

# General

## Mild and moderate allergic reactions

### HMP Urticaria, allergic rhinitis - adult/child Hives, hay fever

#### 1. May present with

##### Hives (urticaria)

- Itchy rash - blotches or raised red lumps:<sup>1</sup>
  - vary in size from pinhead to dinner plate. When first appear, can look like mosquito bites
  - usually disappear within minutes to hours in one spot, but may come and go
- ± angio-oedema - deeper swellings mostly affects face and lips:<sup>1,2</sup>
  - often bigger, last longer and may itch less ± hurt or burn
- ± symptoms of viral infection - most common cause of hives in children<sup>1,2</sup>
- **Note:** if hives occur within 1–2 hours of exposure (eg food, medicines, stings) and disappear within 6–8 hours, is likely an allergic reaction. Localised hives may be a contact allergy<sup>1</sup>

##### Hay fever (allergic rhinitis)

- Clear rhinorrhoea, sneezing, nasal blockage, nasal itch<sup>3,4</sup>
- Darkened circles around eyes ± watery, red eyes<sup>3</sup>
- Itchy throat, frequent need to clear throat<sup>3</sup>
- **Note:** symptoms can be confused with recent URTI

#### 2. Immediate management

- If hives, check for ANY signs of anaphylaxis. If any treat urgently as per [Anaphylaxis, p. 82](#)

##### Signs of Anaphylaxis - any ONE of the following:<sup>5</sup>

- Difficult/noisy breathing
- Wheeze or persistent cough
- Swelling of tongue
- Persistent dizziness or collapse
- Swelling/tightness in throat
- Pale and floppy (young children)
- Difficulty talking ± hoarse voice
- Abdominal pain, vomiting

- Suspect [Foreign body in nose, p. 194](#) in child with any nasal occlusion, facial swelling ± pain, or smelly, purulent or blood-stained nasal discharge<sup>3,6</sup>

#### 3. Clinical assessment

- Get history, including:
  - onset/duration of symptoms
  - known allergies/triggers eg food, exercise, pollen, dust mites, mould
  - previous episodes, treatment, was it effective<sup>3</sup>
  - eczema, asthma<sup>6</sup>
  - **if hives:**
    - foods and medications consumed several hours before the reaction<sup>6</sup>
    - possible stings or bites<sup>6</sup>
    - symptoms of a viral infection eg fever, malaise

- **if hay fever:**
  - are symptoms there year round, seasonal or come and go
  - is it troublesome for patient/impacting on sleep, sport, work etc
- Do physical examination, including:
  - vital signs
  - if hives - check skin, describe lesions, localised/widespread

#### 4. Management

- If angio-oedema (see above), consult MO/NP
- Advise patient to avoid/minimise exposure allergens (if known)<sup>4</sup>
- Give antihistamine eg cetirizine (effective for hives and hay fever)
- **If hives** advise:<sup>1</sup>
  - keep cool, wear loose clothing
  - avoid aggravating factors eg alcohol, excessive heat, spicy foods<sup>7</sup>
  - do not take aspirin or other NSAIDs - can make symptoms worse
  - most hives will resolve within a couple of weeks without treatment
- **If hay fever:**<sup>7</sup>
  - if watery, red eyes, also see [Allergic conjunctivitis, p. 292](#) for eye drops
  - advise to see MO/NP at next clinic if:
    - severe/troublesome for patient, or has pre-existing asthma<sup>3</sup>
    - **note:** hay fever can co-exist with asthma
  - if allergic to pollens, advise may be at risk of thunderstorm asthma. Stay indoors in thunderstorms. Also see <https://www.allergy.org.au/patients/asthma-and-allergy/thunderstorm-asthma>

S2	Cetirizine			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW and IPAP may proceed for adult and child > 12 only				
RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Tablet	10 mg	Oral	<b>Adult and &gt; 12 years</b>	10 mg mane ± repeat dose late afternoon
			6–12 years	10 mg daily <b>OR</b> 5 mg bd
2–6 years	5 mg daily <b>OR</b> 2.5 mg bd			
1–2 years	2.5 mg bd			
Oral liquid	5 mg/5 mL			While symptoms persist
<b>Offer CMI:</b> May cause drowsiness, fatigue, headache, nausea, dry mouth or diarrhoea. Avoid alcohol				
<b>Note:</b> If renal impairment seek MO/NP advice. Increased risk of sedation in elderly - monitor carefully				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				2,4,8

#### 5. Follow up

- If symptoms continue advise to see MO/NP at next clinic, or sooner if worsen/concerned

#### 6. Referral/consultation

- As above

# Respiratory problems

## HMP Upper respiratory tract infection (URTI) - adult Common cold, influenza, bronchitis

### 1. May present with<sup>1</sup>

#### Common cold (acute viral rhinosinusitis)

- Blocked nose
- Runny nose or posterior nasal drip (can trigger cough)
- Facial pain/pressure
- ↓ sense of smell
- If fever, usually mild

#### Influenza

- As per common cold:
  - + sudden onset of fever, headache, muscle + joint pain, severe malaise, sore throat<sup>2,3</sup>

#### Bronchitis - inflammation of bronchi that usually follows an URTI<sup>4,5</sup>

- Cough ±
  - purulent or coloured sputum
  - SOB, wheeze
  - chest discomfort/pain due to frequent coughing
  - nasal congestion
  - headache, fever
- If cough not prominent feature, consider likelihood of other URTI eg common cold, tonsillitis, pharyngitis. See [Sore throat, p. 495](#)

### 2. Immediate management

- Use appropriate PPE

### 3. Clinical assessment

- Get history, including:<sup>1</sup>
  - onset, duration, severity of symptoms
  - fever
  - SOB, cough, any sputum - colour
  - facial pain, chest discomfort/pain
  - asthma, COPD, immunocompromised<sup>1,6</sup>
  - recent international travel<sup>7</sup>
- Do physical examination, including:
  - vital signs
  - check/listen for:
    - WOB
    - ↓ air entry, wheeze, crackles
    - ENT - red throat, enlarged tonsils, bulging red eardrums
    - enlarged head/neck lymph glands

## 4. Management

- Most respiratory tract infections are viral + get better without antibiotics<sup>8</sup>
- If severe symptoms + patient unwell consult MO/NP
- Paracetamol or ibuprofen if needed. See [Acute pain, p. 32](#)
- Advise to treat symptoms eg:
  - gargle warm salty water
  - suck on an ice cube or lozenges
  - have a soothing drink eg honey and lemon
  - use saline nasal drops/spray
  - wash hands, cover mouth when sneezing/coughing to help stop others catching it

### Common cold likely

- Symptoms usually clear within 7 days<sup>1</sup>
- Advise to return if develops features of bronchitis and/or [Bacterial sinusitis, p. 252](#)

### Influenza likely

- Consider nose and throat swab PCR to confirm (or as per Public Health Unit advice)
- Consult MO/NP if at risk of complications (antiviral medicine(s) may be indicated), including:<sup>2</sup>
  - ≥ 65 years
  - immunocompromised, chronic conditions
  - Aboriginal and Torres Strait Islander person
  - pregnant woman
  - obesity
  - homeless person

### Bronchitis likely<sup>4</sup>

- Advise usually resolves without antibiotics within 2–3 weeks. Cough can persist longer, sometimes up to 8 weeks
- Consider other causes of cough eg:
  - [Pneumonia - adult, p. 253](#)
  - [Asthma, p. 95](#)
  - [Pertussis, p. 508](#)
  - influenza
  - heart failure

## 5. Follow up

- Advise to be reviewed if not improving in a few days, symptoms worsen, new symptoms, or concerned. Consult MO/NP
- If cough continues > 3 weeks, advise to see MO/NP at next clinic - may need further investigations

## 6. Referral/consultation

- Laboratory confirmed influenza is notifiable ①

## HMP Acute bacterial sinusitis - adult/child

### 1. May present with<sup>1,3</sup>

- [Common cold, p. 250](#) (viral rhinosinusitis) symptoms
- + severe symptoms - present from onset of illness + persisting for 3–4 days ie:
  - T ≥ 39, purulent nasal discharge or facial pain

### 2. Immediate management<sup>1</sup>

- Suspect [Foreign body in nose, p. 194](#) in child with:<sup>4</sup>
  - any nasal occlusion, facial swelling ± pain, or smelly, purulent or blood-stained nasal discharge
- Do vital signs
- Screen for [Sepsis, p. 64](#)
- Contact MO/NP urgently if any signs of spreading infection:<sup>1,3</sup>
  - acute onset confusion
  - double or ↓ vision
  - neck stiffness, severe headache, photophobia
  - swelling or cellulitis around eyes
  - bulging eyes, painful eye movements

### 3. Clinical assessment

- Get history, including:
  - onset, duration, severity of symptoms
  - facial pain/tenderness
  - fever, cough, nasal discharge - colour
  - immunocompromised<sup>1</sup>
- Do physical examination, including:
  - any facial swelling + tenderness with gentle palpation<sup>2</sup>
  - ENT

### 4. Management<sup>1</sup>

- If symptoms < 3–4 days, likely viral rhinosinusitis (common cold)
- Paracetamol or ibuprofen if needed. See [Acute pain, p. 32](#)
- Consider symptomatic treatment as per [URTI - adult, p. 250](#) or [URTI - child, p. 494](#)
- Consult MO/NP if:
  - severe symptoms persisting > 3–4 days, or worsening after initial improvement, or
  - persist for > 7–10 days without improvement

### 5. Follow up

- Advise to be reviewed if symptoms worsen, do not improve or signs of spreading infection:<sup>1</sup>
  - consult MO/NP

### 6. Referral/consultation

- As above

## HMP Pneumonia - adult

### 1. May present with<sup>1,3</sup>

- Pleuritic chest pain
- Fever, rigors
- Cough + sputum, difficulty breathing, SOB<sup>1,2</sup>
- Fatigue, muscle aches/pain<sup>2</sup>
- **Always consider melioidosis** during November to May (tropic wet season) in areas north of Mackay, Tennant Creek, Port Hedland - characterised by fever, pneumonia + abscesses

### 2. Immediate management<sup>1</sup>

- Do vital signs + give O<sub>2</sub> to maintain SpO<sub>2</sub> > 94% (88–92% if COPD)
- Screen for **Sepsis**, p. 64 - pneumonia is a common cause of sepsis:
  - continue to manage as per **Sepsis** if indicated
- Insert IVC as needed

### 3. Clinical assessment

- Get history, ask about:
  - pleuritic chest pain, fever, rigors, night sweats<sup>1</sup>
  - cough, sputum - purulent or coloured
  - ↑ RR at rest, SOB
  - immunocompromised, diabetes, chronic kidney disease, chronic lung disease<sup>1</sup>
  - hazardous alcohol intake<sup>1</sup>
  - recent travel<sup>1,2</sup>
  - any exposure to muddy soil/water
- Do physical examination, including:
  - check/listen for:
    - WOB
    - ↓ air entry, wheeze
    - crackles - do they clear on coughing<sup>1</sup>
    - dullness on percussion
  - check skin for ulcers, abscesses, non-healing sores

### 4. Management<sup>1</sup>

- Contact MO/NP in all cases, who may advise:
  - chest x-ray
  - antibiotics ±
    - blood cultures ± urea, lactate, FBC, UE, LFT, glucose, blood gas
    - sputum (if able) for MCS ± PCR
    - IV fluids
    - evacuation
- Evacuation/hospitalisation needed if:<sup>1</sup>
  - RR ≥ 22, HR ≥ 100, SBP < 90
  - SpO<sub>2</sub> < 92% on room air (or lower than normal if COPD)
  - acute onset confusion
  - chest x-ray shows multilobar involvement
  - other factors eg comorbidities, social circumstances, age ≥ 65

- If assessed as not needing evacuation, MO/NP may advise:
  - oral amoxicillin OR daily IM procaine penicillin (if allergy to penicillin give oral doxycycline)
- Advise symptoms should steadily improve once treatment is started:<sup>1</sup>
  - fever should ↓ within the first few days and appetite will improve
  - other symptoms may take weeks to resolve
- **If melioidosis suspected** - MO/NP may order additional/alternative IV antibiotics

S4	Amoxicillin				Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP					
Form	Strength	Route	Dose	Duration	
Capsule	500 mg	Oral	1 g tds	5–7 days	
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea or thrush					
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems					
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>					1,4

S4	Procaine benzylpenicillin (procaine penicillin)				Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP					
Form	Strength	Route	Dose	Duration	
Prefilled syringe	1.5 g/3.4 mL	IM	1.5 g daily	5–7 days	
<b>Offer CMI:</b> May cause diarrhoea, nausea and pain at injection site					
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems					
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>					1,5

S4	Doxycycline				Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP					
Form	Strength	Route	Dose	Duration	
Tablet	50 mg, 100 mg	Oral	100 mg bd	5–7 days	
<b>Offer CMI:</b> Take with food or milk to reduce stomach upset. May cause nausea, vomiting, diarrhoea, epigastric burning, tooth discolouration or photosensitivity. Take with a large glass of water. Do not lie down for an hour after taking. Do not take iron, calcium, zinc or antacids within 2 hours. Avoid sun exposure					
<b>Pregnancy:</b> Safe in the first 18 weeks					
<b>Contraindication:</b> Serious allergy to tetracyclines. Taking oral retinoids. After 18 weeks of pregnancy					
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>					6

## 5. Follow up

- Advise for review daily until improved, or earlier if symptoms worsen or concerned:
  - if no improvement or worsening consult MO/NP
- Advise to see at next MO/NP clinic

## 6. Referral/consultation

- Laboratory confirmed melioidosis is notifiable ⓘ



## Tuberculosis - adult/child

### Recommend

- Always seek advice for assessment + management from local Tuberculosis (TB) Control Unit:
  - Qld contact numbers <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/diseases/tuberculosis/contact-a-service>
  - if outside of Qld contact local Public Health Unit

### Background<sup>1</sup>

- Air borne lung disease is the most common form of TB. Approx. 1500 cases are notified in Australia each year<sup>2</sup>
- Cure rates of TB with standardised treatments in drug sensitive disease is 98%
- Drug resistant TB has emerged globally and is an ongoing concern in Australia
- Countries with the most severe burden include PNG, China, DR Congo, Ethiopia, India, Indonesia, Kenya, Mozambique, Myanmar, Nigeria, South Africa, Thailand, Zimbabwe.<sup>3</sup> Also see World Health Organisation (WHO) TB country profiles <http://www.who.int/tb/country/data/profiles/en/>
- Groups more susceptible to infection + progression to active TB:<sup>1</sup>
  - children < 5, adolescents, elderly, malnourished, immunocompromised (eg diabetes, renal failure), taking medicines that can cause immunosuppression (eg corticosteroids, anti-cancer treatments)

## 1. May present with<sup>1,2</sup>

- Common symptoms of pulmonary TB include:<sup>1</sup>
  - cough > 3 weeks, sometimes with haemoptysis
  - fever + night sweats
  - weight loss
  - feeling generally tired + unwell
- Have a high clinical suspicion of TB in any person with:<sup>1</sup>
  - risk of exposure, and:
    - respiratory infection unresponsive to standard treatments, or
    - unexplained non-respiratory illness
  - in particular if:
    - travel/arrival from high incidence countries
    - contact of an active case within past 5 years
    - history of previous TB treatment
    - Aboriginal and Torres Strait Islander person in localised area eg NT, North Qld
    - HIV positive
    - overcrowded living conditions
- Non-pulmonary TB (disease involving organs other than lungs) may present with:<sup>1</sup>
  - a wide range of symptoms, depending on site of disease
  - often accompanied by intermittent fever or weight loss

## 2. Immediate management Not applicable

## 3. Clinical assessment

- If TB is suspected:<sup>1,4</sup>
  - use PPE including high filtration mask ie P2/N95 mask
  - if the facility has a negative pressure room, immediately place patient into room
  - if no negative pressure room separate patient from others:

- outside; or in well ventilated area, windows open, ceiling fans on
- do not place in a room with re-circulating air conditioning system
- Get history of symptoms, including onset date of any:<sup>5</sup>
  - cough - productive/haemoptysis
  - fever, night sweats
  - weight loss
  - swollen and/or painful lymph nodes
  - any other signs/symptoms
- Get past history. Ask about:<sup>1</sup>
  - past episodes or exposure to TB - when, treatment
  - close contact with someone with TB - when/who
  - travel to TB known area eg PNG
  - chronic disease eg diabetes, liver or renal disease
  - cancer, seizures, leukaemia, lymphoma, HIV
  - major abdominal surgery
  - organ transplant
  - currently pregnant - gestation
  - medications - any immunosuppressive therapy
- Get social history:<sup>5</sup>
  - occupation/number in household
  - bong smoking, illicit drug use, betel nut use
  - incarceration (prison time)
  - alcohol/smoking history
- Do physical examination, including:<sup>5</sup>
  - vital signs
  - weight + height
  - respiratory assessment
  - palpation of lymph nodes - note if any > 1 cm, and have been there > 1 month

#### 4. Management<sup>1,4</sup>

- For any patient with suspected TB:
  - consult MO/NP
  - contact local TB Control Unit or Public Health Unit for advice + management
- Give patient a fluid repellent surgical mask to wear + educate on coughing etiquette
- Get sputum samples x 3 on separate days:<sup>1,4</sup>
  - 1 'spot sputum' at presentation
  - 2 early morning samples - can give sterile container to patient to take home
  - request AFB/GXP on pathology form
  - ideally sample should be obtained in negative pressure room if available
  - otherwise, ask patient to go to a well-ventilated area, away from other patients eg outside
  - if patient has difficulty expectorating, seek advice from TB Control Unit
- **Note:** the gold standard test for TB is AFB, but the culture takes a long time + can delay treatment. A Quantiferon Gold blood test may be helpful in the first instance whilst awaiting culture results<sup>6</sup>
- Take blood for HIV
- Do chest x-ray - regardless of symptoms
- MO/NP may advise:<sup>4</sup>
  - evacuation if critical or suspected multidrug resistant TB, or

- isolate in community to wait for sputum results, or
- evacuation for non-critical cases, but where isolation in the community is not possible
- If evacuated, patient should:<sup>4</sup>
  - wear a surgical mask. Does not need P2/N95
  - not travel on commercial airlines or travel with other patients UNLESS the MO/NP determines they are clinically non-infectious
- Diagnosis must be conveyed to:<sup>4</sup>
  - transferring crew
  - receiving hospital - so single room can be prepared

## 5. Follow up

- As determined by TB Control Unit or MO/NP

## 6. Referral/consultation

- Always contact TB Control Unit for advice
- TB is a notifiable disease ①

# Mouth and dental problems

## HMP Trauma to teeth - adult/child

### Knocked out tooth, displaced tooth, broken tooth

#### Recommend

- Offer education on how to manage a knocked out 'adult' tooth. Prompt first aid may end up saving a tooth

## 1. May present with

- Knocked out, displaced, broken tooth/teeth
- Bleeding in mouth
- Injury/swelling to lips, tongue/face

## 2. Immediate management<sup>1</sup>

- If a knocked out **adult** tooth:
  - replant within 15 minutes if possible - see how to do this under **Management**

## 3. Clinical assessment<sup>1</sup>

- If practical, find all missing teeth/tooth fragments
- Ask about:
  - circumstances of injury
  - current medications
- Do vital signs
- Inspect mouth, teeth, soft tissues/gums
- Assess for bleeding +
  - bite - suspect jaw or facial fracture if bite is abnormal. See [Fractured jaw, p. 157](#)

- Check for other injuries, especially head and neck<sup>1</sup>
- If a tooth looks like it is missing, but not found at site of the accident, assess if:
  - patient has inhaled the tooth, OR
  - tooth has been forced up into the socket completely, appearing to be missing (covered in a clot)
  - if not sure, consult MO/NP/dentist who may consider x-ray<sup>1</sup>

#### 4. Management

- Control any bleeding with gentle pressure:
  - if bleeding continues, see [Post tooth extraction bleeding, p. 270](#)
- Offer analgesia - ibuprofen preferred.<sup>2</sup> See [Acute pain, p. 32](#)
  - add paracetamol if needed
  - advise to take regularly, rather than as required, for continuous pain relief

##### Knocked out tooth<sup>1</sup>

- Check if it is an adult or baby tooth:
  - baby teeth - smaller, lighter in colour
  - a child > 5 years may have a mixture of adult and baby teeth, can be hard to tell
- **Do NOT replant a knocked out baby tooth** - can damage the developing adult tooth
- **Replant permanent (adult) tooth within 15 minutes if possible** - more likely to heal:
  - if done > 1 hour, unlikely to succeed
- Check tetanus vaccination status and give booster if indicated. See [Tetanus immunisation, p. 557](#)

##### How to replant a knocked out adult tooth<sup>1</sup>

- Hold tooth carefully by the top (crown), not the root
- Check the tooth is intact - sometimes the root may have broken off:
  - if suspect it is not intact, consider urgent dental review ± x-ray before replanting
- If dirty, rinse tooth briefly with dairy milk or sodium chloride 0.9%:
  - **do NOT use water.** Do not rub or scrub
- Replace tooth in the socket with firm finger pressure:
  - be careful to **ensure the tooth is placed the right way around.** Take extra care if multiple teeth lost
- Use **Temporary splint** to hold in place (see below)
- Advise:
  - soft diet
  - use chlorhexidine gluconate 0.2% mouthwash. See [Gum disease, p. 272](#) for instructions
- **ALL re-implanted teeth need urgent review and treatment by dentist:**
  - arrange evacuation as needed

