

Guideline/Protocol Title:	UCSF Medical Center Guideline for the Management of Suspected Skin and Soft Tissue Infections in Adults
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P&T Approval Date:	
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PURPOSE/SCOPE:	<ul style="list-style-type: none"> • This guideline establishes evidence-based consensus standards for management of suspected skin and soft tissue infections (SSTI) among adult outpatients and hospitalized inpatients at UCSF Medical Center. • This guideline is based on review of national guidelines, primary literature, and the multi-disciplinary perspectives of experienced providers at UCSF Medical Center. • Practice guidelines are intended to assist with clinical decision-making for common situations but cannot replace personalized evaluation and management decisions based on individual patient factors. • Guidelines will be updated every 2 years
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EXECUTIVE SUMMARY
The SSTI Guideline is presented in four parts as shown in the flowsheets on pages 6-9: management of purulent SSTI, management of non-purulent SSTI, management of lower extremity ulcerative SSTI, and management of recurrent/refractory SSTI.

BACKGROUND / INTRODUCTION
The SSTI Guideline represents a multi-departmental effort to establish best-practices in the treatment of SSTI, reduce practice variation, and provide a framework to help providers address challenges in the treatment of SSTI. This guideline focuses on antibiotic selection and treatment duration for purulent SSTI, non-purulent SSTI, and ulcerative SSTI. In addition, guidance on the management of recurrent/refractory SSTI is also provided.

Intended Population:

- **Inclusion:** Outpatients or hospitalized inpatients with suspected SSTI, including non-purulent SSTI, purulent SSTI, necrotizing SSTI, and ulcerative SSTI.
- **Exclusion:** SSTI with underlying hardware, bone/joint infections, bite-associated infections, infections associated with immersion, infections associated with penetrating trauma, orbital/periorbital cellulitis, perianal/perineal/perirectal infections, sacral decubitus ulcer infections, neutropenic patients (ANC < 500), and surgical site infections (superficial, deep, organ space).

Definitions:

- Non-purulent SSTI: Cellulitis or erysipelas in the absence of abscess or purulent drainage
- Purulent SSTI: Abscess or cellulitis with pustules
- Ulcerative SSTI: Chronic skin ulceration of the lower limb, including those ulcers associated with diabetes or vascular insufficiency (e.g., peripheral arterial disease, venous insufficiency)
- Recurrent/refractory SSTI: More than 3 occurrences per year of either non-purulent or purulent SSTI

Diagnosis and Microbiologic Testing:

Purulent and Non-Purulent SSTI:

- Bacterial Gram-stain and culture are recommended for patients who undergo incision and drainage or surgical debridement.
 - Cultures should be obtained, where appropriate, prior to starting empiric antimicrobial therapy in stable patients.
 - Wound swabs do not correlate well with deep cultures and should be avoided
- In the absence of systemic signs of infection, blood cultures are not recommended.
- Consult ID and/or Dermatology if patient is not clinically responding to recommended treatment.
- Imaging is only indicated if a patient is failing therapy (to evaluate for deep abscess) or if there is concern for necrotizing infection. In the latter case, surgery should not be delayed by imaging studies if suspicion is high.

Ulcerative SSTI:

- Clinical diagnosis involves at least 2 signs or symptoms of infection (see **Table 1**)
- Classify infection severity based on IDSA/Society for Vascular Surgery (SVS) Wound, Ischemia, and Foot Infection (WIFI) criteria (see **Table 1**)
- Common pathogens:
 - Gram positive cocci (GPCs), especially staphylococci, are the most common pathogens
 - Gram negative rods (*Escherichia coli*, *Klebsiella pneumoniae*, *Proteus* spp.) are common co-pathogens in chronic infections or infections following prior antibiotic treatment
 - Anaerobes are not major pathogens in mild to moderate infections; may be co-pathogens in ischemic or necrotic wounds
 - Common pathogens in diabetic foot osteomyelitis:
 - *Staphylococcus aureus*, *Escherichia coli*, Group B *Streptococcus* (frequent co-pathogen with *Staph aureus*), *Klebsiella pneumoniae*, *Proteus* spp. and less commonly *Pseudomonas aeruginosa*
- Obtaining cultures:
 - Cultures should not be sent for clinically uninfected wounds
 - For infected wounds, obtain a deep tissue culture (in the operating room) for aerobic and anaerobic culture. If debridement is not an option, consider obtaining a superficial wound

culture. If *Staph aureus* or Group A *Streptococcus* is isolated, treat these as pathogens (other bacteria cultured superficially are likely contaminants).

