Protocol for Patients Presenting with Abscess, Cellulitis, Furuncle, or Carbuncle

Any patient presenting with an area of tenderness, redness, swelling, or pain

Screen danger signs/symptoms
-systemic signs: temperature >38.0, heart rate >100, systolic blood pressure <90
-diabetes, malnutrition, HIV, renal failure, CHF, or cirrhosis
-history of not moving for long periods of times
-involvement of the face or hands, perineum, near joint, near rectum
-large pain to touch outside the area of redness
-bullae, ulcers, hemorrhage, or peeling of skin
-crepitation (gas formation under the skin)
-size of abscess beyond the typical experience range of the practitioner

Danger signs present
-immediate evaluation by a physician
-address predisposing/ immunocompromising conditions
-consider IV antibiotics: cefazolin 1gm IV Q8H
-for patients with penicillin allergy or evidence of anaerobic infection (crepitation or bullae), use Penicillin 3 million units IV q4h, plus Clindamycin 600 mg IV q6h
-if concern for necrotizing fasciitis, use both cefazolin and clindamycin as noted above
-consider surgical intervention for deeper soft tissue infection or abscess
-consider anticoagulation if clinically consistent with DVT
-24 hour observation

Single hair follicle with pus
Treat Furuncle
-make sure not multiple hair follicles forming carbuncle
-most are relieved with warm compresses for 15 minutes at a time to promote drainage of pus
-no antibiotics or incision and drainage necessary
-if resolved, no follow-up necessary
-patient should return to the clinic if it worsens or danger signs develop

Clear area of Erythema that is not gout or contact dermatitis
Treat Cellulitis/Erysipelas
-mark area of redness
-patient must return in 1-3 days
-elevate extremity
-treat underlying factors (tinea pedis, venous stasis ulcers, traumatic injury)
-consider tetanus vaccination if infection is due to a trauma
Preferred
-dicloxacillin 250 mg tablet PO QID ((25 mg/kg/day divided into four daily doses for pediatrics)
Penicillin Allergic (no immediate hypersensitivity)
-cephalexin (250 mg tablet PO QID (25 mg/kg/day divided into four daily doses for pediatrics)
Penicillin Allergic (immediate hypersensitivity)
-erythromycin 250mg PO QID

Localized, red, swollen, painful, pus-filled lesion
Treat Abscess or Carbuncle
Incision and Drainage
1) clean abscess and surrounding area with betadine
2) inject around (not into) the abcess with 1% xylocaine; wait 2 minutes
3) make short, deep incision
4) drain using external pressure
5) use hemostat to break loculations
6) pack lightly with gauze soaked with betadine
7) arrange packing so a piece of gauze rests external to wound
8) cover with bandage
Patient Counseling
-no need for antibiotics
-teach daily dressing changes
-patient must return in 1-3 days

Adapted from J Am Board Fam Pract 2004;17:S23–31. Pubmed ID: 15575027
Clin Infect Dis 2005; 41:1373-1406. PMID: 16231249; Can Fam Phys 2007; 53(10): 1680-4 PMID: 17934031

Notes (typically do not need to be printed out at the clinic; just for reference and documentation)
We group these skin infections together owing to common/similar presentation. We are developing additional protocols for other soft tissue infections such as impetigo, necrotizing infections, and bite wounds.

Abscesses do not typically require antibiotics. Having cellulitis around an abscess does not require treatment in the absence of either fever, toxic appearance, or immunocompromise, all of which were screened out in the protocol. The exceptions would be: 1. if it's huge and extending (say, >10 cm, although there isn't a formal cut-off). 2. if the abscess can't be drained well. There is anecdotal evidence, which has led to widespread use in our setting, that, owing to the difficulties with patient follow-up and wound hygiene, abscesses should be treated with antibiotics. We currently do not do so, as there is no evidence for it, and will focus on patient education and follow-up through community health workers to prevent adverse outcomes. However, we will be carefully documenting outcomes and may adjust as necessary.

Ciprofloxacin should not be used for cellulitis. Not only is it less studied (more in abscess than in cellulitis), but even if it works it should be spared b/c of its low genetic barrier to resistance, particularly when the other choices are adequate and well established. Although quinolones have convenient dosing, microbial susceptibility won't last long. Quinolones also should be used with extreme care in an area with TB.

Injecting lidocaine into an abscess is not appropriate. It's painful and ineffective. Rather, it is necessary to inject into tissue where the nerves are, not into a tight pocket of pus which: 1) becomes tense with pain; 2) isn't where the nerves are; 3) would make the lido incredibly diluted by pus anyways. A field bloc is not painful, requires only one to two injections, only the first of which is felt, produces much less pain. To quote from a surgery book on local for abscesses: "Injection into the abscess cavity is ineffective and can exacerbate discomfort by increasing the intracavitary pressure." This is also the recommended procedure from the WHO Essential surgical care.