##### Temporary splint<sup>1</sup>

- Fix the replanted tooth to the adjacent teeth:
  - use a small piece of folded aluminium foil or malleable material eg Blu Tack®, orthodontic wax
  - put firmly over replanted tooth and teeth either side, so adjacent teeth act as a splint. Ask the patient to bite down to hold in position
  - if a delay in dental treatment is expected, dentist may recommend tissue adhesive or other adhesive material to bond the tooth to adjacent teeth

- **Start antibiotics after replanting the tooth:**<sup>1</sup>
  - doxycycline if not allergic and ≥ 8 years of age **OR**
  - amoxicillin if not allergic for child < 8 years, or if doxycycline allergy in adult:
    - if allergic to amoxicillin, consult MO/NP/dentist

### If unable to replant a knocked out tooth<sup>1</sup>

- Do not let the tooth dry out
- Store in dairy milk - cool or room temperature. Tooth ligament cells can **survive in milk up to 6 hours**
- If milk not available, store in sodium chloride 0.9% or saliva + plastic wrap - get patient to spit saliva into wrap first. Ligament cells can **survive up to 1 hour** if stored this way
- **Do NOT store in water**
- **Consult dentist urgently**

### Displaced tooth<sup>1</sup> - tooth is still in the socket, but moved position

- Do not reposition a baby tooth
- Reposition adult tooth to original position with firm finger pressure
- Put [Temporary splint, p. 258](#) on tooth
- **Consult dentist urgently** - arrange evacuation as needed

### Broken tooth/teeth<sup>3</sup>

- Keep tooth fragments, as dentist may be able to be re-bond onto the broken tooth
- If no pain from broken tooth, treatment is not urgent - refer to the next dental clinic
- If pain, dentine or pulp may have been exposed
- **Exposure of dentine:**
  - intermittent pain when exposed to stimulus - hot, cold or sweet food or drinks
  - cover any obvious cavity with orthodontic wax or other inert material eg Blu Tack® or temporary filling eg Cavit®<sup>2</sup>- **note:** will not last very long
  - analgesia not normally needed
  - advise to **see dentist as soon as possible**
  - avoid stimulus eg hot/cold drinks
- **Exposure of pulp:**
  - red soft tissue is seen in the area of break or cavity
  - severe pain persisting as a dull throbbing ache - even after removal of the stimulus
  - very sensitive to touch, may bleed or have a blood clot over it
  - **needs urgent dental treatment:**
    - within 24 hours to avoid infection/more damage
    - arrange evacuation as needed
  - **if delay to treatment expected,** consult dentist who may advise:
    - orthodontic wax or other inert material eg Blu Tack®, to cover the broken tooth to ↓↓ pain
    - OR temporary filling eg Cavit®
    - **note:** these measures may still not be successful in ↓↓ pain adequately. Consult dentist

S4	Doxycycline			Extended authority
ATSIHP, IHW and IPAP must consult MO/NP				
RN must consult MO/NP/dentist				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	50 mg 100 mg	Oral	<b>Adult</b> 100 mg daily <b>Child ≥ 8</b> daily < 26 kg: 50 mg 26–35 kg: 75 mg > 35 kg: 100 mg	7 days
<b>Offer CMI:</b> Take with food or milk to reduce stomach upset. May cause nausea, vomiting, diarrhoea, epigastric burning, tooth discolouration or photosensitivity. Take with a large glass of water. Do not lie down for an hour after taking. Do not take iron, calcium, zinc or antacids within 2 hours. Avoid sun exposure				
<b>Pregnancy:</b> Safe in the first 18 weeks				
<b>Contraindication:</b> Serious allergy to tetracyclines. Taking oral retinoids. After 18 weeks of pregnancy				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">1,4</span>				

S4	Amoxicillin			Extended authority
ATSIHP, IHW and IPAP must consult MO/NP				
RN must consult MO/NP/dentist				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg 500 mg	Oral	<b>Adult</b> 500 mg tds <b>Child</b> 15 mg/kg (max. 500 mg) tds	7 days
Oral liquid	250 mg/5 mL 500 mg/5 mL			
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea or thrush				
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">1,5</span>				

## 5. Follow up

- As per dentist's advice. Refer for next dentist clinic visit

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist

## Background<sup>1</sup>

- There is insufficient evidence to support the use of Oil of Cloves for toothache. Ingestion can cause life-threatening adverse reactions in children, + safety has not been established in pregnant + lactating women

## 1. May present with<sup>2</sup>

- Toothache/dental pain
- Tooth/teeth sensitive to hot/cold
- With or without:
  - bad breath (halitosis) ± bad taste in mouth
  - tooth decay - hole in tooth, broken down tooth, darkened tooth
  - facial swelling ± dental abscess (gum boil)

## 2. Immediate management Not applicable

## 3. Clinical assessment<sup>2</sup>

- Get history - use [Common causes of dental pain, p. 262](#) table for prompts:
  - pain
  - associated symptoms eg bad breath, facial swelling, fever
  - dental history as appropriate
- Do vital signs
- Inspect oral cavity, teeth, soft tissues, lymph nodes, ears

## 4. Management<sup>2</sup>

- Use [Common causes of dental pain, p. 262](#) table to guide treatment
- **Refer anyone with toothache to a dentist** - dental treatment is the most effective means of reducing pain<sup>2</sup>
- Offer analgesia.<sup>2</sup> See [Acute pain, p. 32](#)
  - ibuprofen preferred
  - add paracetamol if needed
  - advise to take regularly, rather than as required, to achieve continuous pain relief
  - if not effective, consider oxycodone (adult)
- Give analgesia for shortest duration possible, no more than 5 days without review<sup>2</sup>
- If severe pain consult MO/NP/dentist
- Reinforce good oral hygiene. See the *Chronic conditions manual* <https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm>

Common causes of dental pain <sup>2</sup>		
Pain/symptoms	Likely cause	Management
<ul style="list-style-type: none"> <li>• <b>Intermittent pain:</b> <ul style="list-style-type: none"> <li>– felt when tooth exposed to a stimulus eg hot, cold or sweet food/drink(s)</li> <li>– resolves once stimulus removed</li> </ul> </li> </ul>	<p><b>Reversible pulpitis</b></p> <p>(inflammation of the dental pulp tissue)</p>	<ul style="list-style-type: none"> <li>• Avoid food or drink that provoke pain</li> <li>• Cover any obvious cavity with an inert material eg Blu Tack® or orthodontic wax</li> <li>• <b>Advise to see dentist as soon as possible</b></li> <li>• Analgesia and antibiotics not needed</li> </ul>
<ul style="list-style-type: none"> <li>• <b>Severe pain:</b> <ul style="list-style-type: none"> <li>– can wake person up at night</li> <li>– felt when tooth exposed to a stimulus eg hot, cold or sweet food/drink(s)</li> <li>– persists as a dull throbbing ache after stimulus removed</li> <li>– can be continuous</li> </ul> </li> </ul>	<p><b>Irreversible pulpitis</b></p> <p>(inflammation of the dental pulp tissue)</p>	<ul style="list-style-type: none"> <li>• Avoid food or drink that provoke pain</li> <li>• Cover any obvious cavity with an inert material eg Blu Tack® or orthodontic wax</li> <li>• <b>Advise to see dentist as soon as possible:</b> <ul style="list-style-type: none"> <li>– root canal treatment or extraction may be needed</li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Dull throbbing ache:</b> <ul style="list-style-type: none"> <li>– NOT triggered by a stimulus eg hot, cold or sweet food/drink(s)</li> </ul> </li> <li>• Tooth may be sore to bite on</li> </ul>	<p><b>Infected root canal</b></p>	<ul style="list-style-type: none"> <li>• <b>Urgent dental review</b></li> <li>• If dental treatment unlikely in 24 hours, may need antibiotics: <ul style="list-style-type: none"> <li>– see <a href="#">Tooth abscess, p. 267</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Tenderness of the tooth on biting</b></li> </ul>	<p><b>Cracked tooth</b> or <b>Infection near tooth</b></p>	<ul style="list-style-type: none"> <li>• Can be difficult to differentiate so <b>refer to dentist urgently</b></li> <li>• If local infection confirmed and dental treatment not likely in 24 hours, may need antibiotics: <ul style="list-style-type: none"> <li>– see <a href="#">Tooth abscess, p. 267</a></li> </ul> </li> </ul>
<ul style="list-style-type: none"> <li>• <b>Facial swelling</b> and pain following a toothache</li> </ul>	<p><b>Tooth abscess</b></p>	<ul style="list-style-type: none"> <li>• See <a href="#">Tooth abscess, p. 267</a></li> </ul>
<ul style="list-style-type: none"> <li>• Pain worsens when head is tilted forwards</li> </ul>	<p><b>Maxillary sinusitis</b></p>	<ul style="list-style-type: none"> <li>• Treat symptoms</li> <li>• Antibiotics rarely needed</li> </ul>
<ul style="list-style-type: none"> <li>• Acute onset of severe pain throughout the mouth + <ul style="list-style-type: none"> <li>– gum bleeding, necrosis or ulcers of the gum</li> <li>– ± bad breath</li> </ul> </li> <li>• Smokers are at high risk</li> </ul>	<p><b>Necrotising gingivitis</b></p>	<ul style="list-style-type: none"> <li>• See <a href="#">Gum disease, p. 272</a></li> </ul>
<ul style="list-style-type: none"> <li>• Acute pain near front of ear on 1 or both sides</li> <li>• Mouth opening may be restricted</li> <li>• Patient may feel bite is not quite right</li> </ul>	<p><b>Temporomandibular disorder</b></p>	<ul style="list-style-type: none"> <li>• Rest the jaw, avoid extreme jaw movements eg yawning</li> <li>• Cold or warm compresses</li> <li>• <b>Refer to dentist</b></li> </ul>



## 5. Follow up

- Refer to next dentist clinic

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist

## HMP Dental caries - adult/child Tooth decay

### Background

- Aboriginal and Torres Strait Islander people + people from rural and remote areas are at high risk of dental caries<sup>1</sup>
- Application of fluoride varnish 2–4 times a year to primary (baby) + permanent (adult) teeth is associated with a substantial reduction in the extent of caries experienced<sup>2</sup>

### 1. May present with

- Tooth/teeth sensitive to hot/cold, biting or pressure
- Dental caries (tooth decay) - hole in tooth, broken down tooth, darkened tooth
- Risk factors for ↑ risk of dental caries<sup>1</sup> - see the *Chronic conditions manual* <https://www.health.qld.gov.au/rccsu/clinical-manuals/chronic-conditions-manual-ccm>

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>3</sup>

- Ask when last dental visit was
- Assess for risk factors for dental caries
- Examine teeth for dental caries:
  - holes/cavities or structural damage which can be brown or black in appearance
  - tooth/teeth surfaces with a white or frosty appearance may indicate early stages of decay
  - pain or sensitivity
  - bad breath or a bad taste in the mouth

### 4. Management<sup>3</sup>

- If toothache, see [Toothache, p. 261](#)
- Ask about any adverse experience associated with previous fluoride varnish application
- Offer to apply fluoride varnish to teeth if:
  - there is evidence of dental caries or person is at high risk of dental caries +
  - regular brushing with fluoride toothpaste is likely to be ineffective +
  - person is > 18 months old +
  - there are no contraindications
- Refer for dentist review
- If patient has been recalled for re-application of fluoride varnish:
  - assess for any changes in risk status
  - check if patient has had fluoride varnish applied anywhere else during the recall period eg by a dentist
  - reapply as indicated

- Reinforce good oral hygiene. See the *Chronic conditions manual* <https://www.health.qld.gov.au/rcsu/clinical-manuals/chronic-conditions-manual-ccm>

#### Application of fluoride varnish<sup>4</sup>

- Obtain valid consent from parent/guardian
- Warn parent/guardian that teeth may appear discoloured following varnish application
- If thick plaque deposits are present, clean the teeth first
- Dry teeth gently eg with gauze or cloth
- Apply fluoride varnish:
  - use a small brush, applicator or dental probe
  - apply as a thin film to all tooth surfaces including exposed root surfaces if present (ensure the tip/brush is not overloaded with varnish)
  - the colour of the varnish will assist you to know where to apply it
- The varnish will set in the presence of saliva and should not be disturbed or removed prematurely. Advise not to eat or drink for 30 minutes or brush teeth until the following morning
- Ensure clinical documentation includes all teeth/tooth surfaces to which fluoride varnish was applied and dosage

S4	Fluoride varnish (Duraphat®)			Extended authority ATSIHP/RIPRN
RN must consult MO/NP				
ATSIHP may proceed if included in the scope of practice in the practitioner's practice plan				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Liquid	0.4 g/0.4 mL 5% (single dose)  50 mg/1 mL (10 mL tube 5%)	Topical to teeth	<b>Child 18 months–6 years</b> up to 0.25 mL <b>Child 6–12 years</b> up to 0.4 mL <b>&gt; 12 years–adult</b> up to 0.75 mL  Use Duraphat® dosing card if not using single dose preparation	stat  Then administer 6 monthly or 3 monthly if indicated  Do not supply for self or parent administration
<b>Offer CMI:</b> Teeth may appear discoloured temporarily following application. Do not brush teeth on day of application - resume brushing the next morning. Eat soft foods for the rest of the day to minimise disruption of the varnish				
<b>Note:</b> Do not apply if ulcerative gingivitis or stomatitis to avoid discomfort for patient (contains alcohol). Do not leave fluoride varnish unattended when in use. Fluoride varnish is an S4 when used by clinicians other than dental practitioners				
<b>Contraindication:</b> Allergy to colophony (natural rosin) or sticking plaster; any episode of severe allergy or bronchial asthma that has required hospitalisation				
<b>Management of associated emergency:</b> Adverse reactions extremely rare. If occurs contact MO/NP or dentist. If ingestion of large amounts contact Poisons Information Centre ☎ 13 11 26				

4

## 5. Follow up

- Arrange re-call for review of oral health status and reapplication of fluoride varnish:
  - if low risk - every 6 months, if high risk - every 3 months

## 6. Referral/consultation

- Refer high risk and patients with obvious dental caries to dentist

## HMP Mouth ulcers - adult/child

### Background

- Ulcers persisting > 2 weeks are potentially serious<sup>1</sup>
- Ulcers are common in teenagers and young adults. The most common mouth ulcer is recurrent aphthous stomatitis (unknown cause), which affects 5–60% of the general population<sup>2,3</sup>

### 1. May present with

- Ulcer(s) in mouth

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1,2</sup>

- Ask about:
  - when did ulcer(s) appear, duration
  - is it recurring
  - does patient suspect the cause eg trauma from:<sup>3</sup>
    - biting tongue/cheek
    - thermal burn from eating or drinking food that is too hot/cold
    - poor fitting dentures/sharp or broken teeth
    - use of topical agents in mouth, oral rinses
  - pain or pins and needles/tingling sensation(s) in mouth or face
  - dry mouth - is cause known eg medicine side effect
  - fever
  - ulcers anywhere else on body
- Past history:
  - previous ulcer(s)
  - immunocompromised eg chemotherapy, malnutrition, HIV
  - STI history. See [STI/BBV assessment, p. 445](#) - consider syphilis and gonorrhoea:<sup>2</sup>
    - screen if appropriate
  - smoking, alcohol use
  - anaemia
  - diet, recent weight loss
- Do:
  - vital signs
  - inspect mouth, lips and tongue:
    - 1 or more ulcers
    - size, location, shape - oval/round or irregular
    - any pigmented lesions on the ulcer

### 4. Management<sup>2</sup>

- Most ulcers are self-limiting and heal within a few days
- If patient unwell/has other symptoms, consult MO/NP
- If poor fitting dentures or broken/sharp teeth, advise to see dentist at next clinic
- **If ulcer(s) recurring, or has persisted for > 2 weeks:**<sup>2,4</sup>
  - refer to next MO/NP clinic for investigations ± biopsy for less common causes eg:
    - metabolic, dermatological, allergic, immunological, infectious or cancer

- **Symptom relief options:**<sup>2</sup>
  - chlorhexidine gluconate 0.2% mouthwash. See [Gum disease, p. 272](#) for instructions
  - topical anaesthetic<sup>5</sup> eg Seda lotion®
  - salt water mouth rinses<sup>3</sup>
  - avoid acidic drinks (eg fruit juice or soft drink) and very spicy/sharp food
  - clean teeth properly
  - if needed, paracetamol or ibuprofen may help. See [Acute pain, p. 32](#)

S2		Lidocaine (lignocaine) (Seda lotion®)		Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP and RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Lotion	2.5% 15 mL	Topical	Dip cotton wool tip in lotion and apply to ulcer as needed. Max. every 2 hours	If not improving after 2 weeks, advise to see MO/NP
<b>Offer CMI:</b> Caution with hot drinks as numbness can result in burns				
<b>Contraindication:</b> Not for use in infants				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

6

## 5. Follow up

- Advise to be reviewed in 2 weeks. If not healed, advise to see MO/NP at next clinic

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist

## HMP Tooth abscess - adult/child

### Recommend<sup>1</sup>

- Antibiotics are not a substitute for dental treatment of a tooth abscess. The source of infection must be treated eg extraction of tooth, root canal treatment or surgical intervention

### 1. May present with<sup>1,2</sup>

- Toothache
- Localised swelling (abscess) on gum (± pus) ±
  - facial swelling/pain
  - fever
  - bad breath
  - systemically unwell

### 2. Immediate management<sup>1</sup>

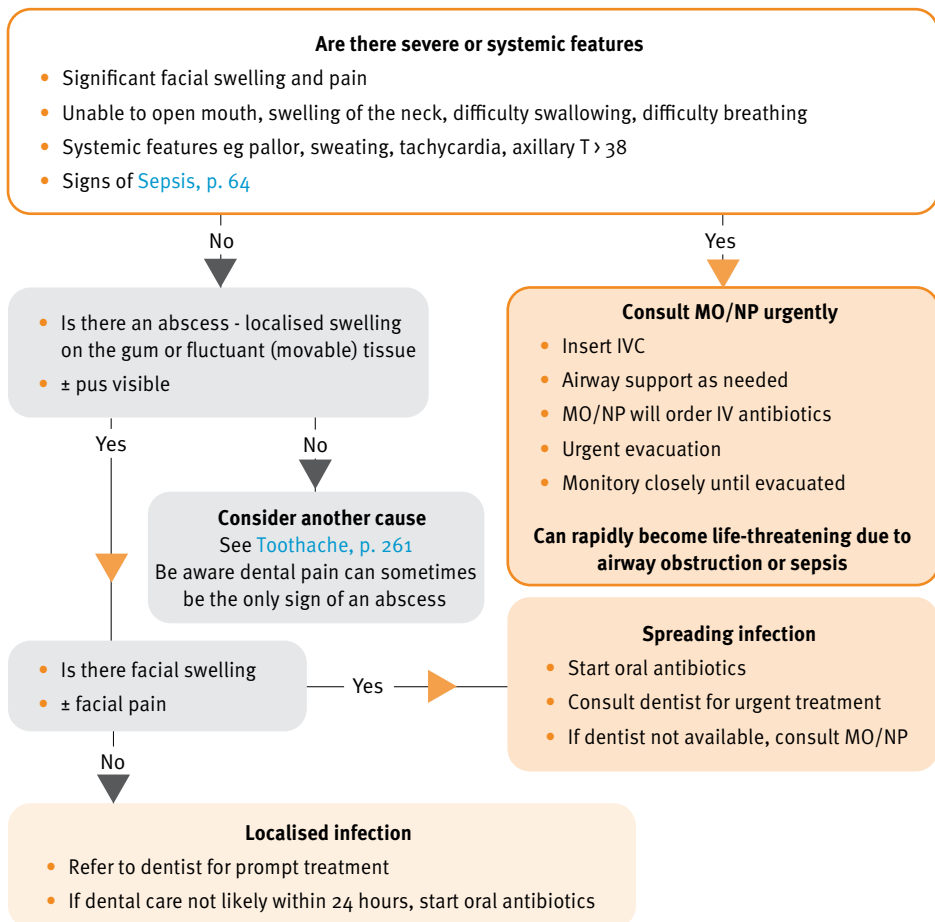
- Maintain airway if compromised - do not lay flat
- Do vital signs:
  - **note:** oral T is unreliable for infections in the mouth
- Screen for [Sepsis, p. 64](#)

### 3. Clinical assessment<sup>1,2</sup>

- Ask about:
  - facial pain/toothache
  - hot/cold sensitivity of teeth
  - fever
  - recurrent tooth abscess needing antibiotics
  - tooth decay, dental trauma, loose tooth
  - alcohol and drug use
- Do BGL
- Inspect:
  - mouth/gums - any soft tissue swelling, redness, pus, trauma, tooth decay
  - face - any redness, swelling, warm to touch
  - can patient open mouth, swallow, breathe well

