# CPO Cellulitis Pathway- Adult

## Purpose

To provide support for IV therapy management in primary care following failure of oral antimicrobial therapy. The below information is to be used for guidance only and should not replace clinical judgment. This pathway includes Bacterial cellulitis and Erysipelas

## Eligibility Criteria

- Hawke's Bay resident
- Age 15 years and over
- Would normally have been referred to Te Whatu Ora-Hawkes Bay acutely
- Can be managed safely in primary care
- Completed adequate trial of oral antibiotics (as above)

## Consider

- General health especially cognitive capacity is suitable
- Pain level
- Social circumstances are supportive of CPO IV therapy
- Access to a telephone
- Agrees to home elevation of affected limb

## Exclusions

- Red Flags-as below
- Complex diabetic foot infections
- eGFR <35
- BMI >40 or weight >150kg, discussion with Infectious Disease physician for advice
- Mild cellulitis (suitable for oral antibiotic- first choice or boosted. See recommendations for oral antibiotics below)
- Abscess- needs surgical debridement
- Concern for sepsis

## Funding

Referral and Claiming is through the **Halcyon Provider Portal > CPO Programmes > Acute Care > Cellulitis**. Funding is fee for service.

## RED FLAGS

Use SIRS criteria below to screen for sepsis: if >2 positive criteria or there is clinical concern, contact Te Whatu Ora – Hawke's Bay and refer to appropriate service below:

### Refer to:

*Medical registrar on-call via pager 3610*
*AAU physician ext. 5499 or Surgical/orthopaedic specialty via switchboard*

| Patient meets SIRS criteria if they exhibit two or more of the following: |
|---|
| Temperature <36°C or >38°C |
| Heart Rate > 90 |
| Respiratory rate > 20 |
| WCC > 12 (x10(9)/L) |

- Unstable co-morbidities
- Limb-threatening infection due to vascular compromise
- Severe life-threatening infection such as necrotising fasciitis
- Suspected necrotising fasciitis (see note below)
- Compartment syndrome
- Post-operative surgical wounds
- Severe systemic illness, e.g. fever, or nausea, and vomiting
- Co-morbidity that may complicate or delay healing e.g. peripheral vascular disease, chronic venous insufficiency, morbid obesity, immunosuppression, intravenous drug use
- Periorbital infection
- Cellulitis that has spread from an adjacent structure (e.g. osteomyelitis) or through the blood (bacteraemia) is a serious concern

NOTE: Necrotising fasciitis or Myonecrosis

Generalised signs of necrotising fasciitis or myonecrosis can be indistinguishable from cellulitis, but is strongly suggested by:

- Dusky purple or black discolouration
- Tense odema
- Cutaneous numbness
- Skin necrosis with or without crepitus
- Pain - out of proportion to clinical signs

## Oral Antibiotic Treatment

**Oral Antibiotic Treatment- First Choice**:
(dosing for normal renal function)
***(NOT FUNDED THROUGH CPO)***

- Flucloxacillin- 500mg to 1g, four times daily, for seven days
  OR (if penicillin-related rash))
- Cefalexin- 500mg, four times daily, for seven days

**Antibiotic Treatment if type 1 penicillin allergy:**

- Erythromycin ethinyl succinate - 800mg, twice daily, for seven days OR
- Roxithromycin - 150mg, twice daily or 300mg daily for seven days

**OR If MRSA present:**

- Co-trimoxazole - 160+800mg (two tablets), twice daily, for five to seven days OR
- Clindamycin- 450mg three times daily (authorization required from Infectious Disease Physician)

**Boosted Antibiotic Treatment:**
***(NOT FUNDED THROUGH CPO)***

If No Improvement Following Oral Antibiotic Treatment- First Choice as above:
Consider using probenecid in combination with antibiotics.

- Probenecid 500mg three times daily for seven days WITH
- Flucloxacillin 1g, three times daily, for seven days

OR

- Probenecid 500mg three times daily for seven days WITH
- Cefalexin 1g, three times daily, for seven days

OR
Start IV Cefaxolin as per the CPO Cellulitis pathway if appropriate (Funded under CPO)

See contraindications for Probenecid Guide on page 5 of this pathway

## IV Management

- Outline area of erythema and daily reassessment to check not extending. Area of erythema may be slow to reduce but check for other signs of improvement, less oedema, less heat, less pain
- Discontinue oral antibiotics when IV cefazolin commenced.
- Intravenous Injection: Administer solution directly into vein or through tubing. Dilute the reconstituted 2g of Cefazolin in a minimum of 10 mL of Sterile Water for Injection. Inject solution slowly over a period of 3 to 5 minutes. Do not inject in less than 3 minutes. (https://www.medsafe.govt.nz/profs/datasheet/c/cefazolinaftinj.pdf
- Arrange oral antibiotic to begin with final dose of IV antibiotic. (Generally flucloxacillin, 1g 6 hourly if normal renal function, 1 hour before or 2 hours after meals)
- Emphasise the importance of rest, elevation and not going to work while receiving treatment
- Transport available through Hastings Taxis if patient requires transport to general practice for IV therapy- provide CPO number to taxi company

