

# Emergency Department Clinical Pathway for Children with Skin Soft Tissue Infection

See SSTI ED order

Well appearing child > 2 months\*  
with suspected SSTI

If toxic, see sepsis pathway,  
contact peds hospitalist, peds  
ID and/or peds surgery

No routine labs in uncomplicated cases.  
Obtain ultrasound if concern for abscess.

**Purulent**

**Non-purulent**

I&D with gram stain  
and culture

**MRSA  
risk factors**

**MRSA risk factors:**

Personal or family history  
Close/household contact  
Penetrating trauma  
Recurrent pustules/boils  
Failed Cephalexin > 48 hours  
IV drug use

**No MRSA  
risk factors**

**Review admission criteria\*\***

First line: PO TMP-SMX (PO for admission)  
Sulfa allergy: PO/IV Clindamycin  
Third line: PO Doxycycline (only ≥ 8yo)  
Severe: IV Vancomycin

**Review admission criteria\*\***

First line: PO Cephalexin/IV Cefazolin  
β-lactam allergy\*\*\*: PO/IV Clindamycin  
Severe: IV Vancomycin

**ED Discharge**

Duration of therapy: 5-7 days  
Follow up with PCP 1-2 days

**\*\*\*β-lactam allergy**

1. Avoid β-lactam if history of SERIOUS CUTANEOUS REACTION (serum sickness, EM, SJS/TEN or DRESS) to a β-lactam.
2. Assess for TYPE 1 ALLERGY to β-lactam: onset <1 hour, hives/urticaria, angioedema, laryngeal edema, shortness of breath, wheezing, hypotension, epinephrine requirement.
3. If the reaction is not consistent with a serious cutaneous reaction or type 1 allergy as above, proceed with first-line β-lactam. Consult Pharmacy, Allergy and/or Peds ID as needed.
4. If the patient has a type 1 allergy to a β-lactam, consult Pharmacy, Allergy and/or Peds ID for further management. Recommend outpatient referral to Allergy by PCP for discharges. Reactions are based on similarity of side chains.

**\*Exclusion criteria**

Immunocompromised  
Suspected foreign body  
Infection near surgical site  
Infection overlying a joint  
Orbital, periorbital or dental infection  
Perineal infection  
Bite wounds  
Adenitis

**\*\*Admission criteria**

Systemic symptoms (SIRS, toxic)  
Future need for I&D  
Large or rapidly expanding lesion  
Face, hands, feet, groin involvement  
Unable to tolerate oral antibiotics  
Inadequate pain control  
Failed outpatient treatment > 48 hours appropriate antibiotics

## Antibiotic Recommendations

	<b>Non-purulent</b> ( <i>S. pyogenes</i> , MSSA)	<b>Purulent (or MRSA risk factors*)</b> ( <i>S. aureus</i> )	<b>Duration</b>
<b>Outpatient</b> (ED discharge or transition IV to PO)	<p><b>First line:</b></p> <p>PO Cephalexin 50 mg/kg/day divided TID (max 500 mg/dose)</p> <p><b>Cephalosporin allergy:</b></p> <p>PO Clindamycin 10 mg/kg/dose TID (max 600 mg/dose)</p>	<p><b>First line:</b></p> <p>PO Bactrim 5 mg TMP/kg/dose BID (max 160 mg TMP/dose)</p> <p><b>Sulfa allergy:</b></p> <p>PO Clindamycin 10 mg/kg/dose TID (max 600 mg/dose)</p> <p><b>Third line (only ≥ 8 years old):</b></p> <p>25-45kg: PO Doxycycline 50 mg BID (50 mg capsules)</p> <p>&gt;45kg: Doxycycline 100mg BID (100mg capsules)</p>	<p><b>5-7 days</b></p> <p>Follow up with PCP before stopping antibiotics</p>
<b>Inpatient</b> (ED admission)	<p><b>First line:</b></p> <p>IV Cefazolin 100 mg/kg/day divided Q8H (max 2 g/dose)</p> <p><b>Cephalosporin allergy:</b></p> <p>IV Clindamycin 13 mg/kg/dose Q8H (max 900 mg/dose)</p> <p><b>Severe:</b></p> <p>IV Vancomycin 15 mg/kg/dose Q6H (max 3.6 g/day) Consult Pharmacy to dose, consult Peds ID prior to use</p>	<p><b>First line:</b></p> <p>PO Bactrim 5 mg TMP/kg/dose Q12H (max 160 mg TMP/dose)</p> <p><b>Sulfa allergy:</b></p> <p>IV Clindamycin 13 mg/kg/dose Q8H (max 900 mg/dose)</p> <p><b>Severe:</b></p> <p>IV Vancomycin 15 mg/kg/dose Q6H (max 3.6 g/day) Consult Pharmacy to dose, consult Peds ID prior to use</p>	<p><b>5-7 days</b></p> <p>Follow up with PCP before stopping antibiotics</p>