### 4. Management<sup>1</sup>

- If child consult MO/NP/dentist
- Offer analgesia - ibuprofen preferred.<sup>3</sup> See [Acute pain, p. 32](#)
  - add paracetamol if needed
  - advise to take regularly, rather than as required, to achieve continuous pain relief
  - if severe pain in adult (not responding to above) consider oxycodone

Tooth abscess management<sup>1</sup>

- If oral antibiotics indicated, give:<sup>1</sup>
  - amoxicillin + clavulanic acid OR
  - if allergy to penicillin, give clindamycin
- Consult MO/NP/dentist if the abscess is recurring/antibiotics have been given previously, but no dental treatment yet<sup>1</sup>
- Advise patient:<sup>1</sup>
  - to see dentist as soon as possible - the cause of the abscess/infection needs to be fixed
  - rinse mouth with warm sodium chloride 0.9% or chlorhexidine gluconate 0.2% mouthwash - as per [Gum disease, p. 272](#)
  - about good oral hygiene. See the *Chronic conditions manual* <https://www.health.qld.gov.au/rccsu/clinical-manuals/chronic-conditions-manual-ccm>

S4	Amoxicillin + clavulanic acid		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW and IPAP must consult MO/NP				
RN must consult MO/NP/dentist				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	875 mg + 125 mg	Oral	<b>Adult</b> 875 mg + 125 mg bd	5 days
Oral liquid	400 mg + 57 mg/5 mL		<b>Child</b> 22.5 mg/kg (max. 875 mg) bd <i>Dose as per amoxicillin component</i>	
<b>Offer CMI:</b> Take with food. May cause rash, diarrhoea, nausea or thrush. Can cause severe diarrhoea (colitis) due to <i>C. difficile</i>				
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,4

S4	Clindamycin		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW and IPAP must consult MO/NP				
RN must consult MO/NP/dentist				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	150 mg	Oral	<b>Adult</b> 300 mg tds	5 days
			<b>Child</b> 7.5 mg/kg (max. 300 mg) tds	
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, vomiting or abdominal pain. Take with a full glass of water. Can cause severe diarrhoea (colitis) due to <i>C. difficile</i>				
<b>Note:</b> There is no oral liquid for children. For doses of a 'whole capsule' open the capsule and mix with a spoonful of food eg yoghurt or apple puree. For doses < 150 mg, open capsule and disperse contents into 10 mL of water to make a concentration of 15 mg/mL. Measure the required dose and give immediately. If smaller volumes are required, the capsule will disperse into 3 mL. The dispersion is highly unpalatable and may be mixed with juice before giving				
<b>Contraindication:</b> Allergy to clindamycin or lincomycin				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,5

## 5. Follow up

- Advise to return daily for review until it resolves or sooner if symptoms worsen
- Consult MO/NP/dentist if:<sup>1</sup>
  - unresponsive to oral antibiotics after 48–72 hours
  - if deteriorating at any time - may need evacuation for surgical treatment and IV antibiotics

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist

## Post tooth extraction bleeding - adult/child

### 1. May present with<sup>1</sup>

- Bleeding continuing or recurring after a tooth extraction

### 2. Immediate management

- Consult MO/NP/dentist urgently if:
  - bleeding causing swelling or airway compromise
  - patient is haemodynamically unstable. See [Shock](#), p. 62

### 3. Clinical assessment<sup>2</sup>

- **Ask about:**
  - when tooth was extracted
  - when bleeding started
  - nature and amount of blood loss - ooze or filling mouth with blood after dressing removed
  - has patient tried biting on gauze to stop bleeding
  - use of mouth washes; touching site with tongue/fingers - that could exacerbate bleeding
  - medical history, including:
    - medications that could increase bleeding eg warfarin, aspirin, heparin, complementary
    - does patient usually bleed or bruise after trauma
    - bleeding disorders eg haemophilia
    - leukaemia, chronic liver disease
    - alcohol use
- Do vital signs
- **Assess bleeding:**
  - sit patient up under good light
  - use gauze, suction or syringe with normal saline to remove blood, saliva and any liver clots (large mobile clots resembling fresh liver)
  - is blood continually filling mouth or just a sluggish ooze
  - any high flow arterial bleed, tear in gum or mucosa
  - any pus, cellulitis, trismus (unable to open mouth), liver clots

### 4. Management<sup>2</sup>

- Consult MO/NP/dentist if:
  - pus, cellulitis or trismus
- **To stop bleeding:**
  - dampen a piece of gauze, fold to postage stamp size, place on socket and hold firmly in place for 20 minutes until bleeding stops
  - if bleeding continues, rinse the socket with sodium chloride 0.9%, replace the gauze and ask patient to bite down firmly for 30 minutes
- **If bleeding continues despite measures above:**
  - consult MO/NP/dentist who may order:
    - gauze (as above) soaked in a 5% solution of tranexamic acid
    - make 5% solution by crushing a 500 mg tranexamic acid tablet and mix in 10 mL water
- **If bleeding continues beyond these measures, or low level ooze continues > 12–24 hours:**
  - systemic causes should be investigated - consult MO/NP/dentist



## 5. Follow up

- Advise patient to be reviewed the next day, or sooner if bleeding starts again
- Refer to next dentist clinic

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist

## HMP Dry socket - adult/child

### Background<sup>1</sup>

- Dry socket (alveolar osteitis) is when a blood clot disintegrates prematurely after a tooth/teeth extraction resulting in inflammation of the bone below

### 1. May present with<sup>1</sup>

- Severe pain ± bad breath 1–4 days post tooth extraction

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1</sup>

- Ask about:
  - when tooth extraction occurred, pain
- Do vital signs
- Inspect tooth extraction site:
  - typically the socket appears grey, non healing and is often filled with debris

### 4. Management<sup>1</sup>

- Offer analgesia - ibuprofen preferred.<sup>2</sup> See [Acute pain, p. 32](#)
  - add paracetamol if needed
  - advise to take regularly, rather than as required, to achieve continuous pain relief
  - if not effective, consider oxycodone (adult)
- Irrigate socket gently with warm sodium chloride 0.9% to remove debris
- Place Alvogyl® (antiseptic and analgesic) dressing loosely into socket:
  - does not require removal later. **Note:** do not use if allergic to iodine
  - if not available contact MO/NP/dentist for further advice
- Should heal spontaneously within 2–3 weeks
- If pain persists > 3 weeks, or signs (eg pain, redness) outside of the tooth socket, consult MO/NP/dentist for review of diagnosis

## 5. Follow up

- Advise patient to be reviewed daily initially. Redress the socket as needed
- Consult MO/NP/dentist if not improving
- Refer for next dentist clinic visit

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist

# HMP Gum disease - adult/child

## Gingivitis, periodontitis, necrotising gingivitis

### Background<sup>1,2</sup>

- Gingivitis is inflammation of the gums caused by the presence of undisturbed plaque. If not managed appropriately, can lead to periodontitis (loss of bone/tissues that support the teeth)

## 1. May present with

### Gingivitis<sup>1</sup>

- Red, swollen gums that bleed easily
- Rarely painful

### Periodontitis<sup>2</sup>

- Bad breath, bad taste
- Gum recession
- Bleeding ± swollen gums
- If severe, may have:
  - loose teeth, spaces between teeth
  - pain
  - abscess. See [Tooth abscess, p. 267](#) for management
- Rarely seen in children

### Necrotising gingivitis<sup>3</sup>

- Bleeding gums, ulcers - may have grey membrane
- Significant pain
- Bad breath
- ± swollen lymph nodes, fever
- Most common in young adult smokers. Rarely seen in children

## 2. Immediate management Not applicable

## 3. Clinical assessment

- Get history, including:
  - smoking
  - diabetes
  - teeth brushing/oral hygiene/dental history
- Do vital signs + BGL
- Inspect lips, gums, teeth, tongue, lymph glands in neck

## 4. Management<sup>1-3</sup>

- Offer analgesia as needed. See [Toothache, p. 261](#) for dental pain recommendations
- Consult MO/NP/dentist if:
  - severe ± systemic signs and symptoms eg fever, malaise
  - patient has an underlying medical condition eg poorly controlled diabetes, immunocompromised

**In all cases**<sup>1,2</sup>

- Offer education on good oral hygiene. See the *Chronic conditions manual* <https://www.health.qld.gov.au/rccsu/clinical-manuals/chronic-conditions-manual-ccm>

**Gingivitis**<sup>1</sup>

- Refer to dentist for check-up and clean - removal of plaque and calculus
- If pain limits ability to brush teeth/floss well:
  - consider short-term use of chlorhexidine gluconate 0.2% mouthwash
- Should resolve within 1 month

**Periodontitis**<sup>2</sup>

- If child consult MO/NP - needs **urgent paediatrician review** to investigate underlying cause<sup>2</sup>
- Refer to next dental clinic for removal of plaque and calculus + ongoing care
- Support patient to modify risk factors eg smoking, diabetes management<sup>2</sup>
- Antibiotics are rarely needed

**Necrotising gingivitis**<sup>3</sup>

- **Refer to dentist as soon as possible** - for debridement of plaque and calculus + ongoing care
- Give metronidazole + advise to use chlorhexidine gluconate 0.2% mouthwash until pain ↓
- Advise to stop smoking
- **Note:** antibiotics alone, without debridement by dentist + improvement of oral hygiene will usually lead to recurrence

Unscheduled	Chlorhexidine gluconate mouthwash			
ATSIHP, IHW, IPAP, RIPRN and RN may proceed				
Form	Strength	Route	Dose	Duration
Liquid	0.2%	Topical to mouth	<b>Adult</b> 10 mL 8–12 hourly <b>Child 6–12 years</b> 5 mL under adult supervision 8–12 hourly	5–10 days Rinse or gargle for 1 minute, then spit out
<b>Offer CMI:</b> Can cause altered taste, burning sensation, brown discolouration of teeth, tartar build up. Rarely severe allergy. <b>Limit use to up to 2 weeks</b> to minimise side effects				
<b>Contraindication:</b> Allergy to chlorhexidine - any route				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,3

S4	Metronidazole		Extended authority	
ATSIHP, IHW and IPAP must consult MO/NP				
RN must consult MO/NP/dentist				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	200 mg 400 mg	Oral	<b>Adult</b> 400 mg bd	3–5 days
<b>Offer CMI:</b> Avoid alcohol while taking and for 24 hours after finishing the course. Take with food to reduce stomach upset. May cause nausea, anorexia, abdominal pain, vomiting, diarrhoea, metallic taste, dizziness or headache				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				3,4

## 5. Follow up

- If necrotising gingivitis advise to be reviewed daily until improving

## 6. Referral/consultation

- Consult MO/NP/dentist as above. Consider telehealth consult with dentist
- If diabetic, consider referral to diabetic educator

## HMP Oral thrush - adult/child

### Background<sup>1</sup>

- Oral thrush (candidiasis) occurs relatively commonly in neonates and infants. It is otherwise uncommon in healthy individuals

### 1. May present with<sup>1</sup>

- Oral discomfort
- Whitish plaques on the tongue or oral mucosa
- Severe cases may show ulceration ± inflammation at 1 or both corners of mouth
- In infants:<sup>2</sup>
  - irritability
  - poor feeding ± feeding refusal
  - white, lacy curd-like plaque in mouth

### 2. Immediate management Not applicable

### 3. Clinical assessment

- Get history, including:
  - **adult** - ask about risk factors eg:<sup>1</sup>
    - smoking, dentures (cleaning routine), corticosteroid inhalers, poor oral hygiene
    - immunocompromised
    - medicines eg antibiotics, corticosteroids
  - **infant** - ask about:<sup>2</sup>
    - nappy rash
    - if breastfeeding - any nipple pain, burning/itching or cracked/red areolae
    - method of cleaning feeding equipment/other items that go in mouth eg dummies (can be a source of reinfection)
- Do vital signs
- Check:
  - mouth - any white or whitish-yellow plaques that may be difficult to remove, with the underlying area being raw or bleeding
  - infant's nappy area - any shiny red patches with satellite lesions<sup>3</sup>
  - mother's nipple area (if indicated from history) - any redness/cracked nipples

### 4. Management

- Consult MO/NP if:
  - child > 2 years
  - immunocompromised - needs specialist advice<sup>1</sup>
  - severe, persistent or frequent episodes of thrush - needs further evaluation

- **Adult:**<sup>1</sup>
  - if not related to denture use consult MO/NP/dentist who may advise:
    - miconazole, nystatin or amphotericin B lozenges
  - if related to denture use:<sup>1</sup>
    - give miconazole or nystatin
    - advise to apply to the cleaned fitting surface of the dentures at least twice a day
    - at night, remove dentures, clean well with a liquid soap and soft toothbrush and place in a dry environment
    - encourage good denture hygiene eg see <https://www.betterhealth.vic.gov.au/health/conditionsandtreatments/dentures>
- **Infant and child < 2 years:**<sup>1</sup>
  - give oral miconazole gel or nystatin
  - concurrently treat nipples of mother if breastfeeding (use oral miconazole gel)<sup>4</sup>
  - advise on correct cleaning of feeding equipment/dummies
  - provide support with breastfeeding + refer to child health nurse/midwife as needed

S3	Miconazole			Extended authority
ATSIHP, IHW, IPAP, MID, RIPRN and SRH may proceed RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Oral gel	2%	Oral	<b>Adult and child &gt; 2 years</b> 2.5 mL qid (½ of measure supplied)	7–14 days
			<b>Birth (at term)–2 years</b> 1.25 mL qid (¼ of measure supplied) In babies use a clean finger (not spoon) to smear in front of mouth to avoid choking	Continue for 7 days after symptoms resolve
<b>Offer CMI:</b> Place in the mouth and on the tongue after feeding/food. Keep in mouth as long as possible before swallowing. May cause mild GI upset				
<b>Contraindication:</b> Use with warfarin, simvastatin, ergometrine				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,5

S3	Nystatin		Extended authority	
ATSIHP, IHW, IPAP, MID, RIPRN and SRH may proceed RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Oral liquid	100,000 units/mL	Oral	<b>Adult and child</b> 1 mL qid	7–14 days Continue for several days after symptoms resolve
<b>Offer CMI:</b> Swish around the mouth for as long as comfortable before swallowing. Use after feeding/drinking or eating. May cause nausea, vomiting or diarrhoea				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,6

## 5. Follow up

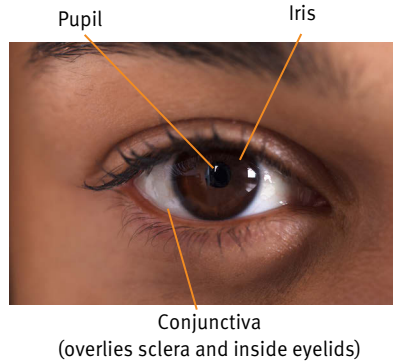
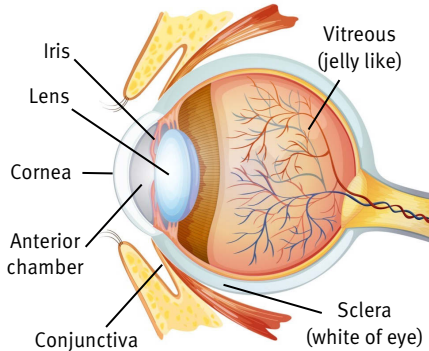
- Advise to be reviewed if symptoms do not resolve within a few days

## 6. Referral/consultation

- Consult MO/NP/dentist/child health nurse/midwife as above

# Eye problems

## Eye assessment - adult/child



### Eye tips<sup>1</sup>

#### Do - when indicated

- Check visual acuity (VA) and record it
- Test pupil light reactions
- Evert the eyelid
- Stain with fluorescein to help identify a corneal defect, **unless** a ruptured eyeball or penetrating injury is obvious
- Advise not to drive with eye padded as depth perception may be altered

#### Don't

- Give local anaesthetic eye drops to take home
- Try to remove protruding foreign body (FB)
- Put drops or ointment in an eye that has suffered an obvious rupture or penetrating injury
- Use steroid eye drops or double pad an eye, unless advised by MO/NP/ophthalmologist
- Routinely apply eye pad

### 1. May present with

- Red, painful eye(s)
- Changes to vision, photophobia, blurred vision
- Discharge, tearing
- Feeling like something in eye

### 2. Immediate management

- If history of substance in eye(s):
  - irrigate eye(s) with **1–2 L** of sodium chloride 0.9% for  $\geq 30$  minutes:<sup>1</sup>
    - tap water/shower if nothing else available<sup>2,3</sup>
    - go to [Chemical burn to eye, p. 285](#)
- If protruding foreign body (FB) - **do not remove**:<sup>4</sup>
  - consult MO/NP urgently

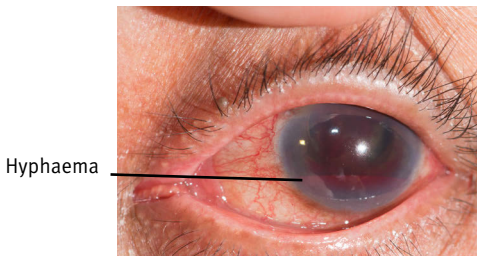
### 3. Clinical assessment

- If severe pain, instil oxybuprocaine. See [FB in eye, p. 281](#) for drug box<sup>4</sup>
- **If injury/trauma**, ask about:
  - time and mechanism of injury eg sharp object, flash burn, exposure to laser

- **could there be a foreign body (FB):**
  - ask about all activities in preceding 24 hours
  - especially activities that can cause high velocity projectiles eg hammering metal, angle grinding, operation of high speed machinery<sup>5</sup>
  - possible contamination with plant material/soil
- use of protective eyewear
- if forceful blunt injury, suspect eyeball rupture ± 'blow out' fracture of the orbit
- **If child** always suspect injury as cause of red, painful eye:
  - were there any witnesses, is the injury consistent with explanation<sup>9</sup>
  - if non-accidental injury is suspected, also see [Child protection, p. 551](#)
- **Ask about symptoms:**
  - one or both eyes affected
  - rate of onset - sudden or over several hours<sup>6,7</sup>
  - duration - is it getting better or worse
  - loss of vision, double or blurred vision<sup>6-8</sup>
  - photophobia, pain or grittiness, redness, discharge<sup>6-8</sup>
  - other eg flashing lights, floaters, headaches, halos around lights, fever
- **Get past history:**
  - diabetes, cold sores (herpes simplex virus), rheumatoid arthritis, ↑ BP
  - glasses, contact lenses (sleeping in, swimming in, prolonged use)<sup>6,8</sup>
  - eye problems eg injury, cataracts, surgery
  - family history eg glaucoma
- Do vital signs
- Examine eye (see below)

### Eye examination

- **If a red, swollen, tender eyelid + febrile** assume [Orbital/periocular cellulitis, p. 288](#)
- Examine systematically
- Use ophthalmoscope set to +10D and held at 10 cm from eye or bright pen light<sup>5</sup>
- Check both eyes without putting pressure on the eye or forcing the lids open, including:<sup>4</sup>
  - **eyelashes** - any in-turned, crusted discharge
  - **eyelids** - do they fully close, any lacerations, swelling, redness, bruising
  - **lower eyelid** - colour of conjunctiva
  - **sclera** - bleeding, FB
  - **cornea** - clear or hazy, FB, white spot<sup>1</sup>
  - **anterior chamber** - any blood (hyphaema) or pus (hypopyon)
- If eye swollen closed, gently lift lid to check for injuries + pupil size and reaction to light



- **Always evert upper eyelid** if red eye, sensation of FB, or grittiness:
  - check for/exclude retained FB
  - + look for redness or small round bumps - may indicate conjunctivitis (bacterial, viral, allergic)
- **Examine the pupils + eye movements:**
  - check + compare pupils:
    - shape + reaction to light (do they react equally)
    - red reflex for any dimming, any cloudiness
    - any asymmetry in the position of and brightness of the corneal reflex
  - eye movements:
    - ask patient to look up, down, side to side - any pain
    - any restriction. If restricted upward movement consider orbital fracture in blunt injury
    - any double vision. To confirm if it is true double vision (and not just blur/ghosting), cover 1 eye. If double vision disappears, it is not true double vision
- **Do visual acuity (VA)**
  - **note:** 3/3 or 6/6 VA does not exclude a serious condition. ↓VA may be long-standing or due to uncorrected refractive error
  - repeat VA using a multiple-pinhole occluder if available. If vision improves it likely means a VA issue that can be corrected with glasses, and less likely an acute issue
- **Stain with fluorescein** to help identify a FB or corneal defect eg abrasion
- **Measure intraocular pressure (IOP)** if tonometer available and skilled

### Visual acuity (VA)

- Use Snellen or tumbling E chart positioned at the specified distance eg 3 or 6 metres, from the patient in a well lit area:<sup>10</sup>
  - test one eye at a time
  - ask patient to cover one eye with their palm and read or point in the direction of the E's, from the top of the chart left to right
  - record VA as 2 numbers. Top number is the distance from the chart, bottom number is the smallest line of letters/Es that can be read without mistakes eg 3/3, 6/9
- If cannot read the top letter at 3 or 6 metres:<sup>10</sup>
  - hold up your fingers at varying distances eg 5 metres, 4 metres etc and record vision as counting fingers (CF) (the maximum distance they can see between 5 and 1 metre eg VA CF 5 m)
- If cannot see to count fingers, check if they can see hand movements or have perception of light by shining a torch into the eye at 10 cm<sup>5</sup>