- Obtain cultures prior to starting empiric antibiotics, if possible
- Decisions about remaining infected tissue after debridement should be based on both intra-operative appearance of bone as well as margins on path

Reference #	Citation
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Revision History

Revision Date	Update(s)
9.2024	Ertapenem recommendations for ZSFG removed due to changes in hospital restriction policy
1.2026	Revisions to reflect new institutional NSTI guidance and growing Streptococcal clindamycin resistance

Table I: IDSA/SVS Wifi Wound Severity Classification

Clinical manifestation of infection	SVS Wifi	IDSA Infection Severity
No symptoms or signs of infection	0	Uninfected
Infection present, as defined by the presence of at least 2 of the following: <ul style="list-style-type: none"> • Local swelling or induration • Erythema >0.5 to ≤2 cm around the ulcer • Local tenderness or pain • Local warmth • Purulent discharge (thick, opaque to white, or sanguineous secretion) Local infection involving only the skin and the subcutaneous tissue (without involvement of deeper tissues and without systemic signs as described below) Exclude other causes of an inflammatory response of the skin (e.g., trauma, gout, acute Charcot neuro-osteoarthropathy, fracture, thrombosis, venous stasis)	1	Mild
Local infection (as described above) with erythema >2 cm, or involving structures deeper than skin and subcutaneous tissues (e.g., abscess, osteomyelitis) and No systemic inflammatory response signs (as described below)	2	Moderate
Local infection (as described above) with signs of SIRS, as manifested by 2 or more of the following: <ul style="list-style-type: none"> • Temperature >38° or <36°C • Heart rate >90 bpm • Respiratory rate >20 breaths/min or PaCO₂ <32 mm Hg • WBC >12,000 or <4,000 or 10% bands 	3	Severe

Exclusions:
SSTI Location:
 - Underlying hardware, bone/joint infection, surgical site infection, orbital/periorbital cellulitis, perianal/perineal/perirectal infection
Injury Context:
 - Bite-associated infection, infection associated with immersion or penetrating trauma
Patient Factors:
 - Neutropenia (ANC < 500)

Separate oral antibiotic coverage for MRSA and Strep spp is not recommended for purulent SSTI

Management of Purulent SSTI (abscess/pustule)
 *For ulcerative SSTI, refer to separate Ulcerative SSTI guideline

Concern for necrotizing infection?
 STOP! Call appropriate surgical service and consult ID

Start IV Linezolid + Piperacillin-tazobactam
 See Necrotizing Soft Tissue Infection Guidelines

Outpatient Treatment

Drainable abscess?

Yes No

Perform I&D

Start PO TMP-SMX¹
 If sulfa allergy: Linezolid

Responding?

Yes No

Complete 5 days total treatment

Ultrasound to evaluate for abscess
 Consider admission

Choose alternative PO antibiotic for patients without abscess who are not admitted

Clinical trial data support the addition of TMP-SMX s/p I&D. However, most patients will be cured regardless of whether antibiotics are used. Benefits of antibiotic therapy should be weighed against the possible risks.

¹In patients with baseline elevations in serum potassium or creatinine, consider using Linezolid rather than TMP-SMX.

CDU Treatment
 *Refer to CDU guideline for triage decisions

Drainable abscess?

Yes No

Perform I&D, send culture/sensitivity

Start IV vancomycin

Improvement after 24 hours?

Yes No

Start IV vancomycin

Switch to PO TMP-SMX¹
 If sulfa allergy: Linezolid
 Duration: 5 days from start of vancomycin
 *ED staff to follow-up cultures

Switch to PO TMP-SMX¹
 If sulfa allergy: Linezolid
 Duration: 5 days from start of vancomycin

Inpatient Treatment

Drainable abscess?

Yes No

Perform I&D, send culture/sensitivity

Start IV vancomycin

Responding?

Yes No

Start IV vancomycin

Culture results available?

Yes No

Switch to PO TMP-SMX or linezolid (if TMP-SMX given prior)
 Duration: 5 days from start of vancomycin

Consider ID consultation

Responding?

