Methicillin-resistant *Staphylococcus aureus* (MRSA), which was traditionally a nosocomially-acquired organism but now frequently occurs in the absence of healthcare exposure, is the predominant cause of suppurative skin and soft-tissue infections in many parts of the US.\(^1,2\) Community-associated MRSA usually causes furunculosis, purulent cellulitis, and abscesses, but necrotizing fasciitis, necrotizing pneumonia, and sepsis can also occur.

**ANTIMICROBIAL SUSCEPTIBILITY** — Community-associated MRSA strains have been susceptible *in vitro* to vancomycin, daptomycin, and linezolid, and usually to clindamycin, trimethoprim/sulfamethoxazole (TMP/SMX), and tetracyclines.\(^3\) Nosocomial strains of MRSA are often resistant to clindamycin, tetracyclines, and TMP/SMX. Resistance to fluoroquinolones is common and is increasing in both nosocomial and community settings.

**DRUGS FOR MRSA** — **Clindamycin** – Clindamycin has the potential advantage over other antimicrobials of inhibiting bacterial toxin production, but it may be more likely than other antimicrobials to cause *Clostridium difficile* enterocolitis. It should not be used if the erythromycin-clindamycin D-zone test for inducible clindamycin resistance is positive.

**TMP/SMX** – In adequate doses, TMP/SMX appears to be effective against community-associated MRSA, and resistance has been rare.

**Tetracyclines** – Minocycline and doxycycline have greater antistaphylococcal activity than other oral tetracyclines and have been effective clinically for treatment of community-associated MRSA skin and soft-tissue infections.

**Linezolid** – Even though it is not bactericidal against staphylococci, linezolid appears to be as effective as vancomycin for serious MRSA infections. It may have the advantage over vancomycin of inhibiting bacterial toxin production.

**Vancomycin** – Despite increasing reports of clinical failures, IV vancomycin is generally still the drug of choice for hospitalized patients with complicated MRSA skin and soft-tissue infections. Vancomycin-resistant MRSA isolates have been reported rarely.\(^4\)

**Daptomycin** – Only available parenterally, daptomycin is bactericidal for MRSA *in vitro* and appears to be as effective as vancomycin for treatment of MRSA skin and soft-tissue infections.

**Ceftaroline fosamil** – A broad-spectrum parenteral cephalosporin, ceftaroline is effective in treating MRSA skin and skin structure infections. It is the first beta-lactam approved by the FDA for such use.\(^5\)

**Telavancin** – A lipoglycopeptide derivative of vancomycin, parenteral telavancin appears to be as effective as vancomycin in treating MRSA skin infections, but

| Table 1. Oral Drugs for MRSA Skin and Soft-Tissue Infections\(^1\) |
|-----------------------|-----------------|-----------------|
| **Drug**              | **Usual Dosage** | **Cost**        |
| Clindamycin\(^4\) – generic | 300-450 mg q8h\(^3\) | $43.50          |
| Doxycycline\(^6\) – generic | 100 mg q12h\(^7\) | 54.60           |
| **Vibramycin (Pfizer)** |                 | 120.20          |
| Linezolid – *Zyvox* (Pfizer) | 600 mg q12h\(^4\) | 2711.40         |
| Minocycline\(^6\) – generic | 200 mg x 1, then | 55.40           |
| **Minocin (Onset Dermatologics)** | 100 mg q12h\(^5\) | 297.20          |
| Tedizolid\(^10\) – *Sivextro* (Cubist) | 200 mg once/d | 1770.00\(^11\) |
| TMP/SMX – generic | 2 DS tablets q12h\(^12\) | 4.00           |
| **Bactrim DS (AR Scientific)** |                 | 51.80           |

**Clindamycin** should not be used if the erythromycin-clindamycin D-zone test for inducible resistance is positive.

**Ceftaroline fosamil** is the first beta-lactam approved by the FDA for such use.

1. If coverage for both MRSA and ß-hemolytic streptococci is desired, a ß-lactam (e.g., amoxicillin) should be added to TMP/SMX, minocycline, or doxycycline.
2. Five to 10 days of treatment is recommended. Dosage adjustment may be needed for renal or hepatic impairment.
3. Approximate wholesale acquisition cost (WAC) for 10 days’ oral treatment with the lowest daily dosage.
4. Minocycline should not be used if the erythromycin-clindamycin D-zone test for inducible resistance is positive.
5. Pediatric dosage is 10-13 mg/kg q6-8h.
6. Not recommended for children >8 years old.
7. Dosage for children ≥8 years old is 2 mg/kg q12h.
8. Dosage for children ≥12 years old is 10 mg/kg q12h.
9. Dosage for children ≥8 years old is 4 mg/kg x1, then 2 mg/kg q12h.
12. Pediatric dosage is 4-6 mg/kg TCP q12h.
It causes more adverse effects, including taste disturbances, nausea, vomiting, and nephrotoxicity.

**Dalbavancin** – Dalbavancin is a new long-acting IV lipoglycopeptide antibiotic that is similar to telavancin with fewer adverse effects. It is given in 2 doses one week apart, which may permit outpatient treatment of some skin infections that previously required hospitalization.

**Tedizolid phosphate** – Administered once daily, tedizolid phosphate is a new IV and oral oxazolidinone antibacterial drug that may be more convenient to take than twice-daily linezolid. Whether it has a lower risk of thrombocytopenia than linezolid remains to be established.

**Oritavancin** – Recently approved by the FDA but not yet marketed, oritavancin is an IV lipoglycopeptide antibiotic similar to telavancin and dalbavancin that requires only a single dose.

**Tigecycline** – A broad-spectrum parenteral derivative of minocycline, tigecycline is active against MRSA, but it causes more adverse effects, including taste disturbances, nausea, vomiting, and nephrotoxicity.

**Vancomycin** – generic 15-20 mg/kg (max 2 g) q8-12h

1. A total of 7-14 days’ treatment (IV followed by PO) is generally recommended for most drugs. Dosage adjustment may be needed for renal or hepatic impairment.
2. Approximate wholesale acquisition cost (WAC) for 1 day’s treatment of a 75-kg patient with the lowest dosage. Source: AnalySource® Monthly (Selected from FDB MedKnowledge®) September 5, 2014. Reprinted with permission by FDB, Inc. All rights reserved. ©2014. www.fdbhealth.com/policies/drug-pricing-policy. Actual retail prices may be higher.
4. Cost of a 500-mg vial.
5. Dosage for children <12 years old is 10 mg/kg q12h and for those ≥12 years old is 10 mg/kg q12h.
6. May be associated with an increased risk of death when used to treat serious infections. Other antibiotics are preferred.
7. Initial pediatric dose is 15 mg/kg q8h.