### Fluorescein examination of cornea (eye drops or strips)

- **Avoid** if obvious or high likelihood of globe rupture or penetrating injury
- If red eye(s) use separate strips/tissues for each eye<sup>1</sup>
- **Fluorescein eye drops** - use smallest amount possible, too much will flood the eye and a defect may be missed.<sup>4</sup> Gently dab the closed eye with a tissue to remove excess
- **Fluorescein strips** - gently touch the strip to the inside of the lower eyelid, pre-moisten with saline if dry eye. Repeat if more dye is needed
- Ask the patient to blink to spread the dye
- Dye will pool or 'uptake' (stain) in damaged areas of cornea
- In normal light uptake will look yellow. **With blue light of ophthalmoscope uptake will be green:**<sup>11</sup>
  - **multiple pinpoint uptake** - may be dry eye
  - **sharp, well-defined border** - may be abrasion(s)
  - **round with fuzzy edges, branching (dendritic) pattern** - may be herpes simplex virus
  - **vertical lines on upper cornea** - may be retained FB in eyelid



## How to evert an eyelid<sup>1</sup>

Image 1



Ask patient to keep looking downwards as you take hold of the eyelashes and then gently pull the lid slightly towards you (image 1)

Image 2



Place cotton bud at the lid crease (or 5 mm from lid edge) and apply very light pressure downward with the bud (images 1 & 2)

Image 3

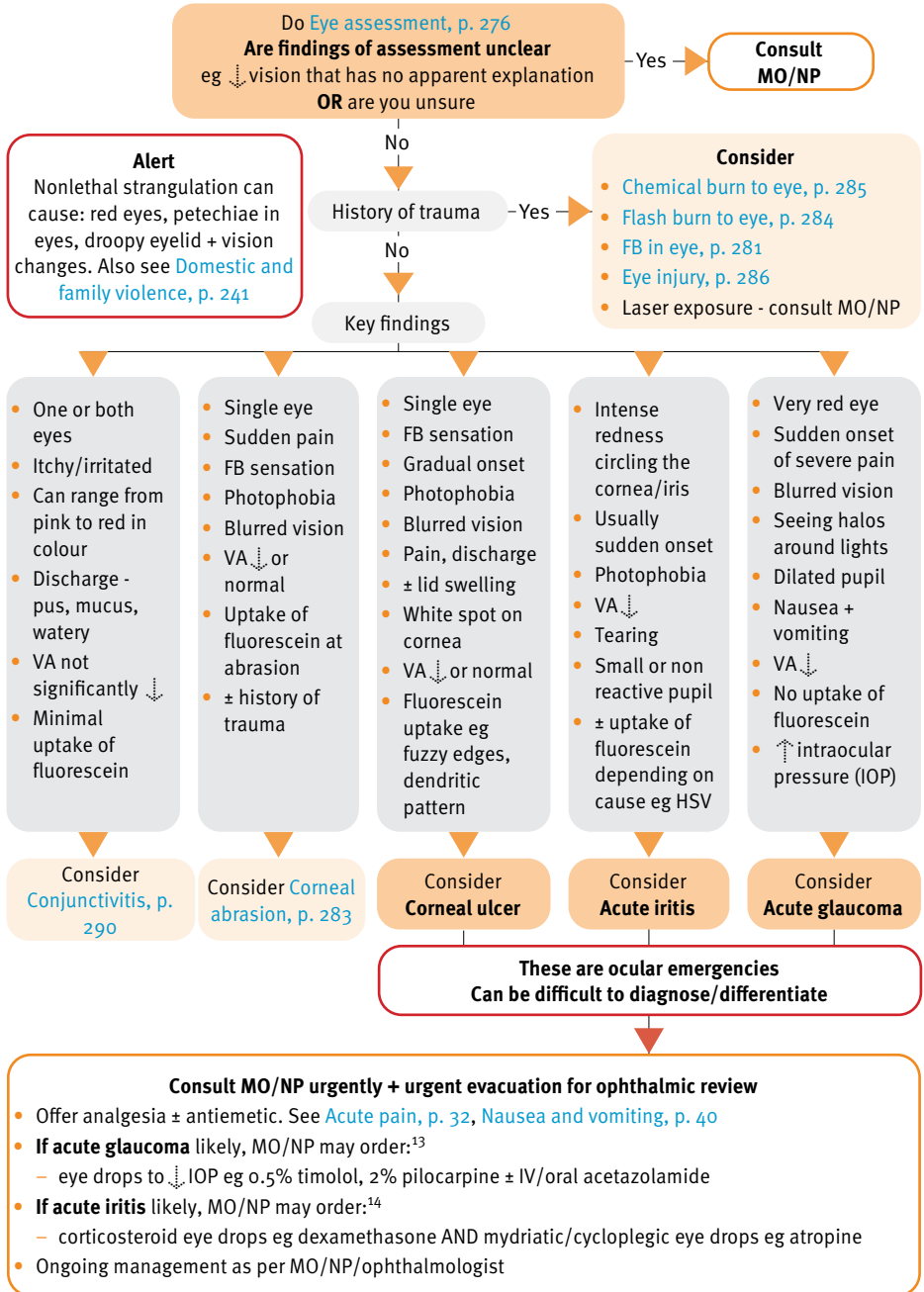


Evert the eyelid by using the eyelashes to gently pull the lid upwards over the bud. Remove the bud (image 3)

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## Eye differential diagnosis - adult/child

- Use flowchart below to help with differential diagnosis<sup>12</sup>
- **Be aware of the single red eye**



# HMP Foreign body in eye - adult/child

## 1. May present with<sup>1,3</sup>

- Report of something in the eye - pain/grittiness:
  - may be worse when blinking or with eye movements
- ± red, watery eye(s), swollen eyelid(s), photophobia

## 2. Immediate management

- See [Eye injury, p. 286](#) if:<sup>4</sup>
  - obvious penetrating injury, or caused from high speed and force (high velocity)
  - protruding foreign body (FB) - **do not remove**
- Advise to not rub the eye

## 3. Clinical assessment

- Ask about:
  - time + how FB happened eg:<sup>4</sup>
    - hammering metal, angle grinding, operation of high speed machinery - **high velocity**
    - sand, dust, eyelash<sup>1,3</sup> - **low velocity**
    - if unsure, ask about all activities in preceding 24 hours, especially activities that can cause high velocity projectiles
  - use of protective eyewear<sup>1,3</sup>
  - pain, changes in vision, photophobia<sup>1,3</sup>
  - contact lenses - get patient to remove<sup>1</sup>
  - previous eye conditions
- Do vital signs
- Examine both eyes as per [Eye assessment, p. 276](#)
  - instil oxybuprocaine if needed for pain<sup>1</sup>
  - visual acuity (VA) - test unaffected eye first
  - evert eyelids:<sup>1,2</sup>
    - if FB seen under eyelid, use moistened cotton tip with sodium chloride 0.9% to sweep away<sup>1,2</sup>
  - stain with fluorescein - may help to see FB + show any [Corneal abrasion, p. 283](#)
- If unable to tolerate examination, contact MO/NP<sup>3</sup>

## 4. Management

- If no FB visible, but fluorescein shows abrasion on cornea, see [Corneal abrasion, p. 283](#)
- Consult MO/NP if:
  - high velocity projectile - x-ray may be needed
  - event happened a few days prior + there is ↑ pain, worsening vision + diffuse redness<sup>2</sup>
  - ↓VA, pupils irregular or non-reactive
  - blood in anterior chamber (hyphaema) - suggests perforation of eyeball
  - FB 'lodged' in the cornea
- Only try to remove the FB if it:
  - looks superficial/not 'lodged' in the eye
  - is at least 4 mm from the pupil

**Removal of foreign body<sup>2,3</sup>**

- Lie patient down, with affected eye closest to you
  - Ask patient to look up, approach from side to ↓↓ blinking. Hold eyelid open if needed<sup>2</sup>
  - First try to irrigate with sodium chloride 0.9% (use a syringe without needle) FB may wash off<sup>2</sup>
  - Or, try to dislodge with a moistened cotton tip applicator using ‘dab’ or ‘nudging’ motion<sup>2</sup>
  - If still not dislodged, MO/NP may consider removal from cornea with 25 G needle (best done with slit lamp)<sup>4</sup>
  - Consider instilling oxybuprocaine in both eyes to stop blinking to aid removal
  - If unable to remove the FB, or there is a ‘rust ring’ after removal - consult MO/NP
- If FB removed from cornea give chloramphenicol as per [Corneal abrasion, p. 283](#)
  - Advise to wear protective eyewear during risky activities<sup>1</sup>

S4	Oxybuprocaine	Extended authority ATSIHP/IHW/IPAP/RIPRN		
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Eye drops	0.4%	Eye	<b>Adult and child</b> 1 drop	stat Repeat in 1–2 minutes if needed Up to 6 drops may be used for foreign body removal
<b>Offer CMI:</b> May sting for a few seconds. Close eyes after instillation. Dab away tears, do not rub				
<b>Note:</b> Do not give to patient to take home				
<b>Contraindication:</b> Ruptured eyeball or penetrating eye injury				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

5

**5. Follow up**

- If FB **removed from cornea**, advise to return the next day for review + stain with fluorescein:
  - consult MO/NP if VA ↓↓, pain or redness ↑↑, or defect on fluorescein staining
- For any **other FB**, advise to return if the sensation of FB in eye worsens or persists overnight:
  - consult MO/NP

**6. Referral/consultation**

- As above

# HMP Corneal abrasion - adult/child

## 1. May present with<sup>1,2</sup>

- Sudden pain + foreign body sensation - even if none is present ±
  - tearing, photophobia, blurred vision, difficulty opening eye, history of eye trauma

## 2. Immediate management Not applicable

## 3. Clinical assessment

- Get history and examine eyes as per [Eye assessment, p. 276](#)
- Do vital signs

## 4. Management

- **Consult MO/NP urgently if:**
  - suspected [Corneal ulcer, p. 280](#)
  - significant pain, photophobia, ↓ vision or worsening symptoms
  - wears contact lenses
- MO/NP may advise urgent evacuation for ophthalmology review ± topical antibiotics
- If abrasion < 4 mm + normal vision and resolving symptoms:<sup>3</sup>
  - give chloramphenicol<sup>1</sup>
  - advise most heal in 1–2 days<sup>1-3</sup>
  - do not patch or pad the eye<sup>4</sup>
- Offer ibuprofen.<sup>4</sup> See [Acute pain, p. 32](#)

S3	Chloramphenicol			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW and IPAP must consult MO/NP				
RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Eye drops	0.5% (10 mL)	Eye	1 drop qid <b>OR</b>	3–5 days
Eye ointment	1%		1.5 cm of ointment qid	
<b>Offer CMI:</b> May cause stinging or burning. Discard one month after opening. Can be stored at room temperature once opened. Do not wear contact lenses during treatment				
<b>Contraindication:</b> Ruptured eyeball or penetrating injury				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				5,6

## 5. Follow up

- Advise to be reviewed daily until healed or sooner if symptoms worsen:
  - repeat VA, stain with fluorescein - consult MO/NP if worsening symptoms/no improvement
- Advise to see MO/NP at next clinic

## 6. Referral/consultation

- As above

## HMP Flash burn to eye - adult/child

### Background

- Damage to the cornea from excessive exposure to bright ultra violet (UV) light.<sup>1</sup> If left untreated infection can start, which can lead to loss of vision<sup>2</sup>

### 1. May present with<sup>2</sup>

- Intense pain/feeling that there is something in eye (usually both eyes)
- Exposure to UV light around 5–12 hours prior eg:<sup>1</sup>
  - welding, direct sunlight, reflection off snow/water, sunlamp, lightning, explosion, solar eclipse
- Red, watery eye(s), closed eyelid(s)

### 2. Immediate management

- Offer analgesia. See [Acute pain, p. 32](#)

### 3. Clinical assessment

- **Ask about:**<sup>3</sup>
  - recent welding/other exposure to UV light
  - onset/duration of pain/symptoms<sup>1</sup>
  - photophobia, blurred/changed vision
  - one eye or both
  - contact lenses - get patient to remove
  - has this happened before - ↑ risk of infection after previous injury/burn<sup>3</sup>
- Do vital signs
- **Examine both eyes** as per [Eye assessment, p. 276](#):
  - instil **single dose** of oxybuprocaine as per drug box [FB in eye, p. 281](#)
  - VA
  - stain with fluorescein - may show widespread dots (superficial defects) across the cornea, particularly where not protected by eyelids in normal position, often both eyes<sup>5</sup>
  - if from welding check for [FB in eye, p. 281](#)
- Check face/skin for burns<sup>4</sup>

### 4. Management<sup>4,5</sup>

- Consult MO/NP if:
  - large or central (over pupil) corneal abrasion
  - VA ↓
- Treat as per [Corneal abrasion, p. 283](#)
- Advise the pain and discomfort should start improving in a few hours
- Usually heals in 1–2 days

### 5. Follow up

- As per [Corneal abrasion, p. 283](#)

### 6. Referral/consultation

- As above

# HMP Chemical burn to eye - adult/child

## Recommend

- Immediate irrigation is critical to avoiding permanent damage + blindness<sup>1-3</sup>

## 1. May present with<sup>1</sup>

- History of substance in eye(s) ±
  - pain
  - weeping, swelling of the lids or conjunctiva
  - ↓ vision
  - photophobia

## 2. Immediate management

- Irrigate eye(s) with 1–2 L of sodium chloride 0.9% for ≥ 30 minutes. Use:<sup>2</sup>
  - IV bag with giving set fully open **or**<sup>2</sup>
  - tap water/shower if nothing else available<sup>1,3</sup>
  - **do not examine eye(s) until this has been done**
- Lie patient down, hold tubing 3–5 cm above eye surface, ask patient to:<sup>2</sup>
  - open eyelids as wide as possible - may need to hold eyelid open
  - look left, right, up + down while irrigating
  - if only one eye, tilt head away from unaffected eye
  - remove any foreign bodies - evert upper/lower eyelids + sweep with a soaked cotton tip<sup>1,3</sup>
- Oxybuprocaine eye drops can be used for pain relief but remember if you are irrigating you are washing them out. Instil about every 10 minutes. See [FB in eye, p. 281](#) for drug box
- Offer analgesia if eye drops do not provide adequate pain relief. See [Acute pain, p. 32](#)
- **Urgently contact MO/NP**

## 3. Clinical assessment

- **Get rapid history while irrigating:**
  - when/how did it happen - if explosion may have other injuries<sup>1</sup>
  - what was the chemical and active ingredients if possible. **Note:** alkalis burn deeper + require more irrigation eg lime, oven cleaner<sup>1-3</sup>
  - any first aid, how soon after<sup>1,2</sup>
  - photophobia
  - pain in or around the eye
  - vision changes
- Do vital signs
- **After 30 minutes of irrigation:**<sup>2</sup>
  - use litmus paper to check pH, touch the paper on inside lower eyelid
  - pH should be between 6.5–7.4
  - if not - keep irrigating + contact MO/NP
  - use Morgan Lens® if skilled
- **If pH 6.5–7.4 check:**<sup>1</sup>
  - VA + stain with fluorescein
  - IOP if skilled
  - outer aspects of eye + lids for abnormalities:<sup>1,2</sup>

- cornea clear or cloudy, can you see iris details<sup>2</sup>- cloudy may indicate severe burn<sup>1</sup>
- evert lids again - any retained chemical<sup>2,3</sup>
- check surrounding skin

## 4. Management

- Contact Poisons Information Centre ☎ 13 11 26 (24 hours)
- Consult MO/NP urgently, who will advise:
  - further management ± evacuation for ophthalmology review

## 5. Follow up

- As per MO/NP/ophthalmologist

## 6. Referral/consultation

- As above

## HMP Eye injury - adult/child Blunt, penetrating

### 1. May present with<sup>1,3</sup>

- Trauma ±
  - pain
  - loss of vision, double vision, photophobia
  - excessive tearing - if globe perforated, aqueous will leak out + look like excessive tearing

### 2. Immediate management

- Assess + treat life-threatening injuries<sup>4</sup> eg [Head injuries, p. 143](#), [Traumatic injuries, p. 134](#)
- If obvious penetrating injury or protruding FB **do not remove - consult MO/NP urgently**<sup>2,5</sup>

### 3. Clinical assessment

- Get history + do examination as per [Eye assessment, p. 276](#), including:
  - if blow to the eye/blunt injury eg fist, falls, sports - check for orbital fracture:<sup>3,4</sup>
    - feel the bony rim above and below the eye - any deformity, pain
    - any numbness of the lower lid, cheek, side of nose, upper lip, teeth<sup>3</sup>
  - if the eye looks displaced lower than other eye or is turning out - may indicate a blow out fracture
  - **note:** if using fluorescein, also look for the Seidel sign - where the aqueous leaking out of a perforating injury causes an expanding dark patch to form in the fluorescein pattern
- If suspected penetrating injury, check tetanus status<sup>2</sup> ± give [Tetanus immunisation, p. 557](#)
- Do vital signs

### 4. Management

- **If ruptured eyeball or penetrating injury cannot be ruled out:**<sup>2,5</sup>
  - consult MO/NP urgently
  - protect by taping rigid eye shield over eye:<sup>2</sup>
    - if no eye shield use cut down Styrofoam® cup taped securely to the brow + cheek
    - make sure the shield/cup is not pressing on the eye
  - bed rest on back, with head elevated if preferred, in dim lighting<sup>4</sup>



- keep nil by mouth<sup>2,5</sup>
- Consult MO/NP in all cases, who may advise:
  - antibiotics, x-ray
  - urgent evacuation for ophthalmic review ± CT scan/MRI if suspected intraocular FB:
    - if risk of trapped air from penetrating injury, sea level cabin pressure is required for flight
- Offer analgesia ± antiemetic. Nausea and vomiting can ↑ injury.<sup>2,5</sup> See [Acute pain, p. 32](#), [Nausea and vomiting, p. 40](#)

## 5. Follow up

- If not evacuated advise follow up as per MO/NP/ophthalmologist

## 6. Referral/consultation

- As above

## Sudden, painless loss of vision - adult/child

### Background<sup>1</sup>

- This is an emergency. Causes can include - stroke, TIA, blockage in eye vessel, retinal detachment

### 1. May present with

- Sudden loss of vision - partial or complete in 1 or both eyes

### 2. Immediate management

- If loss of vision + signs of stroke eg one sided weakness, slurred speech:<sup>1,2</sup>
  - contact MO/NP urgently
  - see [Stroke, p. 130](#)

### 3. Clinical assessment<sup>1,3</sup>

- **Get rapid history/assessment** as per [Eye assessment, p. 276](#)
- **Also ask:**
  - how quick did the vision go - sudden, over several minutes or hours
  - 1 or both eyes - 1 usually means ocular cause; both usually systemic disease
  - has vision returned - may indicate TIA/vascular cause
  - other symptoms - any:
    - preceding flashes ± floaters, or recent facial trauma - may indicate retinal detachment
    - double vision, 'dark shadow' in vision of affected eye
    - jaw pain on chewing - may indicate temporal arteritis
  - prior episodes
  - contact lenses/glasses
  - hypertension, diabetes, cataract surgery
  - current medicines, eye drops
- Vital signs + BGL
- Examine eyes, including:
  - VA (distance + near) + pupil reaction to light
  - visual field, eye movements
  - red reflex - loss of reflex may indicate retinal detachment

## 4. Management

- Consult MO/NP urgently for all cases:
  - ongoing management ± urgent evacuation for specialist review/management
- Minimise activity eg bed rest<sup>3</sup>

## 5. Follow up

- As per MO/NP

## 6. Referral/consultation

- As above

## HMP Orbital/periorbital cellulitis - adult/child

### Background

- Orbital cellulitis is an infection of the eye socket + surrounding tissue. **It is an emergency + can cause blindness** + intracranial infection<sup>1</sup>
- Periorbital cellulitis is an infection of the eyelid<sup>1</sup>
- Overlapping clinical features makes it difficult to differentiate<sup>2</sup>
- Children < 4 years are at ↑ risk of both due to a undeveloped orbital septum<sup>1</sup>

### 1. May present with

- Single eye with:<sup>2</sup>
  - swelling + redness of eyelid
  - eye pain or tenderness

### 2. Immediate management

- Do vital signs
- Screen for [Sepsis, p. 64](#)

### 3. Clinical assessment

- **Get rapid history:**<sup>1,2</sup>
  - pain - eye, ear, facial
  - fever, malaise
  - headache - severe or persistent
  - ↓ vision, double vision
  - recent stye, trauma or insect bite to eye/eyelid
  - [Bacterial sinusitis, p. 252](#), tooth or ear infection<sup>3</sup>
  - Hib immunisation history
- **Check** head + neck, look for obvious signs of infection eg:
  - insect bite to the eye, wound, stye, infected tooth, enlarged lymph nodes, tender sinuses<sup>3</sup>
- **Examine** both eyes. Check for:<sup>1-3</sup>
  - degree of swelling, reduced eye opening - does this limit your ability to examine the eye
  - painful/limited eye movements - unable to look in different directions
  - ↓ VA, pupil reaction to light not equal
  - protrusion of the eyeball

