusion if this occurs.[21]	~$3,500/dose. Single-dose treatment.[21]
Tedizolid (*Sivextro* [US])	• Parenteral and oral formulations available. • An oxazolidinone approved for skin and soft tissue infections caused by *Staphylococcus aureus* (including MRSA), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus anginosus* group, and *Enterococcus faecalis*.[22,b] • Usual adult dose: 200 mg Q24H (IV or PO).[22] • May have less tendency for interactions with MAO inhibitors and selective serotonin reuptake inhibitors (SSRIs) than linezolid.[23] • No CBC monitoring required.[22]	~$350/dose (IV) ~$420/day (oral). Approved duration of therapy six days.[22]

Drug	Considerations and Dosing[b]	Cost (see footnote d)
Telavancin (*Vibativ* [US])	• Parenteral formulation only. • A lipoglycopeptide approved for complicated skin and soft tissue infections caused by *Staphylococcus aureus* (including MRSA), *Streptococcus pyogenes*, *Streptococcus agalactiae*, *Streptococcus anginosus* group, and vancomycin-sensitive Enterococcus faecalis.[24,b] • Usual adult dose: 10 mg/kg IV Q24H.[24] Reduce dose for CrCl ≤50 mL/min.[24] • May cause infusion reaction (flushing, itching, rash).[24] Stop or slow infusion if this occurs.[24] • May cause kidney toxicity; monitor serum creatinine.[24]	~$550/day (for 70 kg patient). Approved duration of therapy seven to 14 days.[24]
TMP/SMX	• Parenteral and oral formulations available. • An option for MRSA coverage in diabetic foot infections, and milder cellulitis.[1,5] • Usual adult PO dose: one or two double-strength tablets Q12H.[4] • Usual adult IV dose: 8 to 10 mg/kg (TMP component) divided Q8H to Q12H.[9] • Reduce for CrCl <30 mL/min.[9] • TMP may cause hyperkalemia.[9]	**US**: ~$50/day (for 320 mg IV Q12 H); <$10/day (oral) **Canada**: $80/day (for 320 mg IV Q12H [*Septra*]); <$1/day oral)
Vancomycin	• Parenteral formulation only. • An option for moderate or severe skin infections.[1,4-6] • Consider a target AUC 400 to 600 mcg/mL or trough 15 to 20 mcg/mL),[5] • May cause vancomycin infusion reaction (e.g., flushing, hypotension, itching) if infused too rapidly (e.g., >10 mg/min).[9]	**US**: <$60/day (for 1 g IV Q12 H) **Canada**: ~$40/day (for 1 g IV Q12H)

Abbreviations: CBC = complete blood count; ESBL = extended-spectrum beta-lactamase; H = hours; HIV = human immunodeficiency virus; MAO = monoamine oxidase; MRSA: methicillin-resistant *Staphylococcus aureus*; MSSA = methicillin-sensitive *Staphylococcus aureus*; PO = oral; Q = every; SIRS = systemic inflammatory response syndrome; TMP/SMX = trimethoprim/sulfamethoxazole; VRE = vancomycin-resistant *Enterococcus*

a. Clindamycin: *Streptococcus pyogenes* may be resistant to clindamycin; consider local resistance patterns and use with caution in severe cases.[6] MRSA resistance to clindamycin can be inducible, so some isolates that show sensitivity *in vitro* may not be clinically susceptible to clindamycin.[4] Erythromycin-resistant MRSA may also be resistant to clindamycin.[4] The lab can use the "D test" to check for inducible resistance.[5] There is also a concern for *Clostridioides difficile* colitis.[8]
b. Bacterial coverage noted in the chart may not reflect the full spectrum of coverage for each drug.
c. Dosing is for adults.
d. Wholesale acquisition cost (WAC) of adult dose denoted. US medication pricing by Elsevier, accessed January 2024.

Users of this resource are cautioned to use their own professional judgment and consult any other necessary or appropriate sources prior to making clinical judgments based on the content of this document. Our editors have researched the information with input from experts, government agencies, and national organizations. Information and internet links in this article were current as of the date of publication.

Levels of Evidence

In accordance with our goal of providing Evidence-Based information, we are citing the **LEVEL OF EVIDENCE** for the clinical recommendations we publish.

Level	Definition	Study Quality
A	Good-quality patient-oriented evidence.*	1. High-quality randomized controlled trial (RCT) 2. Systematic review (SR)/Meta-analysis of RCTs with consistent findings 3. All-or-none study
B	Inconsistent or limited-quality patient-oriented evidence.*	1. Lower-quality RCT 2. SR/Meta-analysis with low-quality clinical trials or of studies with inconsistent findings 3. Cohort study 4. Case control study
C	Consensus; usual practice; expert opinion; disease-oriented evidence (e.g., physiologic or surrogate endpoints); case series for studies of diagnosis, treatment, prevention, or screening.	

***Outcomes that matter to patients** (e.g., morbidity, mortality, symptom improvement, quality of life).

[Adapted from Ebell MH, Siwek J, Weiss BD, et al. Strength of Recommendation Taxonomy (SORT): a patient-centered approach to grading evidence in the medical literature. Am Fam Physician 2004;69:548-56. https://www.aafp.org/pubs/afp/issues/2004/0201/p548.html.]

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