\*MRSA risk factors: Personal or family history, close/household contact, penetrating trauma, recurrent pustules/boils, IV drug use and failed Cephalexin > 48 hours

## Pathogen Susceptibility

	<b>S. pyogenes</b>	<b>MSSA</b>	<b>MRSA (19% of S. aureus)</b>
<b>Cefazolin, Cephalexin</b>	100	100	0
<b>Clindamycin</b>	94	71	65
<b>TMP-SMX</b>	n/a	99	98
<b>Doxycycline</b>	n/a	n/a	n/a
<b>Vancomycin</b>	100	100	100

Updated: 2020 Lurie antibiogram

## Literature

1. Jaggi P, Wang L, Gleeson S, Moore-Clingenpeel M, Watson JR. Outpatient antimicrobial stewardship targets for treatment of skin and soft-tissue infections. *Infect Control Hosp Epidemiol*. 2018;39(8):936-940. doi:10.1017/ice.2018.124
2. Liu C, Bayer A, Cosgrove SE, et al. Clinical practice guidelines by the infectious diseases society of america for the treatment of methicillin-resistant *Staphylococcus aureus* infections in adults and children [published correction appears in *Clin Infect Dis*. 2011 Aug 1;53(3):319]. *Clin Infect Dis*. 2011;52(3):e18-e55. doi:10.1093/cid/ciq146
3. Nelson CE, Chen A, McAndrew L, Tay KY, Balamuth F. Management of Skin and Soft-Tissue Infections Before and After Clinical Pathway Implementation. *Clin Pediatr (Phila)*. 2018;57(6):660-666. doi:10.1177/0009922817738329
4. Schuler CL, Courter JD, Conneely SE, et al. Decreasing Duration of Antibiotic Prescribing for Uncomplicated Skin and Soft Tissue Infections. *Pediatrics*. 2016;137(2):e20151223. doi:10.1542/peds.2015-1223
5. Stevens DL, Bisno AL, Chambers HF, et al. Practice guidelines for the diagnosis and management of skin and soft tissue infections: 2014 update by the Infectious Diseases Society of America [published correction appears in *Clin Infect Dis*. 2015 May 1;60(9):1448. Dosage error in article text]. *Clin Infect Dis*. 2014;59(2):e10-e52. doi:10.1093/cid/ciu444
6. Talan DA, Mower WR, Krishnadasan A, et al. Trimethoprim-Sulfamethoxazole versus Placebo for Uncomplicated Skin Abscess. *N Engl J Med*. 2016;374(9):823-832. doi:10.1056/NEJMoa1507476
7. Trenchs V, Hernandez-Bou S, Bianchi C, Arnan M, Gene A, Luaces C. Blood Cultures Are Not Useful in the Evaluation of Children with Uncomplicated Superficial Skin and Soft Tissue Infections. *Pediatr Infect Dis J*. 2015;34(9):924-927. doi:10.1097/INF.0000000000000768
8. Zwemer E, Stephens JR. Things We Do For No Reason: Blood Cultures for Uncomplicated Skin and Soft Tissue Infections in Children. *J Hosp Med*. 2018;13(7):496-499. doi:10.12788/jhm.2984
9. Children's Hospital of Philadelphia, L. McAndrew, MD; S. Helman, MSN; C. Christian, MD; L. Utidjian, September 2020. Emergency Department Cellulitis/Abscess Pathway. Available from: <https://www.chop.edu/clinical-pathway/cellulitis-abscess-suspected-emergent-care-clinical-pathway>.