## 4. Management

- If both eyes are swollen, or non-tender (painless) swelling in a well looking patient, more likely to be an allergic reaction.<sup>2</sup> Consult MO/NP
- **Contact MO/NP urgently** in all other cases, who may advise:
  - if periorbital cellulitis likely AND patient otherwise well eg no fever, malaise:
    - oral antibiotics
  - if orbital cellulitis OR severe periorbital cellulitis suspected:
    - insert IVC
    - blood cultures, FBC<sup>1,2</sup>
    - IV antibiotics
    - urgent evacuation ± CT scan<sup>1</sup>
    - urgent ENT + ophthalmology advice
- Offer analgesia. See [Acute pain, p. 32](#)

### Antibiotics<sup>1</sup> - MO/NP may order:

- If remote community in North Qld, NT, WA **OR** if previous MRSA infection/endemic setting:
  - oral trimethoprim + sulfamethoxazole (PLUS IV cefotaxime if severe)
- If non remote community **and NO** prior history of MRSA infection:
  - oral flucloxacillin (cefalexin if mild allergy, clindamycin if immediate sensitivity) OR
  - oral amoxicillin + clavulanic acid (if features of sinusitis, cefalexin if mild allergy)

S4	Trimethoprim + sulfamethoxazole			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	Strength	Route	Dose	Duration
Tablet	80 + 400 mg 160 + 800 mg	Oral	<b>Adult</b> 160 + 800 mg bd	7 days
Oral liquid	40 + 200 mg/5 mL		<b>Child ≥ 6 weeks</b> 4 mg/kg (max. 160 mg) bd <i>Dose as per trimethoprim component</i>	
<b>Offer CMI:</b> Take with food to reduce stomach upset. May cause fever, nausea, vomiting, diarrhoea, itch, rash or sore mouth. Avoid sun exposure. Report straight away if sore throat, fever, rash, cough, breathing difficulties, joint pain, dark urine or pale stools				
<b>Note:</b> If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
<b>Pregnancy:</b> Do not use in the 1st trimester or in late pregnancy				
<b>Contraindication:</b> Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment, elderly				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				<sup>1,4</sup>

S <sub>4</sub>	Cefotaxime			Extended authority ATSIHP/IHW
ATSIHP, IHW, RIPRN and RN must consult MO/NP				
Form	Strength	Route	Dose	Duration
Injection	1 g	IV	> 16 years to adult	stat Inject slowly over at least 3–5 minutes
	2 g		Infant and child ≤ 16 years 50 mg/kg (max. 2 g)	
<b>Offer CMI:</b> May cause diarrhoea, nausea, vomiting, pain at injection site, rash, headache or dizziness. Can cause severe diarrhoea (colitis) due to <i>C. difficile</i>				
<b>Note:</b> Rapid injection < 1 minute can cause life-threatening arrhythmias. If renal impairment advise MO/NP				
<b>Contraindication:</b> Severe hypersensitivity to penicillins, carbapenems and cephalosporins. Do not mix with aminoglycosides eg gentamicin				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">1,5</span>				

## 5. Follow up

- If not evacuated, advise to be reviewed daily until improved or sooner if symptoms worsen:
  - if not improving after 24 hours, contact MO/NP
- Advise to see MO/NP at next clinic

## 6. Referral/consultation

- As above

## HMP Conjunctivitis - adult/child

### Related topics

[Eye differential diagnosis, p. 280](#)

### 1. May present with<sup>1,2</sup>

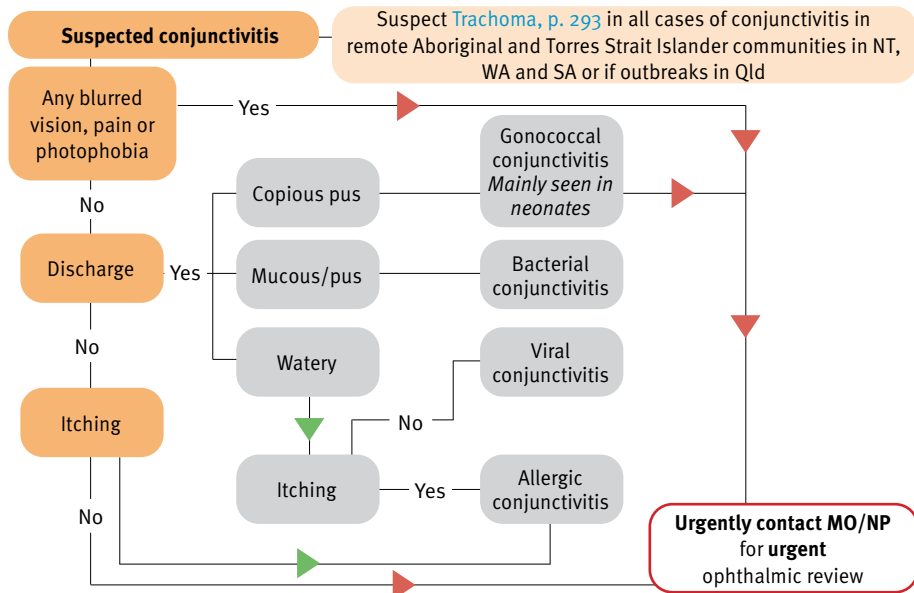
- Itchy/irritated ± red eye(s)
- Discharge - watery, pus, mucous
- Crusting of eyelids/eye lashes

### 2. Immediate management Not applicable

### 3. Clinical assessment

- **Ask about:**<sup>1,2</sup>
  - pain, photophobia or changes in vision
  - onset/duration of symptoms
  - one eye or both
  - contact with person with red eyes/conjunctivitis
  - recent URTI, sinusitis, flu-like symptoms
  - hay fever, known allergies
  - contact lenses
  - vesicular rash, cold sores, shingles

- exposure to irritants eg smoke or chlorine - usually self-limiting. If chemical exposure, also see [Chemical burn to eye, p. 285](#)
- Do vital signs
- Check for swollen glands in neck - may indicate viral conjunctivitis
- Examine both eyes as per [Eye assessment, p. 276](#) including:
  - VA + stain with fluorescein
  - evert eyelids - small round bumps under eyelid may indicate allergic conjunctivitis
- Use flow chart for further assessment<sup>1</sup>



## 4. Management

- Contact MO/NP urgently if:<sup>2</sup>
  - pain, photophobia or reduced vision, or worsening symptoms
  - fluorescein uptake shows [Corneal abrasion, p. 283](#)
  - wears contact lenses, or has herpes/shingles infection

### Newborn and young infant

- **2–12 months:**
  - if sticky/watery discharge is the **ONLY** symptom (no redness):
    - likely blocked tear duct rather than conjunctivitis<sup>2</sup>
    - usually gets better without treatment
    - seek advice from midwife/child health nurse/MO/NP as needed
  - if other signs of conjunctivitis eg red eye(s):
    - consult MO/NP
    - if suspected bacterial conjunctivitis give chloramphenicol<sup>2</sup>
- **Neonate:**
  - consult MO/NP
  - do swabs for MCS + gonorrhoea and chlamydia PCR:
    - if **gonorrhoea - ophthalmic emergency**<sup>2</sup> - consult MO/NP urgently
    - if **chlamydia** - MO/NP may order azithromycin<sup>2</sup>

- treat mother + contact tracing. See [STI/BBV, p. 445](#)
- if suspected bacterial conjunctivitis, MO/NP will order chloramphenicol
- **note:** chlamydia/gonorrhoea in neonate may reflect mother-to-child transmission, accidental transmission or sexual abuse.<sup>2</sup> See [Child protection, p. 551](#) if concerns

### Child and adult

- **Viral conjunctivitis:**
  - usually in one eye, but often spreads to both
  - reassure patient usually self-limiting but may take weeks to resolve
  - do not give chloramphenicol<sup>2</sup>
  - lubricating eye drops may provide symptomatic relief
- **Allergic conjunctivitis:**
  - if patient has [Allergic rhinitis, p. 248](#) oral antihistamines may help<sup>2</sup>
  - antihistamine eye drops eg ketotifen, may help reduce symptoms and lubricating eye drops may help to remove allergen<sup>1</sup>
- **Bacterial conjunctivitis:**
  - most cases will resolve in 7 days without treatment<sup>2</sup>
  - if marked symptoms eg purulent discharge, give chloramphenicol<sup>2</sup>
- **Chlamydial conjunctivitis:**
  - consider if sexually active with one red eye + mucopurulent discharge, or chronic conjunctivitis:<sup>1</sup>
    - do [STI/BBV tests, p. 448](#) + swab eye for chlamydia PCR (write 'eye' on pathology form)
    - give oral azithromycin
- **In all cases:**
  - symptomatic treatment may help eg:
    - cold compresses several times/day or ice packs<sup>1</sup>
  - clean eye(s) as needed with clean water to remove crusting and discharge. Gently wipe from inside to outside to avoid spreading infection to other eye<sup>3</sup>
  - frequent hand washing
  - avoid sharing towels, pillows
  - keep children away from school/child care until no discharge<sup>4</sup>

S3	Chloramphenicol			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW and IPAP must consult MO/NP				
RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Eye drops	0.5% (10 mL)	Eye	1 drop every 2 hours while awake for 1–2 days. Then, if improvement, 1 drop qid Use eye ointment at night (1–1.5 cm)	Up to 5 days
Eye ointment	1%		<b>OR</b> 1.5 cm of ointment 3–4 times daily	
<b>Offer CMI:</b> May cause stinging or burning. Discard one month after opening. Can be stored at room temperature once opened. Do not wear contact lenses during treatment				
<b>Note:</b> Consult MO/NP if child ≤ 2 years + not responding to treatment				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				2,5

S4	Azithromycin		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed for adult only - must consult MO/NP for child and neonate				
Form	Strength	Route	Dose	Duration
Tablet	500 mg	Oral	<b>Adult</b> 1 g	stat
Oral liquid	200 mg/5 mL		<b>Child &gt; 1 month</b> 20 mg/kg (max. 1 g)	
			<b>Neonate</b> 20 mg/kg daily	3 days
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, abdominal cramps or thrush. In neonates, advise parents to report if starts vomiting or irritable when feeding				
<b>Note for neonates:</b> Infantile hypertrophic pyloric stenosis has been associated with use of azithromycin, particularly during the first 2 weeks of life, with no increased risk after 7 weeks of age				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				2,6

## 5. Follow up

- Advise to return if worsening or new symptoms. Contact MO/NP who may:
  - order bacterial + viral swabs
  - arrange ophthalmic referral to exclude alternative diagnoses
- If bacterial and not resolved in 5 days, patient should have immediate ophthalmic review<sup>1</sup>

## 6. Referral/consultation

- As above

## HMP Trachoma - adult/child Chlamydia trachomatis conjunctivitis

### Background

- Caused by *Chlamydia trachomatis*, different strains from the STI chlamydia. Repeated infections can lead to eyelid contraction and in-turned eyelashes that rub on the eyeball, causing painful corneal scarring and opacity. Can lead to blindness in older adults<sup>1</sup>
- Most cases occur in children + teenagers in remote communities in the NT, SA and WA - with only **rare cases detected in Qld**<sup>1</sup>
- Also see World Health Organisation *Trachoma* [https://www.who.int/health-topics/trachoma#tab=tab\\_1](https://www.who.int/health-topics/trachoma#tab=tab_1)

### 1. May present with<sup>1,2</sup>

- Child - repeated conjunctivitis
- Adult - in-turned eyelashes, cloudy cornea

### 2. Immediate management Not applicable

### 3. Clinical assessment

- Get history, including:<sup>1,2</sup>
  - previous episodes for patient and family

- time spent in NT, SA, WA or known area of outbreak
- contact with person(s) with similar symptoms
- Do vital signs
- Examine eyes as per [Eye assessment, p. 276](#), including:
  - evert the upper eyelids, look for:<sup>2</sup>
    - ≥ 5 pale round spots (follicles)
    - intense redness, swelling - can you see normal blood vessels
    - **note:** follicles ± intense redness are indications of active trachoma - take eyelid swab for chlamydia PCR
    - visible scarring, in-turned eyelashes, signs of pulling out eyelashes
  - check cornea - clear or cloudy

## 4. Management

- If highly suggestive of active trachoma, treat as per CDNA *Trachoma guidelines* <https://www1.health.gov.au/internet/main/publishing.nsf/Content/cdna-song-trachoma.htm>
  - treat patient and people > 3 kg who live in the same household(s) as the patient:<sup>2</sup>
    - give oral azithromycin
    - **note:** aim to treat all members of relevant household(s) within 1 week of starting treatment<sup>2</sup>
- Consult MO/NP if in-turned eyelashes:
  - referral for ophthalmic review ± eyelid surgery
- Advise patient and family to reduce spread of infection by:<sup>1,2</sup>
  - daily showering, washing faces + hands regularly
  - avoid sharing towels/face washers, beds/bedding

S <sub>4</sub>	Azithromycin			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	500 mg	Oral	<b>Adult</b> 1 g	stat
Oral liquid	200 mg/5 mL		<b>Child &gt; 3 kg</b> 20 mg/kg (max. 1 g)	
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, abdominal cramps or thrush				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				2,3

## 5. Follow up

- Check swab result:
  - if *Chlamydia trachomatis* is identified notify Public Health Unit<sup>1</sup>
- Advise to return if worsening or new symptoms, contact MO/NP who may:
  - order swabs for MCS and *Chlamydia trachomatis* PCR
  - arrange ophthalmic referral if repeated infections, in-turned eyelashes or corneal changes

## 6. Referral/consultation

- As above
- *Chlamydia trachomatis* is a notifiable disease by pathological diagnosis ①



# Urinary tract problems

## HMP Urinary tract infection (UTI) - adult Cystitis, pyelonephritis

### Background

- The safety and efficacy of urinary alkalisers eg Ural®, Citravescent® is unknown<sup>1</sup>
- Cranberry and ascorbic acid are not effective treatments<sup>2</sup>

## 1. May present with

### Cystitis<sup>2-4</sup>

- Urinary symptoms - frequency, urgency, dysuria, haematuria
- Low abdominal pain
- Nitrites ± leucocytes on urinalysis

### Pyelonephritis<sup>4</sup>

- T ≥ 38, flank pain, nausea, vomiting
- ± urinary symptoms

## 2. Immediate management

- Consider [Ectopic pregnancy, p. 371](#) in sexually active females with low abdominal pain
- Do vital signs
- Screen for [Sepsis, p. 64](#)

## 3. Clinical assessment<sup>3,4</sup>

- **Ask about:**
  - past episode(s) of UTI and STI:
    - when, treatment, effectiveness
  - kidney stones, prostate problems, urinary tract abnormalities
  - vaginal discharge
- **Do:**
  - urinalysis
  - MSU for MCS if:
    - nitrites or leucocytes on urinalysis **or**
    - recently taken antibiotics or recurrent infection<sup>2</sup> **or**
    - if pyelonephritis is suspected
  - pregnancy test if female of reproductive age
  - check for any suprapubic, loin tenderness
  - if sexually active offer [STI/BBV tests, p. 448](#)

## 4. Management

- If pregnant see [UTI in pregnancy, p. 375](#)

**Pyelonephritis<sup>4</sup>**

- Contact MO/NP promptly who may advise:
  - IV gentamicin + ampicillin
  - check previous urine pathology results to ensure no resistance to antibiotics recommended
  - evacuation/hospitalisation

**Cystitis**

- Diagnosis requires the presence of symptoms (+ve urine culture alone does not require antibiotics)
- Offer paracetamol or ibuprofen. See [Acute pain, p. 32](#)
- Advise to drink enough fluids so not thirsty, aim for 6–8 glasses of water/day<sup>3</sup>
- **Male:**<sup>2</sup>
  - contact MO/NP
  - UTIs are uncommon - dysuria in younger males is usually caused by an STI
- **Female:**
  - if low abdominal pain **without** urine symptoms consider [PID, p. 462](#)
  - if nitrites or leucocytes on urinalysis AND:
    - **no urine symptoms** - MSU and antibiotics are not required<sup>5</sup>
    - **has urine symptoms** - do MSU + give antibiotics<sup>2</sup>

**Antibiotics** if indicated

- Trimethoprim OR nitrofurantoin. If contraindicated, give cefalexin:
  - **note:** give nitrofurantoin if treated  $\leq$  3 months ago with trimethoprim<sup>2</sup>
  - check previous urine samples to ensure no resistance to antibiotics recommended. If resistance, contact MO/NP

S <sub>4</sub>	Trimethoprim			Extended authority ATSIHP/IHW/IPAP/RIPRN/SRH
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN and SRH may proceed for females. Must consult MO/NP for males				
Form	Strength	Route	Dose	Duration
Tablet	300 mg	Oral	300 mg daily	<b>Female</b> 3 days <b>Male</b> 7 days
<b>Offer CMI:</b> Take at night to maximise urinary concentration. May cause fever, itch, rash or nausea				
<b>Note:</b> If renal impairment or on an ACEI, seek MO/NP advice. Elderly may be more susceptible to adverse effects eg hyperkalaemia				
<b>Pregnancy:</b> Avoid in 1st trimester				
<b>Contraindication:</b> Megaloblastic anaemia				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

2,6

S <sub>4</sub>	Nitrofurantoin		Extended authority	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN and SRH may proceed for females. Must consult MO/NP for males				
Form	Strength	Route	Dose	Duration
Capsule	50 mg 100 mg	Oral	100 mg qid	<b>Female</b> 5 days <b>Male</b> 7 days
<b>Offer CMI:</b> Take with food or milk to reduce nausea + improve absorption. May cause nausea, vomiting, headache, drowsiness or dizziness. Report if develop difficulty breathing, cough or numbness or tingling. May turn urine a brownish colour. Do not use with urinary alkalisers (eg Ural®, Citravescent®) as they reduce the antimicrobial effect				
<b>Contraindication:</b> Renal impairment				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">2,7</span>				

S <sub>4</sub>	Cefalexin		Extended authority	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN and SRH may proceed for females. Must consult MO/NP for males				
Form	Strength	Route	Dose	Duration
Capsule	250 mg 500 mg	Oral	500 mg bd	<b>Female</b> 5 days <b>Male</b> 7 days
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, vomiting, dizziness, headache or thrush				
<b>Note:</b> If renal impairment seek MO/NP advice				
<b>Contraindication:</b> Severe or immediate allergic reaction to a cephalosporin or a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">2,8</span>				

## 5. Follow up<sup>2</sup>

- Advise to be reviewed in 2–3 days if still has symptoms, or sooner if concerned:
  - consult MO/NP if symptoms persist or worsen
- Check results of MSU:
  - if pathogen resistant to the antibiotics given, but **symptoms have improved**, do not give a different antibiotic<sup>2</sup>
  - consult MO/NP if pathogen resistant to antibiotics given and symptoms **have not improved**

## 6. Referral/consultation

- As above

# Skin problems

## HMP **Impetigo** - adult/child Infected skin sores, school sores, infected scabies

### Recommend<sup>1</sup>

- Treat impetigo promptly
- Promote prevention - hand washing with soap at least once a day, showering, washing clothes

### Background<sup>1,3</sup>

- Impetigo is a highly contagious skin infection, most common in children. If untreated can result in bone and joint infections, abscesses, cellulitis and sepsis
- Usually caused by Group A Strep in remote Aboriginal and Torres Strait Islander settings. Group A Strep can cause [APSGN, p. 511](#) and [ARF, p. 515](#) which can result in chronic kidney disease or rheumatic heart disease<sup>1</sup>

### 1. May present with<sup>1</sup>

- Sores from a break in skin that gets infected eg from:
  - scratching, [Scabies, p. 316](#), insect bites, [Head lice, p. 319](#) or [Tinea/ringworm, p. 311](#)
  - cuts and lacerations
- Sores start as round or oval filled bumps:
  - progress into blisters, or
  - produce a clear honey-coloured fluid that forms a crust on the skin
  - when the crusts are removed, the area underneath is red and eroded

### 2. Immediate management Not applicable

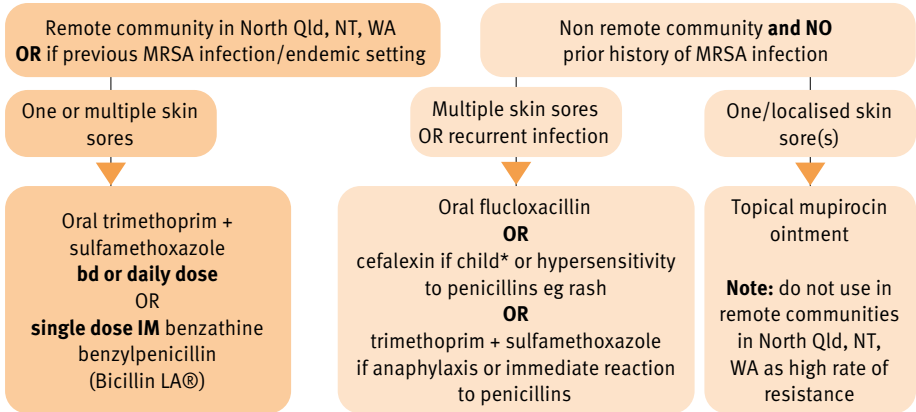
### 3. Clinical assessment<sup>1</sup>

- Get history, including:
  - previous impetigo - when, treatment
- Do physical examination, including:
  - vital signs
  - weight - bare weight if < 2 years
  - urinalysis
  - examine skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
    - look for signs of [Scabies, p. 316](#)
    - assess for signs of systemic infection eg fever, malaise and sequelae eg [APSGN, p. 511](#) or [ARF, p. 515](#), [Sepsis, p. 64](#), [Cellulitis, p. 306](#), [Septic arthritis, p. 550](#)
- Take swab for MCS before starting antibiotics.<sup>3</sup> See [How to take a wound swab, p. 324](#)