Yes No

Switch to PO antibiotic based on culture
 Duration: 5 days from start of vancomycin

Consider ID consultation

Exclusions:

SSTI Location:
 - Underlying hardware, bone/joint infection, surgical site infection, orbital/periorbital cellulitis, perianal/perineal/perirectal infection

Injury Context:
 - Bite-associated infection, infection associated with immersion or penetrating trauma

Patient Factors:
 - Neutropenia (ANC < 500)

Bilateral cellulitis is rare
 For non-necrotizing cellulitis, imaging is only necessary in the case of poor response to antibiotic therapy
 In the absence of systemic signs of infection, routine blood cultures are not recommended
 Separate oral antibiotic coverage for MRSA and *Strep* spp is not recommended for non-purulent SSTI

Management of Non-Purulent SSTI (cellulitis/erysipelas)

*For ulcerative SSTI, refer to separate Ulcerative SSTI guideline

Concern for necrotizing infection?
 STOP! Call appropriate surgical service and consult ID

Start IV Linezolid + IV Piperacillin-Tazobactam
 See Necrotizing Skin and Soft Tissue Guidance (IDMP)

Outpatient Treatment¹

PO cephalixin
 If beta-lactam allergy (BLA):
 TMP/SMX

Responding?²

Yes: Continue to complete 5 days
 No: Image for abscess

Abscess present?³

Yes: Refer to Purulent SSTI guideline
 No: Evaluate adherence, Adjuvant therapies (see below), Consider alternative diagnosis, Consider admission

CDU Treatment¹
 *Refer to CDU guideline for triage decisions

IV cefazolin³

Improvement within 24 hours?

Yes: Switch to PO cephalixin
 Duration: 5 days from start of cefazolin
 No: [Flow to Inpatient Treatment]

Inpatient Treatment¹

IV cefazolin³

Responding?²

Yes: Switch to PO cephalixin
 Duration: 5 days from start of cefazolin
 No: Switch to IV vancomycin, Image for abscess, Adjuvant therapies (see below left), Consider alternative diagnosis

Responding?²

No: ID/Derm consultation
 Yes: Switch to PO TMP-SMX⁴
 If sulfa allergy: Linezolid
 Duration: 5 days from start of vancomycin

¹ MRSA is rarely implicated in non-purulent cellulitis. Cases for which MRSA coverage might be considered include cellulitis associated with penetrating trauma, injection drug use, and MRSA nasal colonization.

² Response to antibiotic therapy may not be immediate, and erythema may progress in the first 24-48 hours. Failure to improve within the first 72 hours is not necessarily indicative of clinical failure.