## Cefazolin Dosage

| | eGFR | |
|---|---|---|
| **Weight** | **>50mL/min** | **30-50mL/min** |
| Not obese<br>(Weight <120kg or BMI<40) | • Cefazolin: 2g ONCE daily<br>• Probenecid: 500mg TWICE daily | • Cefazolin: 2g ONCE daily<br>• Probenecid: 500mg ONCE daily |
| Obese<br>(Weight >120kg or BMI>40) | • Cefazolin: 3g ONCE daily<br>• Probenecid: 500mg TWICE daily | • Cefazolin: 2g ONCE daily<br>• Probenecid: 500mg TWICE daily |

If the patient has a contra-indication to probenecid administer:

| | eGFR | |
|---|---|---|
| **Weight** | **>50mL/min** | **30-50mL/min** |
| Not obese<br>(Weight <120kg or BMI<40) | • Cefazolin: 2g TWICE daily | • Cefazolin: 2g TWICE daily |
| Obese<br>(Weight >120kg or BMI>40) | • Cefazolin: 3g TWICE daily | • Cefazolin: 2g TWICE daily |

## Non- response to IV Antibiotics

Three days is the standard length of antibiotic administration for cellulitis in the CPO guideline. If patient not responding:

- Consider extending IV therapy for a further 3 days.
- Consider blood tests for FBC and creatinine to help guide management, particularly for elderly or high-risk patients.
- Do not exceed more than six days without consultation with Infectious Diseases Physician at Te Whatu Ora – Hawke's Bay
- Consider alternative diagnoses.

### Preventing Recurrent Cellulitis

People who experience frequently recurring cellulitis, such as those with lymphoedema may consider a trial of prophylactic antibiotics (e.g. amoxicillin 500mg twice daily or doxycycline 100mg daily) on a long-term basis to protect against further infection. This must be seen as an option of last resort; as long term antibiotics are not without obvious risks.

### Medications

1. CPO will fund the prescription co-payment for patients for the specified medications prescribed under this pathway. These are cefazolin and probenecid.
2. **All prescriptions MUST include the CPO reference number HB……**

## ED Back Referrals for Cellulitis –Adult (CPO FUNDED)

- Patients presenting to the Te Whatu Ora – Health New Zealand Te Matau a Māui, Hawke's Bay (Te Whatu Ora – Hawke's Bay) Emergency Department (ED) with cellulitis who require IV antibiotics will be assessed and a decision made as to the appropriateness of the patient completing IV therapy in primary care.
- An IV line will be sited, the first dose of antibiotic (cefazolin) administered and the patient referred back to their GP/NP or Urgent Care Centre
- **The GP/NP or Urgent Care Centre will be required to complete the CPO referral in Halcyon for claiming purposes, as ED has no access to Halcyon.**
- Patients receive the remainder of their treatment as per the CPO Guidelines
- An electronic discharge summary (EDS) will be sent to the patients GP/NP, or the Urgent Care Center where the patient has been advised to attend
- 8am-5pm: Phone call to GP/practice nurse to discuss the patient and request the GP continuation of treatment under the CPO Cellulitis Pathway
- 5pm-8am: the patient will be asked to attend the nominated GP surgery or Urgent Care, whichever is most appropriate, the following day for their next dose of antibiotic and continuation of treatment under the CPO Cellulitis Pathway
- A probenecid 'take home pack' will be provided to the patient from ED

## Probenecid Guide

Contra-indications:

- History of blood dyscasias
- Uric acid kidney stones
- Acute gout attack
- Chronic kidney disease (eGFR<30ml/min)
- Pregnancy/breastfeeding

## Caution:

- History of peptic ulcer disease

**Interactions:** (not a complete list, consult a pharmacist if concerned)

Methotrexate: Do not use probenecid for patients on methotrexate. (Probenecid increases methotrexate levels in the body.)

Zidovudine: Do not use probenecid for patients on zidovudine. (Probenecid increases zidovudine levels in the body.)

Mycophenolate: Do not use probenecid for patients on mycophenolate. (Probenecid may increase mycophenolate levels in the body.)

NSAIDs: Use the lowest dose necessary. (Probenecid may increase the levels of NSAIDs in the body)

Aspirin: There is no significant interaction with low dose aspirin for cardiovascular prevention, however patient should be advised to not use aspirin at doses used for pain relief.
Paracetamol: Use the lowest dose necessary. (Probenecid may increase the formation of toxic metabolites of paracetamol)

Lorazepam: A 50% dose reduction of lorazepam should be considered when concurrent therapy is employed. Be alert for increases in lorazepam effects like sedation and antegrade amnesia. (Probenecid increases the levels of lorazepam in the body.)

Nitrazepam: Be alert for increases in nitrazepam effects (sedation, antegrade amnesia) and adjust the nitrazepam dose if necessary. Probenecid may increase the levels of nitrazepam in the body)

## Advice

- Ensure adequate fluid intake (about 2–3 litres daily)
- Probenecid is prohibited at all times by the World Anti-Doping Agency and should not be prescribed to elite athletes