### 4. Management

- Consult MO/NP if:
  - BP or urinalysis is abnormal - may indicate the presence of [APSGN, p. 511](#)
  - systemically unwell eg fever, malaise
- **Give antibiotics for anyone with impetigo, regardless of severity<sup>1,3</sup>**
- If present, treat [Scabies, p. 316](#) or [Head lice, p. 319](#) concurrently

**Antibiotics for impetigo<sup>1,3</sup>**



\*If unable to swallow capsules, as cefalexin liquid tastes better than flucloxacillin liquid

**Advice to parent/carer<sup>1,2</sup>**

- Wash hands regularly with soap or alcohol based hand sanitiser. Ask others in the household to do the same
- Try not to touch the sores
- Have regular showers/bathing
- If needed, wash sores with soap and water
- Don't share towels
- Cover sores on exposed areas with waterproof dressing, until sores are dry<sup>4</sup>
- Keep home from school/child care until 24 hours of antibiotics have been given<sup>4</sup>

S4	Trimethoprim + sulfamethoxazole		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	80 + 400 mg 160 + 800 mg	Oral	<b>bd dose preferred</b> <b>Adult</b> 160 + 800 mg <b>Child ≥ 1 month</b> 4 mg/kg (max. 160 mg)*	<b>bd for 3 days</b>  <b>OR</b> <b>daily for 5 days</b>
Oral liquid	40 + 200 mg /5 mL		<b>daily dose eg daily supervised</b> <b>Adult</b> 320 + 1600 mg <b>Child ≥ 1 month</b> 8 mg/kg (max. 320 mg)*	
*Dose as per trimethoprim component				
<b>Offer CMI:</b> Take with food to reduce stomach upset. May cause fever, nausea, vomiting, diarrhoea, itch, rash or sore mouth. Avoid sun exposure. Report straight away if sore throat, fever, rash, cough, breathing difficulties, joint pain, dark urine or pale stools				
<b>Note:</b> If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
<b>Pregnancy:</b> Do not use in the 1st trimester or in late pregnancy				
<b>Contraindication:</b> Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment, elderly				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

1,2

S4	Benzathine benzylpenicillin (Bicillin LA®)			Extended authority ATSIHP/IHW/IPAP/RIPRN		
ATSIHP, IHW, IPAP and RN must consult MO/NP						
RIPRN may proceed						
Form	Strength	Route	Dose			Duration
Prefilled syringe	1.2 million units/ 2.3 mL	IM	< 10 kg	450,000 units	0.9 mL	stat Inject slowly over at least 2–3 minutes
			10– < 20 kg	600,000 units	1.2 mL	
			≥ 20 kg	1.2 million units	2.3 mL	
<b>Offer CMI:</b> May cause diarrhoea, nausea and pain at injection site						
<b>Note:</b> <a href="#">Ventrogluteal</a> , p. 564 or vastus lateralis sites preferred. Do not give in deltoid. See <a href="#">Managing injection pain</a> , p. 563						
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems						
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis</a> , p. 82						
3.5						

S4	Flucloxacillin			Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP					
RIPRN may proceed					
Form	Strength	Route	Dose		Duration
Capsule	250 mg 500 mg	Oral	<b>Adult</b> 500 mg qid		7 days Stop earlier if infection has resolved
			<b>Child</b> 12.5 mg/kg (max. 500 mg) qid		
<b>Offer CMI:</b> Take on an empty stomach ½ hour before or 2 hours after food. May cause diarrhoea, nausea or thrush					
<b>Note:</b> Can cause cholestatic hepatitis. If renal impairment seek MO/NP advice					
<b>Contraindication:</b> History of cholestatic hepatitis with dicloxacillin or flucloxacillin. Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems					
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis</a> , p. 82					
3.6					

S4	Cefalexin			Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP					
RIPRN may proceed					
Form	Strength	Route	Dose		Duration
Capsule	250 mg	Oral	<b>Adult</b> 1 g bd		7 days Stop earlier if infection has resolved
	500 mg		<b>Child</b> 25 mg/kg (max. 1 g) bd		
Oral liquid	250 mg/5 mL				
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, vomiting, dizziness, headache or thrush					
<b>Note:</b> If renal impairment seek MO/NP advice					
<b>Contraindication:</b> Severe or immediate allergic reaction to a cephalosporin or a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems					
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis</a> , p. 82					
3.7					

S4	Mupirocin			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Ointment	2%	Topical	Apply to crusted areas tds	5 days
<b>Offer CMI:</b> Avoid contact with eyes and mouth. May cause itching, burning, redness, stinging, dryness, pain and swelling				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				3,8

## 5. Follow up

- If treated for widespread impetigo, advise to be reviewed daily initially
- If recurrent impetigo:<sup>3,9</sup>
  - emphasise hygiene measures. May be reinfection from a close contact
  - once current infection healed, refer to next MO/NP clinic, who may consider decolonisation of Staph (if confirmed via nasal ± perineal swab) of patient ± household contacts
- If not responding to antibiotics:<sup>3</sup>
  - modify treatment based on results of MCS - discuss with MO/NP

## 6. Referral/consultation

- Consult MO/NP as above

## HMP Boils - adult/child

### Carbuncles, folliculitis

#### Background

- A boil (furuncle) is an infection of a hair follicle usually caused from Staph occasionally in combination with Group A Strep<sup>1</sup>

### 1. May present with<sup>2</sup>

- **Boil:**
  - starts as firm, tender, red, swollen, lump
  - may be much larger than it appears on the surface
  - soon becomes painful + fluctuant (wave-like/boggy when palpated)
  - ± pustule on top ± oozing pus
- **Carbuncles** - boil with multiple heads<sup>1</sup>
- **Note:** boils + carbuncles seldom cause systemic symptoms (eg fever, malaise), but may do, especially if associated with surrounding [Cellulitis, p. 306](#)
- **Folliculitis** - small boils/pustules that occur around hair follicles

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1,2</sup>

- Get history, including:
  - previous or recurrent boils - when, treatment
  - immunocompromised, diabetes
  - history of acute rheumatic fever (ARF) or valve replacement
- Examine boil(s) and surrounding skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
- Check lymph nodes
- Do vital signs + BGL in adults

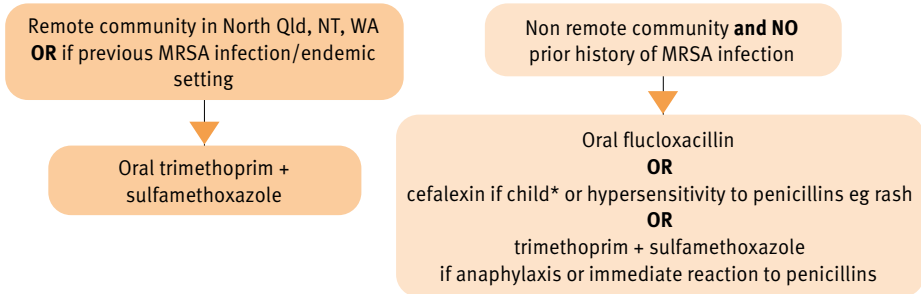
### 4. Management<sup>1,2</sup>

- Offer analgesia eg paracetamol. See [Acute pain, p. 32](#)
- Consult MO/NP if patient is/has:
  - a child
  - systemically unwell eg fever, malaise
  - carbuncles OR very large boil OR boil on face, hands, feet, perianal region or breast
  - immunocompromised
  - history of ARF or valve replacement - to discuss antibiotics (lower threshold to give)
- **Folliculitis:**
  - advise to use warm compresses - usually self-limiting
  - manage more severe cases as per boils below
- **Small boil or not yet fluctuant, advise:<sup>2</sup>**
  - apply moist heat to promote localisation + drainage
  - **do not squeeze** - this can force bacteria into the bloodstream causing sepsis or severe illness
  - check in 1–2 days to see if pus is draining. If not, may need incision and drainage (I&D)
  - wash hands after touching boil to prevent spreading infection



- **Larger fluctuant boil:**<sup>1,3</sup>
  - requires incision and drainage + take swab for MCS
- **If boil > 5 cm OR if surrounding cellulitis:**<sup>1,4</sup>
  - give oral antibiotics as per flowchart below (in addition to I&D + swab for MCS)

### Antibiotics for boil > 5 cm OR if surrounding cellulitis<sup>1,4</sup>



\*If unable to swallow capsules, as cefalexin liquid tastes better than flucloxacillin liquid

- **In all cases, advise to:**<sup>5</sup>
  - wash hands regularly with soap or alcohol based hand sanitiser
  - not share towels/other personal hygiene items
  - have regular showers/bathing
  - cover open wounds
- **If recurring boils:**<sup>5</sup>
  - emphasise hygiene measures as above. May be reinfection from close contact
  - encourage to stop smoking + improve diabetes control as relevant
  - once current infection healed, refer to next MO/NP clinic, who may consider:
    - decolonisation of Staph (confirm via nasal ± perineal swab) of patient ± household contacts

### Incision and drainage (I&D) of boil<sup>6</sup>

- Wear protective eyewear/PPE, as pus may squirt out
- Instil local anaesthetic (may not be needed if boil is superficial and ‘pointing’):
  - approach the boil from the side + slowly infiltrate the skin above the boil with lidocaine (lignocaine) 1%. Do not inject into the boil
  - local anaesthetic may not be fully absorbed due to local inflammation. May need methoxyflurane/Entonox® instead (do not keep instilling local)
- Incise over area of greatest fluctuance with No. 11 or 15 scalpel blade:
  - make a single cut long enough to drain the pus
- Drain - carefully separate the skin using a blunt instrument eg forceps, to drain the pus:
  - **do not squeeze**
  - in larger boils, use finger/forceps to break down membranes inside boil
  - irrigate cavity with sodium chloride 0.9% until clear drainage
- If boil > 5 cm in size, or cavity looks like it may close, consider loosely placing a nonadhesive wick for about 12–24 hours. Do not tightly pack (to avoid skin necrosis)
- Cover with a dry dressing. Advise patient to change as needed

S <sub>4</sub>	Lidocaine (lignocaine)			Extended authority ATSIHP/IHW/RIPRN
ATSIHP, IHW and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Injection	1% 50 mg/5 mL	Subcut	Up to 3 mg/kg (max. 200 mg)	stat
<b>Offer CMI:</b> It will hurt as it goes in. Report any drowsiness, dizziness, blurred vision, vomiting or tremors				
<b>Note:</b> Use the lowest dose that results in effective anaesthesia				
<b>Management of associated emergency:</b> Ensure resuscitation equipment readily available. Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

S <sub>4</sub>	Trimethoprim + sulfamethoxazole			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	80 + 400 mg 160 + 800 mg	Oral	<b>Adult</b> 160 + 800 mg bd <b>Child ≥ 1 month</b> 4 mg/kg (max. 160 mg) bd <i>Dose as per trimethoprim component</i>	5 days
Oral liquid	40 + 200 mg/5 mL			
<b>Offer CMI:</b> Take with food to reduce stomach upset. May cause fever, nausea, vomiting, diarrhoea, itch, rash or sore mouth. Avoid sun exposure. Report straight away if sore throat, fever, rash, cough, breathing difficulties, joint pain, dark urine or pale stools				
<b>Note:</b> If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
<b>Pregnancy:</b> Do not use in the 1st trimester or in late pregnancy				
<b>Contraindication:</b> Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment, elderly				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

S <sub>4</sub>	Flucloxacillin			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg 500 mg	Oral	<b>Adult</b> 500 mg qid <b>Child</b> 12.5 mg/kg (max. 500 mg) qid	5 days
<b>Offer CMI:</b> Take on an empty stomach ½ hour before or 2 hours after food. May cause diarrhoea, nausea or thrush				
<b>Note:</b> Can cause cholestatic hepatitis. If renal impairment seek MO/NP advice				
<b>Contraindication:</b> History of cholestatic hepatitis with dicloxacillin or flucloxacillin. Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

S4	Cefalexin		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg 500 mg	Oral	<b>Adult and child <math>\geq</math> 12 years</b> 1 g bd	5 days
Oral liquid	250 mg/5 mL		<b>Child <math>&lt;</math> 12 years</b> 25 mg/kg (max. 1 g) bd	
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, vomiting, dizziness, headache or thrush				
<b>Note:</b> If renal impairment seek MO/NP advice				
<b>Contraindication:</b> Severe or immediate allergic reaction to a cephalosporin or a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,10

## 5. Follow up

- If I&D, advise to be reviewed daily initially to assess and change dressings
- If infection does not improve within 72 hours of starting antibiotics (if given):<sup>1</sup>
  - modify treatment based on results of MCS - discuss with MO/NP

## 6. Referral/consultation

- Consult MO/NP as above

## HMP Cellulitis - adult/child

### Background<sup>1,2</sup>

- Acute serious spreading skin infection, often related to a recent break in the skin

### 1. May present with<sup>1,2</sup>

- Spreading area of red, tender, skin ±
  - malaise, fever, chills
  - tender/enlarged lymph nodes
  - red streaks/tracking from the infected area towards armpit or groin
- Can rapidly intensify

### 2. Immediate management<sup>1,2</sup>

- Do vital signs
- Screen for [Sepsis, p. 64](#). If suspected continue to manage as per **Sepsis**
- If redness is around the eye - medical emergency. See [Orbital/periorbital cellulitis, p. 288](#)

### 3. Clinical assessment<sup>1,2</sup>

- Get history, including:
  - recent skin trauma (2–3 days ago) - when, what, where eg:
    - cut, abrasion, scabies, insect bite
    - surgery, IV drug use/skin popping
    - related to water immersion eg sea, fresh, brackish, mud, coral cut, marine bite<sup>1</sup>
  - other symptoms - onset, severity, duration
  - diabetes, immunocompromised
- Do physical examination, including:
  - BGL
  - [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
  - palpate lymph nodes<sup>1</sup>
  - assess for associated abscess/[Boils, p. 302](#), although may be difficult if skin is hardened<sup>1</sup>
- Consider ‘mimics’ of cellulitis as differential diagnoses eg<sup>3</sup> [DVT, p. 124](#), [Gout, p. 326](#), septic arthritis

### 4. Management<sup>1,2</sup>

- Offer analgesia. See [Acute pain, p. 32](#)
- **Consult MO/NP promptly** if patient is/has:
  - a child
  - systemically unwell eg malaise, fever, chills
  - redness that is extensive **OR** on hand or face **OR** over a joint
  - abscess suspected
  - severe pain/tenderness, or necrosis
  - diabetes, immunocompromised

#### If severe cellulitis/patient IS systemically unwell

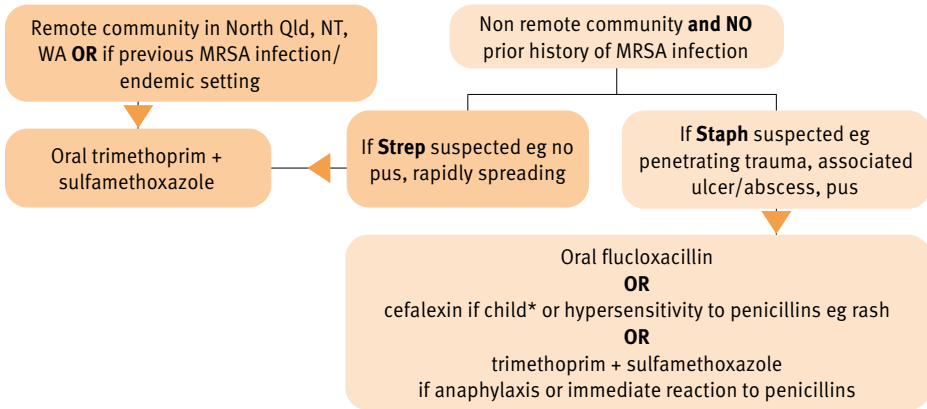
- Insert IVC x 2
- MO/NP may order:
  - blood cultures

- IV antibiotics
- evacuation/hospitalisation

### If mild cellulitis/patient is NOT systemically unwell

- If water immersion related, give antibiotics as per [Water related wounds, p. 170](#)
- Otherwise, give oral antibiotics as per flowchart below
- Dress any wound/site of injury:
  - if possible photograph to monitor response to treatment
  - **note:** resolving cellulitis may continue to spread  $\geq 24$  hours after antibiotics started
- If related to surgery/sutured wound, sutures may need removing.<sup>6</sup> Consult MO/NP
- Advise to rest and elevate the affected area for as long as it is swollen, hot and red

### Antibiotics for mild cellulitis<sup>1,7</sup>



\*If unable to swallow capsules, as cefalexin liquid tastes better than flucloxacillin liquid

S4	Trimethoprim + sulfamethoxazole		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	80 + 400 mg 160 + 800 mg	Oral	<b>Adult</b> 160 + 800 mg bd <b>Child <math>\geq 1</math> month</b> 4 mg/kg (max. 160 mg) bd <i>Dose as per trimethoprim component</i>	5 days
Oral liquid	40 + 200 mg/ 5 mL			
<b>Offer CMI:</b> Take with food to reduce stomach upset. May cause fever, nausea, vomiting, diarrhoea, itch, rash or sore mouth. Avoid sun exposure. Report straight away if sore throat, fever, rash, cough, breathing difficulties, joint pain, dark urine or pale stools				
<b>Note:</b> If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
<b>Pregnancy:</b> Do not use in the 1st trimester or in late pregnancy				
<b>Contraindication:</b> Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment, elderly				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,4,6

S <sub>4</sub>	Flucloxacillin			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg 500 mg	Oral	<b>Adult</b> 500 mg qid <b>Child</b> 12.5 mg/kg (max. 500 mg) qid	5 days
<b>Offer CMI:</b> Take on an empty stomach ½ hour before or 2 hours after food. May cause diarrhoea, nausea or thrush				
<b>Note:</b> Can cause cholestatic hepatitis. If renal impairment seek MO/NP advice				
<b>Contraindication:</b> History of cholestatic hepatitis with dicloxacillin or flucloxacillin. Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,5

S <sub>4</sub>	Cefalexin			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg 500 mg	Oral	<b>Adult</b> 500 mg qid <b>Child</b>	5 days
Oral liquid	250 mg/5 mL		12.5 mg/kg (max. 500 mg) qid	
<b>Offer CMI:</b> May cause rash, diarrhoea, nausea, vomiting, dizziness, headache or thrush				
<b>Note:</b> If renal impairment seek MO/NP advice				
<b>Contraindication:</b> Severe or immediate allergic reaction to a cephalosporin or a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,8

## 5. Follow up<sup>1</sup>

- If not evacuated, advise to be reviewed daily initially for wound care:
  - monitor redness and any other skin changes eg blistering, necrosis
  - advise to moisturise the area as it becomes less sore to prevent cracking and skin breakdown
- Consult MO/NP if not improving, pain worsening, or unusual skin changes noted:
  - ↑ pain may mean abscess, poor response to treatment, or more serious infection eg necrotising fasciitis

## 6. Referral/consultation

- Consult MO/NP as above

## HMP Shingles - adult/child

### Background<sup>1,2</sup>

- Shingles is reactivation of the varicella-zoster virus (VZV) in a person (usually > 50 years) who has had chicken pox. It causes a painful blistering rash
- Usually self-limiting but can result in persistent pain for > 3 months after rash healed or other complications eg blindness, pneumonia, hearing problems, swelling of the brain, death

### 1. May present with<sup>1,3</sup>

- Rash that develops into small blisters within 24–48 hours:
  - on 1 side of the body along a nerve pathway
  - crusts over within 5 days
- 48–72 hours prior to rash appearing, may have:
  - headache, photophobia, malaise
  - itching, tingling or severe pain in the area

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1,3</sup>

- Get history, including:
  - history of rash
  - other signs and symptoms
  - immunocompromised
  - prior chicken pox
- Do vital signs
- Examine skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
- Take swab of lesion for VZV PCR<sup>4</sup>

### 4. Management<sup>3</sup>

- **Consult MO/NP promptly** if:
  - child
  - rash on face or eye - will need evacuation/review by ophthalmologist:
    - MO/NP may consider early use of aciclovir eye ointment
  - immunocompromised
  - pregnant
- **For relief of pain:**<sup>5</sup>
  - offer paracetamol. See [Acute pain, p. 32](#)
  - advise ice packs and protective dressings may help
  - lidocaine (lignocaine) ointment or similar numbing ointment may be tried for a few days
  - if severe pain and above does not work, consult MO/NP who may order:
    - oral prednisolone, amitriptyline or oxycodone
- **If rash started < 72 hours ago**, give adult:
  - oral valaciclovir
  - advise this will reduce pain, duration of rash and complications
- If skin infection also present, treat as for [Impetigo, p. 298](#) or [Cellulitis, p. 306](#)
- Give advice on how to stop shingles from spreading to others