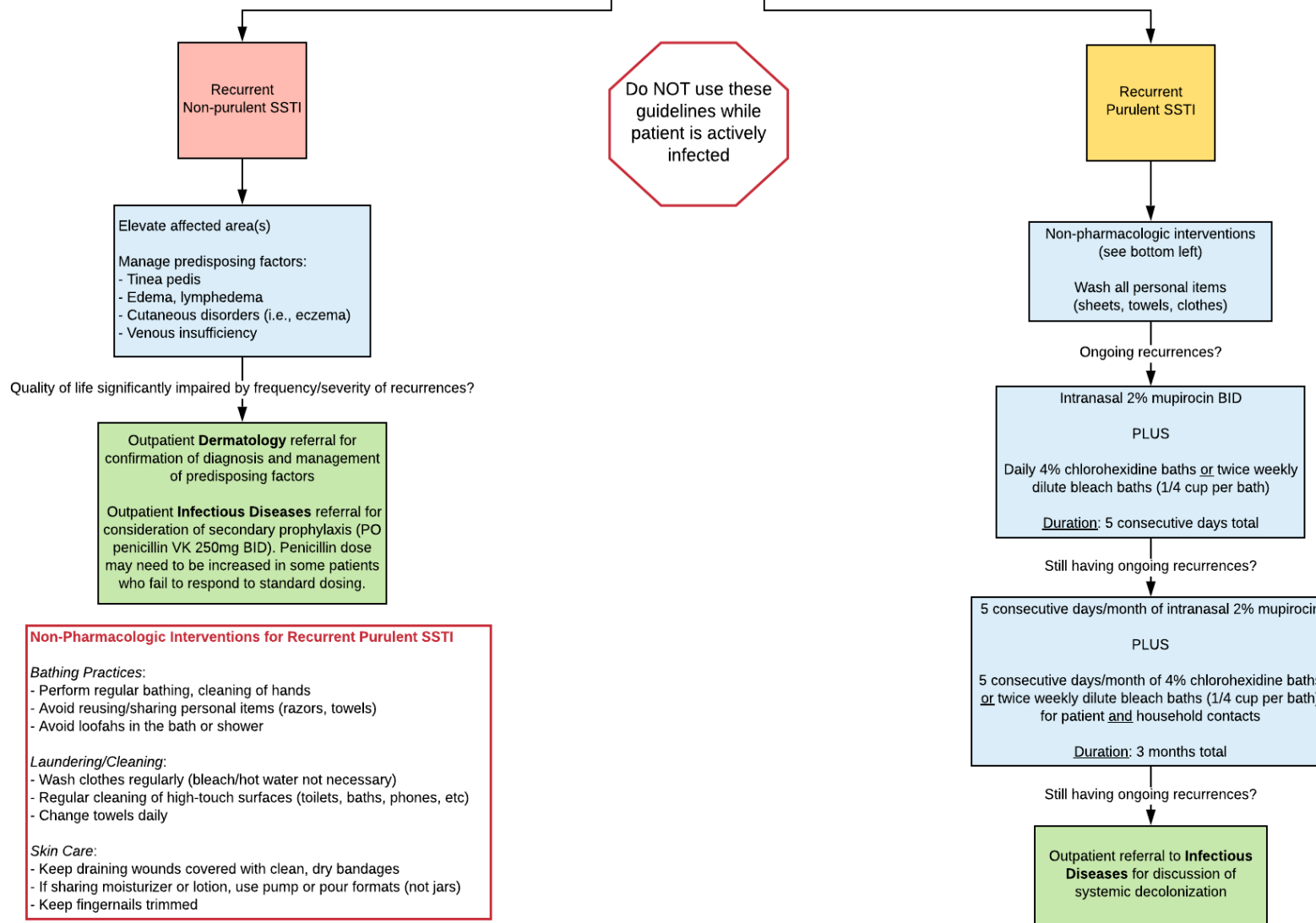
³ If beta-lactam allergy present, refer to UCSF Inpatient Beta-lactam Allergy Guideline

⁴ In patients with baseline elevations in serum potassium or creatinine, consider using Linezolid rather than TMP-SMX.

Adjuvant Therapys for Non-Purulent SSTI:

- Leg elevation
- Treatment of tinea pedis
- Adequate foot care/toenail clipping

Management of Recurrent SSTI (3 or more episodes/year)



Exclusions:

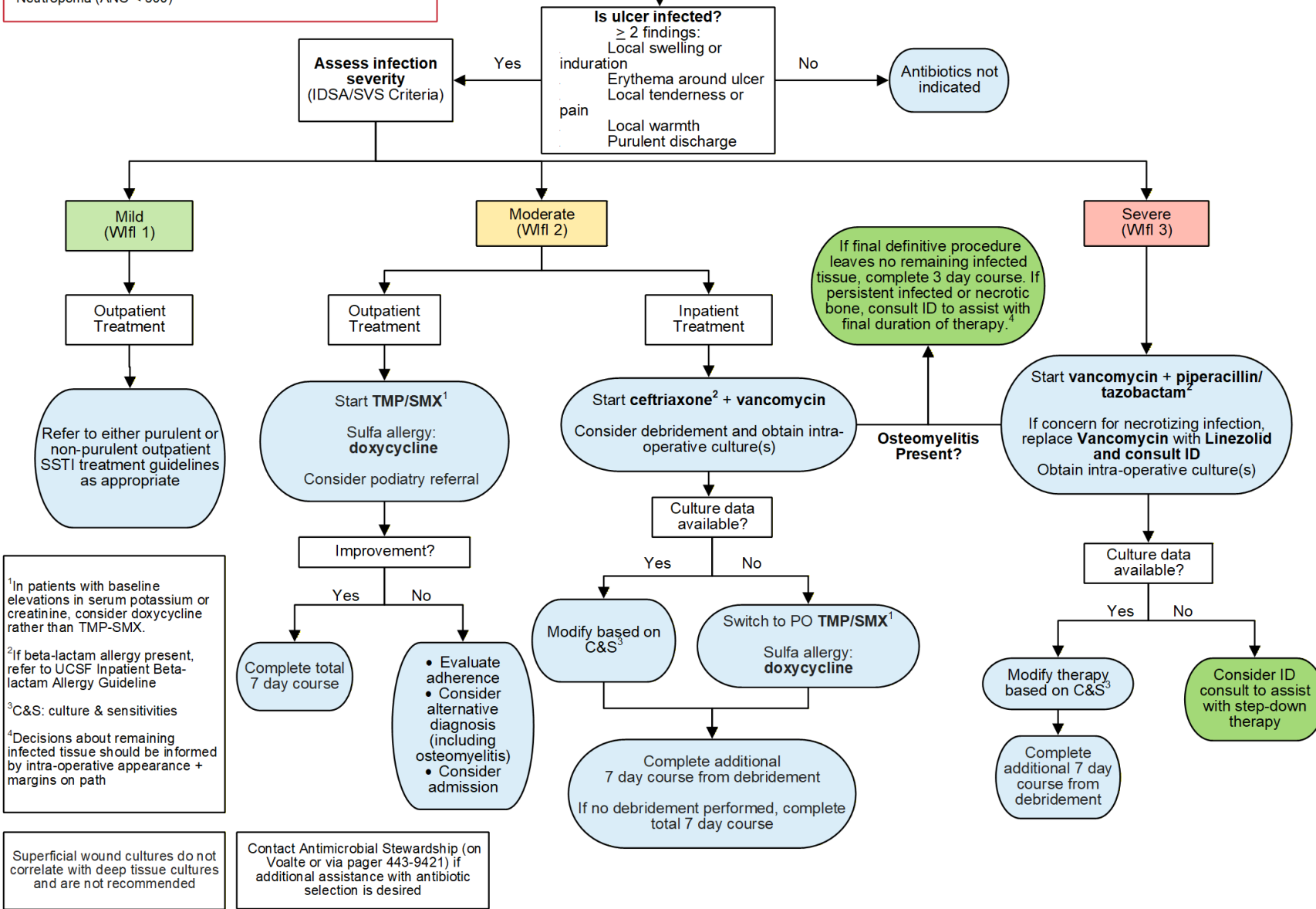
SSTI Location:

- Underlying hardware, bone/joint infection, surgical site infection, sacral decubitus ulcer infection, perianal/perineal/perirectal infection

Patient Factors:

- Neutropenia (ANC < 500)

Management of Lower Extremity Ulcerative SSTI



¹In patients with baseline elevations in serum potassium or creatinine, consider doxycycline rather than TMP-SMX.

²If beta-lactam allergy present, refer to UCSF Inpatient Beta-lactam Allergy Guideline

³C&S: culture & sensitivities

⁴Decisions about remaining infected tissue should be informed by intra-operative appearance + margins on path

Superficial wound cultures do not correlate with deep tissue cultures and are not recommended

Contact Antimicrobial Stewardship (on Voalte or via pager 443-9421) if additional assistance with antibiotic selection is desired

Appendix

SSTI Dosing, Non-dialysis			
Drug	CrCl > 50 mL/min	CrCl 15-50 mL/min	CrCl < 15 mL/min
Cephalexin	500mg PO TID	250mg PO TID	250mg PO daily
Clindamycin	300-450mg PO TID	300-450mg PO TID	300-450mg PO TID
Doxycycline	100mg PO BID	100 mg PO BID	100mg PO BID
TMP/SMX DS 800/160 mg	40-59kg: 1 DS tab PO BID 60-70kg: 1 DS tab PO TID >80kg: 2 DS tab PO BID	40-59kg: 1 DS tab PO daily 60-79kg: 1 DS tab PO BID >80kg: 1 DS tab PO TID	Use alternative antibiotic

SSTI Dosing in Intermittent and Continuous Hemodialysis		
Drug	Intermittent Hemodialysis	Continuous Renal Replacement Therapy
Cephalexin	500mg PO daily (post-HD on HD days)	Use dosage for CrCl>50
Clindamycin	300mg PO TID	300mg PO TID
Doxycycline	100mg PO BID	100mg PO BID
TMP/SMX DS 800/160 mg	2.5-5mg/kg/day TMP component*	5mg/kg/day TMP component*

*Use adjusted body weight