### Shingles advice<sup>2</sup>

- Cover the rash (if possible):
  - if child, exclude from school if unable to cover, or until no new blisters in 24 hours<sup>6</sup>
- Avoid touching or scratching the rash
- Wash hands often to prevent the virus from spreading
- **Avoid contact with these people until the rash has developed crusts:**
  - pregnant women who have never had chickenpox or the chickenpox vaccine (although not harmful to your unborn baby if you have shingles)
  - premature or low birth weight babies
  - children who have not had chickenpox or the chickenpox vaccine
  - people with weakened immune systems eg:
    - chemotherapy
    - taking medicines that weaken their immune system
    - had a transplant
    - living with HIV
- You can still receive the zoster vaccine at the recommended age<sup>1</sup>

S4	Valaciclovir			Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP					
RIPRN may proceed					
Form	Strength	Route	Dose	Duration	
Tablet	500 mg	Oral	<b>Adult</b> 1 g tds	7 days	
<b>Offer CMI:</b> Drink plenty of fluids - at least 1.5 L/day. May cause dizziness or confusion					
<b>Note:</b> If renal impairment seek MO/NP advice					
<b>Pregnancy:</b> Aciclovir preferred. May be used from 36 weeks gestation					
<b>Contraindication:</b> Allergy to valaciclovir or aciclovir					
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>					3-7

## 5. Follow up

- Advise to see MO/NP at next clinic

## 6. Referral/consultation<sup>4</sup>

- Probable or confirmed shingles requires notification to your Public Health Unit ☺



# HMP Tinea/ringworm - adult/child

## Jock itch, athlete's foot, fungal infection of nail

### 1. May present with<sup>1,2</sup>

<b>Ringworm</b> eg tinea corporis, tinea faciale	<ul style="list-style-type: none"> <li>• 1 or more ring shaped red patches/plaques. Has central clearing as it expands</li> <li>• Border well-defined, slightly raised, sometimes scaly</li> <li>• Usually on trunk, face, arms or legs</li> <li>• Often itchy</li> </ul>
<b>Scalp ringworm</b> Tinea capitis	<ul style="list-style-type: none"> <li>• Itchy, scaly plaques or patches on scalp</li> <li>• Patches of hair loss; black dots where hair broken off</li> <li>• May be a hardened, boggy, pustular mass which looks like a boil</li> <li>• Most common in 3–7 year olds</li> </ul>
<b>Jock itch</b> Tinea cruris	<ul style="list-style-type: none"> <li>• Red itchy, scaly rash on upper thigh and groin; not usually on scrotum</li> <li>• Most common in adolescent and adult males</li> <li>• Risk factors - sweating in groin, occlusive clothing, immunocompromised</li> </ul>
<b>Athletes foot</b> Tinea pedis	<ul style="list-style-type: none"> <li>• Itching or burning ± odour of feet, especially between toes</li> <li>• Scaling, maceration or sloughing of skin</li> <li>• Often spreads to nails</li> </ul>
<b>Fungal infection of nail</b> Onychomycosis	<ul style="list-style-type: none"> <li>• Nail discolouration + thickening, separation of nail from nail bed</li> </ul>

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>2</sup>

- Get history, including:
  - onset, duration, itchy/burn/tenderness
  - prior infections/treatment, animal contact
  - immunocompromised, diabetes
- Do vital signs
- Examine skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
- If jock itch - check feet as possible source of infection:
  - consider differential diagnosis of [Candidiasis \(skin\), p. 313](#) - note treatment is the same
- Look for signs of a secondary bacterial infection eg tender/red skin, weeping/glistening, crusts
- Consider other diagnoses (can be hard to tell the difference) eg eczema, dermatitis, psoriasis

### 4. Management<sup>1,2</sup>

- If secondary bacterial skin infection, treat first. See [Impetigo, p. 298](#) or [Cellulitis, p. 306](#)
- Refer to next MO/NP clinic if:
  - widespread skin involvement
  - is on the nails, scalp, palms or soles
  - immunocompromised
  - recurrent infection or has not responded to topical treatment
  - MO/NP may order oral griseofulvin or terbinafine + fungal MCS (skin scraping from edge, nail clippings or plucked hair)

- Treat all other tinea with antifungal cream eg:<sup>1</sup>
  - terbinafine (preferred) or miconazole
- Offer advice/preventative measures:<sup>2</sup>
  - keep area as dry as possible eg wear loose clothing, dry well between toes
  - avoid walking barefoot in public showers, put moist footwear in sun to dry
  - improve diabetes/weight control as relevant, avoid infected pets/farm animals
  - is spread by direct contact (via break in skin) with infected people, pets or contaminated objects eg combs, clothing, footwear, bedding or shared towels

S2	Terbinafine			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP and RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Cream	1%	Topical	Apply a thin layer once or twice a day	1–2 weeks
<b>Offer CMI:</b> Clean and dry affected areas well before applying to the affected and surrounding skin. For treatment to be successful you have to use it regularly. Do not cover with a dressing. Complete the full course even if your skin looks better				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,4

S2	Miconazole			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP and RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Cream	2%	Topical	Apply a thin layer bd	Continue using for 2 weeks after symptoms have gone
<b>Offer CMI:</b> Apply to the affected and surrounding skin. Pay particular attention to skin folds. For treatment to be successful you have to use it regularly				
<b>Management of associated emergency:</b> Consult MO/NP				5

## 5. Follow up<sup>1</sup>

- Advise to be reviewed at next MO/NP clinic if no improvement after 2 weeks

## 6. Referral/consultation

- Consult MO/NP as above

## HMP Candidiasis (skin) - adult/child

### 1. May present with<sup>1,2</sup>

- Red itchy rash/patches ± small blisters and pustules
- Most common in warm/moist areas eg axillae, groin, under breasts, abdominal folds, nappy area

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1,2</sup>

- Get history, including:
  - onset, duration, prior infections/treatment, other symptoms
  - pre-disposing factors eg:
    - diabetes, immunocompromised
    - taking antibiotics or corticosteroids
    - obesity, immobility
- Do vital signs + BGL in adults
- Examine skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)

### 4. Management<sup>1,2</sup>

- Refer to next MO/NP clinic if widespread or immunocompromised:
  - may order oral fluconazole ± MCS
- Otherwise, treat with antifungal cream eg miconazole
- Advise:
  - keep skin as clean and dry as possible
  - improve diabetes/weight control as relevant

S2	Miconazole			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, MID and RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Cream	2%	Topical	Apply a thin layer bd	Continue using for 2 weeks after symptoms have gone
<b>Offer CMI:</b> Apply to the affected and surrounding skin. Pay particular attention to skin folds. For treatment to be successful you have to use it regularly				
<b>Management of associated emergency:</b> Consult MO/NP				1-3

### 5. Follow up<sup>1</sup>

- Advise to be reviewed at next MO/NP clinic if no improvement after 2 weeks

### 6. Referral/consultation

- Consult MO/NP as above

# HMP *Tinea versicolor* (pityriasis versicolor) - adult/child

## 1. May present with<sup>1,2</sup>

- Flat patches of hyper/hypo-pigmented skin eg pink, tan, brown or red:
  - in dark skinned people can cause light patches of skin
  - ± fine scales
- Common on chest, back, neck, upper arms (not face)
- Common in adolescents and young adults in tropical climates/heavy sweating

## 2. Immediate management Not applicable

## 3. Clinical assessment<sup>2</sup>

- Get history
- Do vital signs
- Examine skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
- Consider other diagnoses eg [Tinea/ringworm, p. 311](#), secondary [Syphilis, p. 468](#), [Leprosy, p. 315](#)

## 4. Management<sup>1-3</sup>

- Treat with an antifungal shampoo eg:
  - selenium sulfide shampoo (Selsun Gold®) - can buy from supermarket:
    - apply to wet skin, leave on for 10 minutes or overnight. Repeat for 7–10 days<sup>1</sup>
  - ketoconazole shampoo
  - econazole foaming liquid
- Advise:
  - wash whole body with the antifungal shampoo, including the hair
  - caused by yeast infection, that is normally present on skin
  - treatment is only needed for cosmetic reasons
  - it may take several weeks or months for skin to return to its normal colour
  - recurrence is common and repeated treatment may be needed

S2	Ketoconazole shampoo			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP and RIPRN may proceed				
RN may administer; for supply see <a href="#">RN supplying, p. 11</a>				
Form	Strength	Route	Dose	Duration
Shampoo	2%	Topical	Apply, leave for 5 minutes then wash off	Repeat for up to 5 days
<b>Offer CMI:</b> May cause burning, stinging, itch or redness. A single application may be effective				
<b>Pregnancy:</b> Avoid; safe in breastfeeding				
<b>Management of associated emergency:</b> Consult MO/NP				1,4

## 5. Follow up<sup>1</sup>

- Advise to see MO/NP if persistent. Oral fluconazole may be required

## 6. Referral/consultation

- Consult MO/NP as above

# Leprosy (Hansen's disease) - adult/child

## Recommend<sup>1</sup>

- Consider leprosy in patients with persistent undiagnosed skin lesions in Northern Australia

## 1. May present with<sup>1,2</sup>

- Lighter (or reddish) patches of skin/ulcer with loss of sensation
- Thickened or enlarged peripheral nerve with loss of sensation ± weakness of the muscles supplied by that nerve

## 2. Immediate management Not applicable

## 3. Clinical assessment<sup>1,2</sup>

- Get history, including:
  - onset, duration, location, loss of sensation of lesions
  - other signs or symptoms
- Do vital signs
- Examine lesions. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
  - use cotton wool to test for sensation on lesion(s) - roll the cotton wool to a point and touch the skin so the point bends (don't stroke the skin)<sup>2</sup>
  - palpate for thickened or enlarged nerves - feel wrist, elbow or behind knee, neck

## 4. Management<sup>1,2</sup>

- If leprosy suspected, consult MO/NP who may consider:
  - leprosy PCR - biopsy of lesion (preferred) **OR** if an open lesion, swab. Seek advice from pathology
  - **Note:** *Guidelines for the control of leprosy in the Northern Territory 2018* provide instructions on taking pathology and detailed physical examination for leprosy <https://digitallibrary.health.nt.gov.au/prodjsmui/bitstream/10137/526/3/Control%20of%20Leprosy%20in%20the%20Northern%20Territory%20Guidelines.pdf>
- If leprosy suspected/confirmed, MO/NP will treat in consultation with specialist. Requires long-term medication and follow up

## 5. Follow up<sup>2</sup>

- Monitor medicine regime and provide support to patient to complete course as needed

## 6. Referral/consultation<sup>3</sup>

- Confirmed leprosy requires notification to your Public Health Unit ①

## HMP Scabies - adult/child

### Recommend<sup>1</sup>

- Treat scabies promptly. Secondary skin infections from scratching can cause [APSGN, p. 511](#) and [ARF, p. 515](#)

### Background<sup>1</sup>

- Caused by infestation with scabies mite. Spread by close physical contact
- The mite causing dog scabies (mange) does not affect humans<sup>1</sup>
- See *National healthy skin guideline* <https://infectiousdiseases.telethonkids.org.au/resources/skin-guidelines/> for further information + photos of scabies and infected scabies/impetigo

## 1. May present with<sup>1</sup>

- **Scabies:**
  - small bumps/papules, blisters ± tiny burrows
  - very itchy, worse at night
  - **commonly found** - in webbing of fingers/toes, elbows, wrists
  - **other common sites** - armpit, belt line, abdomen, breasts, buttocks, thighs, genitals
  - **infants** - pustules on palms and soles of feet (or widespread + head, neck)
- **Crusted (Norwegian) scabies** (thousands of mites which shed with the skin):
  - scaling and crusting on the skin; often not itchy
  - creamy colour
  - few patches or can cover whole body
  - usual on buttocks, elbows and arms; palms and soles of feet may be cracked
  - may look similar to [Tinea/ringworm, p. 311](#), psoriasis, eczema or dermatitis
  - **highly infectious**

## 2. Immediate management Not applicable

## 3. Clinical assessment<sup>1</sup>

- Get history, including:
  - immunocompromised
- Do vital signs
- Examine skin:
  - see [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)
  - look for signs of infected scabies (impetigo):
    - pus or honey coloured filled bumps/blisters, weeping/glistening/redness/crusts
- If crusted (Norwegian) scabies suspected:
  - take skin scraping for microscopy to confirm presence of mites
  - ask about living arrangements - is very infectious

## 4. Management<sup>1</sup>

### Scabies:

- Treat with permethrin (Lyclear®) cream:
  - can be applied to scratched/broken skin. Only avoid if obvious irritation occurs
  - give **Scabies advice**
- If infected scabies, treat at same time. See [Impetigo, p. 298](#)

**Scabies advice<sup>1,2</sup>**

**Applying Lyclear®** - apply first treatment in clinic if needed

- Apply after shower in evening to **whole body** including:
  - face + scalp (not lips and eyes)
  - between fingers, toes, soles of feet, under nails (use nail brush), behind ears, genitalia
  - in all body creases eg elbows, knees etc
- Leave on overnight. Or if prior treatment failure (and > 6 months old), leave on for 24 hours
- Reapply if washing hands. Put on child's hands again before bed
- **If infant < 6 months** - cover hands to avoid child sucking the medication. Leave on for 8 hours
- Repeat in 7 days

**Other advice<sup>1-3</sup>**

- Treat household/close contacts at the same time, even if no symptoms
- Wash clothes/bedding morning after treatment + dry in the sun (may help)
- Keep home from school/childcare until the day after 1st treatment<sup>4</sup>
- Itch can persist 2–4 weeks after treatment. If problematic, MO/NP may order a corticosteroid cream

**Crusted (Norwegian) scabies<sup>1</sup>**

- If severe, patient may need to be hospitalised
- Consult MO/NP, who may seek infectious disease specialist advice + order:
  - ivermectin
  - **PLUS** 2nd daily benzyl benzoate lotion (can use Lyclear® if not available)
  - **PLUS** Calmurid® cream (10% urea, 5% lactic acid in sorbolene cream) - to reduce scaling/soften skin crusts:
    - use on days when benzyl benzoate not applied
    - apply after shower to crusted/thickened skin
    - the next day, soak/scrub the crusts with a sponge, then apply benzyl benzoate
- Prompt treatment and community control efforts are essential:
  - can cause scabies outbreaks - get advice from Public Health Unit

**Crusted (Norwegian) scabies advice<sup>1</sup>**

- Wash clothes/sheets/towels in hot water **daily** and dry in the sun **OR** put in sealed plastic bag for 8 days to kill the mites
- Vacuum the floors and furniture in the house + the floors and seats in cars, to remove mites + skin flakes
- Treat household/close contacts for scabies + regularly check for scabies

Unscheduled		Permethrin (Lyclear®)		
ATSIHP, IHW, IPAP, MID, RIPRN and RN may proceed				
Form	Strength	Route	Dose	Duration
Cream	5% 30 g tube	Topical	> 12 years to adult up to 1 tube 5–12 years up to 1/2 tube 1–5 years up to 1/4 tube < 12 months up to 1/8 tube	Apply on day 1 Repeat in 7 days
<b>Offer CMI:</b> May temporarily increase itch, redness and swelling				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

5

Unscheduled		Benzyl benzoate		
ATSIHP, IHW, IPAP, MID, RIPRN and RN may proceed				
Form	Strength	Route	Dose	Duration
Lotion	25%	Topical	<b>Adult</b> - apply undiluted <b>2–12 years</b> - dilute with equal part water <b>6 months–2 years</b> - dilute with 3 parts water	<b>Crusted scabies</b> Apply every 2nd day for 1 week, then 2–3 times a week until cured
<b>Offer CMI:</b> May cause stinging or burning sensation when first applied. Do not use on acutely inflamed, raw or weeping skin. May be irritating to face and genitals				
<b>Pregnancy:</b> Permethrin preferred				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">1,6</span>				

S4	Ivermectin			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	Strength	Route	Dose	Duration
Tablet	3 mg	Oral	<b>Adult and child &gt; 15 kg</b> 200 microg/kg (rounded up to the nearest 3 mg)	<b>Scabies if topical treatment fails or is contraindicated</b> Once. Repeat in 1 week <b>Crusted scabies</b> Once on days 1, 2 and 8
<b>Offer CMI:</b> Take with fatty food. May cause headache, fatigue, dizziness, abdominal pain, vomiting or diarrhoea. Resistance can occur after repeated use				
<b>Pregnancy:</b> Do not use. Safe in breastfeeding <sup>5</sup>				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a> <span style="float: right;">1,7</span>				

## 5. Follow up

### Scabies

- If itch still present > 4 weeks after treatment:<sup>2</sup>
  - check applied Lyclear® correctly, contacts were treated and household measures followed
  - consider trying benzyl benzoate lotion instead<sup>3</sup>
  - **OR** consult MO/NP who may consider oral ivermectin/specialist referral/other diagnosis<sup>1-3</sup>

### Norwegian/crusted scabies

- If not hospitalised, provide ongoing treatment support until cured (daily initially)<sup>1</sup>

## 6. Referral/consultation

- If crusted (Norwegian) scabies consult Public Health Unit. **Note:** is notifiable in NT ①



## Head lice/nits - adult/child

### 1. May present with<sup>1</sup>

- Itchy scalp and neck
- White eggs or lice in hair
- Sores on head

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1</sup>

- Look in hair/scalp for:
  - eggs (nits) attached to the base of hairs
  - moving louse - use **wet combing** to detect
  - infected sores from scratching:
    - if sores, look for signs of [APSGN, p. 511](#) and [ARF, p. 515](#)

#### Wet combing<sup>1</sup>

- Apply a generous amount of hair conditioner to wet hair. Conditioner stuns the lice for 20 minutes
- De-tangle hair, divide into sections
- Comb sections with a fine-toothed comb eg nit comb
- Wipe conditioner off the comb onto paper towel or tissue. Look for lice and nits

### 4. Management<sup>1</sup>

- If infected sores treat at the same time. See [Impetigo, p. 298](#)
- Advise parent/carer to treat with wet combing method or head lice treatment (insecticide) below
- **Wet combing method:**
  - repeat wet combing (as above) daily until no lice are found
  - only about 40% success rate
- **Head lice treatment:**
  - use a topical insecticide eg:
    - malathion (KP24®), or
    - pyrethrins + piperonyl butoxide eg Banlice Mousse® or Pyrenel Foam®

#### Head lice treatment (insecticide)

- Apply as per instructions on container
- Repeat treatment in 7 days
- Use wet combing the day after each treatment to check for live lice:
  - if live lice are found, despite correctly applied treatment, the lice may be resistant
  - try another topical insecticide OR use wet combing method
- In between treatments, use the wet combing method twice. Remove eggs from the scalp with the fine-toothed comb or pull off with fingernails
- **Advise parent/carer:**
  - repeat wet combing weekly for several weeks after cure to detect recurrence
  - wash pillow cases and comb/brush in hot water
  - check household contact using wet combing method and treat if needed
  - advise child's school of the infestation (child can return to school after initial treatment)

## 5. Follow up

- Advise to return if lice continue regardless of treatment

## 6. Referral/consultation

- Consult MO/NP if persistent

## HMP Nappy rash - adult/child

### Background<sup>1</sup>

- Usually caused by contact dermatitis from exposure to excess moisture and prolonged contact with faeces and urine

### 1. May present with<sup>1</sup>

- Rash in nappy area:
  - mild - scattered pinpoint red papules
  - moderate - mild redness, some maceration and chafing
  - severe - extensive redness, maceration, superficial erosions + discomfort/pain

### 2. Immediate management Not applicable

### 3. Clinical assessment

- Get history, including:
  - duration of rash
  - recent diarrhoea/frequent stools
  - nappy changing - frequency, type of nappy used
  - use of fragrant powders, creams, soaps/detergents
- Examine skin. See [Skin assessment - adult, p. 21](#) or [Skin assessment - child, p. 485](#)

### 4. Management<sup>1,2</sup>

- If severe, consider consulting with child health nurse, midwife or MO/NP
- Discuss nappy change practices to help treat and prevent nappy rash eg:<sup>2</sup>
  - use disposable nappies if possible:
    - if unable/prefers not to, advise to change nappies 2 hourly, avoid plastic over-pants and liners
  - frequent nappy changes
  - periods of nappy free time
  - apply a barrier cream, ointment or paste at every nappy change:
    - eg zinc and castor oil, zinc oxide
  - use fragrant free wipes or plain water/soap substitute. Do not wipe excessively
- Consider non-accidental injury or neglect where presentation is inconsistent with history or is unexpected eg scaled skin, bruising, object shaped lesions in nappy area, poor hygiene, developmental delay.<sup>2</sup> See [Child protection, p. 551](#)
- Consider secondary infection if there are:<sup>2</sup>
  - shiny red patches with satellite lesions in nappy area, groin ± oral thrush ± rash persisting for > 3 days. Consider treating for [Candidiasis \(skin\), p. 313](#)
  - pustules, erosions, ulcers or weeping - suspect bacterial infection:<sup>1</sup>
    - take swab for MCS to confirm
    - treat localised and widespread infections with oral antibiotics as per [Impetigo, p. 298](#)

## 5. Follow up

- If moderate/severe, advise to be reviewed daily initially. Otherwise review if concerned

## 6. Referral/consultation

- Consult child health nurse/midwife/MO/NP as above

# Diabetic foot infection

## HMP Diabetic foot infection ± osteomyelitis - adult

### Recommend<sup>1</sup>

- Diabetic foot infection should always be considered serious. It is often worse than it appears
- Be alert for Charcot foot - a serious + potentially lower limb-threatening complication of diabetes

### 1. May present with<sup>1</sup>

- For an ulcer to be considered infected, ≥ 2 of the following need to be present:
  - local swelling or localised hardening of soft tissue
  - redness extending > 0.5 cm in any direction from the wound
  - local tenderness or pain
  - local warmth
  - purulent discharge
- Charcot foot - localised unilateral swelling ± pain, erythema, deformity, warmth

### 2. Immediate management

- Do vital signs
- Screen for [Sepsis, p. 64](#)

### 3. Clinical assessment

- Consider other causes of inflammation eg trauma, gout, thrombosis<sup>1</sup>
- Get history, including:<sup>1</sup>
  - peripheral neuropathy, peripheral arterial disease, foot deformity (high risk for amputation)
  - onset of ulcer
  - past episodes, when, treatment
  - fevers, rigors or other systemic symptoms
  - current medications, adherence
  - recently taken antibiotics
  - smoking
  - recent trauma or surgery to foot/ankle
- Do physical examination, including:
  - BGL
  - palpate pedal pulses - bounding pulses may indicate Charcot foot
  - test for protective sensation with monofilament if available
  - measure redness from wound margin - if ≤ 2 cm + involves only the skin + subcutaneous tissue with no systemic features - indicates mild infection<sup>1</sup>

- note size, location + depth of ulcer:<sup>1</sup>
  - probe using a sterile probe, with slow gentle force. Assess all extents of the ulcer. If bone can be probed - indicates high risk of osteomyelitis, consider x-ray
- Take wound swab for MCS, see [How to take a wound swab, p. 324](#)<sup>1</sup>
  - do not take MCS from non-infected ulcers

#### 4. Management

- Consult MO/NP in all cases, who may advise:<sup>1,2</sup>
  - antibiotics ± evacuation/hospitalisation depending on severity
  - **note:** if osteomyelitis MO/NP may order IV antibiotics
  - ± bloods - HbA<sub>1c</sub>, FBC, CRP, UE + GFR, glucose
  - x-ray if available to rule out osteomyelitis
  - if vascular status not adequate or osteomyelitis, referral to vascular or orthopaedic surgeon
- Offer analgesia. See [Acute pain, p. 32](#)
- If mild infection treated in community, MO/NP may order antibiotics eg:<sup>1</sup>
  - trimethoprim + sulfamethoxazole - MRSA/remote area in North Qld, NT, WA
  - flucloxacillin - other areas/low risk of MRSA
- If not evacuated, refer/manage in collaboration with closest high risk foot clinic, for advice on:<sup>1</sup>
  - interventions - offloading pressure devices are critical eg soft boots, removable cast<sup>2</sup>
  - wound care/dressing regime eg initial antimicrobial dressing<sup>2</sup>
  - management of hyperglycaemia, vitamin C + thiamine supplements if indicated
- Advise patient to rest, avoid weight-bearing activities + encourage smoking cessation if appropriate<sup>1</sup>

S4	Trimethoprim + sulfamethoxazole			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	Strength	Route	Dose	Duration
Tablet	80 + 400 mg 160 + 800 mg	Oral	160 + 800 mg bd	As per MO/NP Typically 1–2 weeks is sufficient
<b>Offer CMI:</b> Take with food to reduce stomach upset. May cause fever, nausea, vomiting, diarrhoea, itch, rash or sore mouth. Avoid sun exposure. Report straight away if sore throat, fever, rash, cough, breathing difficulties, joint pain, dark urine or pale stools				
<b>Note:</b> If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
<b>Pregnancy:</b> Do not use in the 1st trimester or in late pregnancy				
<b>Contraindication:</b> Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment, elderly				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1:3

#### 5. Follow up

- If not evacuated:
  - review daily initially as patient can deteriorate rapidly
  - check MCS result + contact MO/NP if need to modify antibiotics based on results
  - continue antibiotics until infection is resolved but not necessarily until the ulcer is healed<sup>1</sup>
- As per MO/NP/diabetes team/high risk foot team

#### 6. Referral/consultation

- Refer to diabetes educator, podiatrist, high risk foot clinic if available

# Chronic wounds

## HMP Chronic wounds - adult

### 1. May present with

- Chronic wound/ulcer ± infection

### 2. Immediate management Not applicable

### 3. Clinical assessment

- **Ask about wound:**<sup>1</sup>
  - onset eg spontaneous, traumatic, caused by foreign body
  - duration
  - what concerns do they have about their wound eg pain, restricted mobility, swelling, exudate leakage, odour
  - treatments already used + response
  - any recent radiotherapy or surgery near wound
- **Get medical/surgical history,** including:<sup>1</sup>
  - any risk factors eg diabetes, smoking, alcohol intake, heart disease, blood disorders, rheumatoid arthritis, disorders affecting nutrition
    - **note:** if diabetic + suspected infection, go to [Diabetic foot infection, p. 321](#)
  - current medications + allergies
  - previous ulcers, when, treatment, any imaging/investigations
- Do vital signs + BGL
- **Do physical examination** + look for signs of:<sup>1</sup>
  - vascular disease eg oedema, ↓ or absent lower limb pulses, pale, cold or tender foot
  - anaemia eg pallor
  - systemic infection eg fever, ↑ HR, swollen lymph nodes
  - dehydration, signs of malnutrition
- If dressing in situ - remove gently. If adhered soak off with warm sodium chloride 0.9%

#### Examine wound<sup>1</sup>

- **Tissue** - at ulcer base eg necrosis, slough, hypergranulation:
  - if visible deeper tissue eg bone, tendon or muscle - measure length, width + depth
  - probe using a sterile probe:
    - foot ulcers - with slow gentle force, assess all extents of the ulcer. If bone can be probed - indicates high risk of osteomyelitis,<sup>1</sup> see [Diabetic foot infection, p. 321](#)
    - sacrum, buttock or hip area - check for sinus tracts, bone, cavity
- **Infection/inflammation** - check for delayed healing, ↑ pain, exudate, odour + spreading cellulitis:
  - if signs of infection take wound swab for MCS before starting antibiotics<sup>1</sup>
  - **note:** do not take MCS from noninfected ulcers/wounds
- **Moisture balance** - any exudate, amount + type eg serous, purulent, scant
- **Edge + skin within 4 cm of wound edge** eg flat, sloping, indistinct, punched out, not attached

### How to take a wound swab<sup>2</sup>

- Cleanse + debride the wound with warm sterile sodium chloride 0.9%
- Moisten swab tip with sterile sodium chloride 0.9% + advise patient it may cause discomfort
- Firmly press swab tip into cleanest area - rotate for 5 seconds with sufficient pressure so that tissue fluid is produced. Avoid slough or necrotic tissue
- On pathology form - note wound location, duration, any significant comorbidities, clinical indication eg signs/symptoms + current or recent antibiotic use

## 4. Management<sup>3</sup>

- Offer analgesia. See [Acute pain, p. 32](#)
- Consult MO/NP for ongoing management if:
  - non-healing leg ulcer
  - suspected osteomyelitis or signs of infection
  - wound on hands or face, with extensive necrotic tissue or exposed bone
- MO/NP may seek specialist advice + order:
  - antibiotics, bloods
  - evacuation/hospitalisation depending on severity/cause

### Wound care + dressing<sup>4</sup>

- Cleanse + debride as needed with warm sterile sodium chloride 0.9%
- Use the table below to guide dressing options for the amount of exudate

Dressings for optimal moisture balance				
Dry Wounds	Minimal Exudate	Moderate Exudate	Heavy Exudate	Fragile skin or extensive wound
<ul style="list-style-type: none"> <li>• Hydrogel</li> </ul>	<ul style="list-style-type: none"> <li>• Semipermeable film</li> <li>• Hydrocolloid + other polymer</li> <li>• Thin foam</li> </ul>	<ul style="list-style-type: none"> <li>• Foam</li> <li>• Absorbent pad</li> </ul>	<ul style="list-style-type: none"> <li>• Super absorbent pad</li> <li>• Alginate fibre</li> <li>• Gelling fibre</li> </ul>	<ul style="list-style-type: none"> <li>• Wound contact layer or tulle eg silicone mesh</li> <li>• Low adherent</li> <li>• Thin foam</li> </ul>

- **Consider other wound features eg:**
  - **cavity** - may need packing, be mindful to avoid putting pressure on tissues or blocking exudate drainage. Use a dressing that does not lose integrity when saturated + can be removed in 1 piece without causing tissue trauma. Always leave a 'tail' of dressing outside the wound
  - **infected** - use antimicrobial dressing for shortest time possible, review after 2 weeks:
    - if infection has resolved change to non-antimicrobial dressing<sup>2</sup>
  - **malodorous** - more frequent dressing changes + wound cleansing to ↓ odour. Consider debridement, foam dressing or antimicrobial dressing, topical metronidazole gel as per MO/NP/wound specialist
  - **hypergranulation tissue** - if bleeds easily, soft and spongy + exceeds the margins, consider hypertonic saline gauze or foam dressings with silver. Address the moisture, microbial load + ↓ surface friction of the dressings
  - **pain** - dressings with silicone are often comfortable + can be removed with minimal trauma eg foams with a silicone contact surface or a silicone wound contact layer
- Apply a secondary dressing if needed for absorption/protection + consider protecting skin around the wound eg cleanse with pH appropriate skin cleanser, avoid soap
- Most dressings do not need to be changed until at least 75% saturated
- Reassess dressing regime within a week + then at each dressing change. Unless there is a clear

problem eg pain, excessive exudate, do not alter regime for at least 2 weeks or as per MO/NP/wound specialist

- Advise patient about wound healing as indicated:<sup>2</sup>
  - general dietary advice, protein + energy requirements are higher for chronic wounds. Consider/offer referral to dietitian
  - cigarette smoking can delay healing + ↑ risk for infection. Encourage to stop at each review

## 5. Follow up

- As per MO/NP/wound specialist or podiatrist

## 6. Referral/consultation

- As above

# Swollen/painful joints

## HMP Acutely swollen/painful joint - adult

### Recommend<sup>1,2</sup>

- The causes can be difficult to diagnose. Be suspicious of septic arthritis (an orthopaedic emergency), acute osteomyelitis + [ARF, p. 515](#)

### 1. May present with<sup>1-3</sup>

- Painful, red + swollen joint(s) ± fever, malaise

### 2. Immediate management<sup>1</sup>

- Vital signs
- Screen for [Sepsis, p. 64](#)

### 3. Clinical assessment<sup>1,2</sup>

#### Red flags<sup>1,2</sup>

- Acute swelling, redness and marked ↓ in range of motion of joint
- Systemic symptoms eg ↑ HR, fever, malaise, night sweats, weight loss<sup>3</sup>
- Recent joint surgery
- Recent injury/wound (can be minor)

- Get history, including:
  - pain - sudden or gradual onset
  - past episodes ± diagnosis
  - ARF/RHD diagnosis or family history of<sup>1</sup>
  - other symptoms eg fatigue, skin infection, sore throat<sup>3</sup>
  - IV drug use<sup>2</sup>
- Examine joints:
  - swelling, tenderness, warmth + mobility
  - if the pain seems out of proportion to the joint signs - consider [ARF, p. 515](#)
- Check for swollen lymph nodes

## 4. Management<sup>1,2</sup>

- Be suspicious of septic arthritis, acute osteomyelitis and [ARF](#), p. 515
- If highly suggestive of gout, see [Gout](#), p. 326
- If suspected sprain/soft tissue injury, see [Sprains/soft tissue injury](#), p. 159
- Offer analgesia. See [Acute pain](#), p. 32
- Contact MO/NP if any **Red flags**, who may advise:
  - blood cultures, IV antibiotics
  - x-ray
  - evacuation/hospitalisation ± referral to orthopaedic specialist

## 5. Follow up

- As per MO/NP

## 6. Referral/consultation

- As above

## HMP **Gout** - adult

### Background

- Gout occurs from deposits of urate crystals in the body. Causes joint pain + swelling<sup>1</sup>

### 1. May present with<sup>1,2</sup>

- Painful, red + swollen joint(s) eg big toe, knee
- Attack of gout

### 2. Immediate management Not applicable

### 3. Clinical assessment<sup>1,2</sup>

- Get history, including:
  - previous diagnosis, past episodes of gout + treatment eg urate lowering medicines
- Vital signs
- Examine joint(s) for swelling, tenderness, warmth and mobility:<sup>2</sup>
  - hard nodules over elbows, knees + feet may indicate chronic gout<sup>1</sup>

### 4. Management<sup>1,2</sup>

- Always consider another cause of the pain. See [Swollen/painful joint](#), p. 325
- Consult MO/NP if:
  - systemic symptoms eg ↑ HR, fever, malaise, night sweats, weight loss
  - first attack of gout (can mimic septic arthritis, an orthopaedic emergency<sup>1</sup>)
  - re-presentation for this attack
- If acute attack of previously diagnosed gout, offer short-term pain relief:<sup>1-3</sup>
  - NSAID eg ibuprofen or indomethacin for 3–5 days. See [Acute pain](#), p. 32
  - **OR** colchicine as a single 1 day course (start as soon as possible)<sup>3</sup>



S <sub>4</sub>	Colchicine			Extended authority
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Tablet	500 microg	Oral	1 mg then 500 microg 1 hour later	stat
<b>Offer CMI:</b> May take up to 48 hours for inflammation to subside. May cause diarrhoea, nausea, abdominal discomfort, vomiting, sore throat, rash or GI bleeding. If already taking colchicine wait at least 12 hours before next dose				
<b>Note:</b> If renal or hepatic impairment, seek MO/NP advice				
<b>Contraindication:</b> Blood dyscrasias, severe GI disease, corneal wounds or ulcers				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				

1,3

## 5. Follow up

- Advise to be seen at next MO/NP clinic for ongoing management

## 6. Referral/consultation

- As above

# Mosquito borne diseases

## HMP Mosquito borne diseases - adult/child

### Dengue fever, Ross River virus, Barmah Forest virus, malaria

#### Recommend

- Consider testing for mosquito borne diseases if fatigue, malaise + joint pain where other causes have been excluded
- Have a low threshold for malaria testing from January to June (inclusive) in the Torres Strait<sup>1</sup>

#### Background

- Most common Australian mosquito borne diseases include Ross River virus (RRV), Barmah Forest virus (BFV) + dengue (only in tropical regions + local transmission can occur if the virus has been introduced by an infected person who has returned from endemic countries)<sup>2-4</sup>
- Also see *Mosquito borne diseases* <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/diseases/mosquito-borne/resources>

## 1. May present with

- Flu-like symptoms eg fever, painful/swollen joints, headache, fatigue, rash<sup>3,4</sup>
- Probable dengue** if patient resides in or travelled to endemic area, has a fever + 2 of the following:<sup>2</sup>
  - headache
  - nausea, vomiting
  - arthralgia, myalgia (joint/muscle aches and pains)
  - rash
- Consider malaria**<sup>1</sup> if travelled to endemic area or reside in Torres Strait +
  - fever > 38 if adult or > 38.5 if child + no other obvious cause of fever
  - fever 'attacks' - abrupt onset of uncontrollable shivering + within an hour or so high fever

- develops, followed by profuse sweating as fever subsides a few hours later
- between attacks there are few other symptoms
- other common symptoms - vomiting, diarrhoea, muscle pains, abdominal pains
- severe malaria can occur if untreated eg cerebral malaria, severe anaemia, renal failure, shock

## 2. Immediate management Not applicable

## 3. Clinical assessment

### If probable dengue<sup>2</sup>

- **Notify Public Health Unit immediately** upon clinical suspicion
- Check for signs of severe dengue:
  - dehydration
  - confusion
  - bleeding eg mouth + gums, heavy menstrual bleeding in females
  - contact MO/NP promptly
- Get travel history + determine if the case was acquired overseas or locally:
  - have they travelled overseas within 2 weeks of onset of symptoms
- Note the date of onset of symptoms, this identifies which diagnostic test to do eg:
  - dengue PCR 0–5 days (advise patient a test for Zika will also be done by pathology)
  - NS1 antigen 0–9 days
  - IgM - from day 5 onwards
  - IgG - from day 8 onwards
  - also take LFT and FBC (↓ WCC, ↓ platelets and altered LFT suggest dengue) +
    - note the date of onset of symptoms + if recent overseas travel on the pathology form

### If malaria suspected<sup>1</sup>

- Ask about:
  - travel (especially PNG) in prior 3 months
  - date first became ill (fever)
  - recent antibiotic or antimalarial use
- Do pregnancy test if female of reproductive age
- **Consult MO/NP**, who may advise:
  - rapid diagnostic test (i-STAT) (if negative, also test for dengue)
  - 2 thick and thin blood malaria smears
  - FBC, parasite count (at least 2 mL adult, 1 mL child)
  - UC, LFT, BGL, malaria antigen test

### If suspected Ross River virus (RVV) or Barmah Forest virus (BFV)<sup>3,4</sup>

- Ask about:
  - arthralgia/arthritis of the wrists, knees, ankles + small joints of extremities
  - pins + needles and tenderness of the palms + soles
  - fatigue + malaise - often prominent in RRV
  - rash on trunk + limbs - common in BFV
- Do physical examination, including:
  - check for rash
  - palpate joints for pain/swelling
  - check for swollen lymph nodes

## 4. Management

### Dengue<sup>2</sup>

- Ongoing management as per MO/NP ± evacuation/hospitalisation if severe
- Public Health Unit will monitor + advise on public health interventions
- There is no specific treatment. Aim to relieve symptoms:
  - offer paracetamol. See [Acute pain, p. 32](#)
  - **note:** avoid NSAID + aspirin - may aggravate bleeding
  - if dehydrated, IV sodium chloride 0.9%
  - encourage oral fluids + bed rest
  - recovery is usually < 1 week + not prolonged
- Provide personal protection advice:
  - stay in screened accommodation + have someone stay home to look after them
  - if family members/associates develop a fever present/return immediately
  - patient + household members should use insect repellent during daylight hours
  - household members should take measure to avoid being bitten, especially while patient is febrile

### If malaria suspected<sup>1</sup>

- Consult MO/NP and Public Health Unit who will advise management, including:
  - presumptive treatment as per local guidelines, as soon as blood film taken
  - **note:** guidelines for Torres Strait <https://www.health.qld.gov.au/clinical-practice/guidelines-procedures/diseases-infection/diseases/mosquito-borne/resources>

### If likely RRV or BFV<sup>3,4</sup>

- Consult MO/NP who may advise:
  - testing/bloods
  - ongoing management
- No specific treatment, offer NSAID if joint pain. See [Acute pain, p. 32](#)
- Advise patient if:
  - RRV - can have prolonged symptoms, up to a year in some cases
  - BFV - recovery usually in several weeks, symptoms may persist > 6 months

### In all cases advise preventive measures<sup>2-4</sup>

- The best prevention is to avoid mosquito bites by:
  - avoiding outdoor activities when mosquitoes are most active, around dawn and dusk
  - wearing loose, light-coloured clothing with long sleeves, long trousers + socks (mosquitoes can bite through tight-fitting clothes)
  - use protective mosquito repellent containing diethyl toluamide (DEET) or picaridin + reapply as directed by the manufacturer. Lotions + gels are more effective + longer lasting than sprays
  - ensure fly screens + water tank screen are in good order + use mosquito lanterns, coils or plug-in repellent devices
  - emptying containers holding water around the house weekly

## 5. Follow up

- As per MO/NP/Public Health Unit
- If dengue, advise to return if develop severe symptoms - contact MO/NP urgently

## 6. Referral/consultation<sup>1</sup>

- Notify Public Health Unit ☎ if probable or diagnosed dengue or if confirmed malaria, RRV or BFV

## Chronic conditions

### HMP Secondary prophylaxis for acute rheumatic fever (ARF) - adult/child

#### Recommend<sup>1</sup>

- Strict regular long-term benzathine benzylpenicillin (Bicillin LA®) prophylaxis (**every 21–28 days**) is critical to prevent recurrent Group A Strep infections causing ARF, p. 515
- **Every day of non-treatment over 28 days puts the person at high risk of recurrence of ARF**

#### Background<sup>1</sup>

- Recurrent ARF can lead to a chronic condition called rheumatic heart disease (RHD) which involves deformity and dysfunction of the heart valves
- The RHD Register and Control Program Qld maintains Bicillin LA® and echo registers + is available for clinical support and education ☎ 1300 135 854 [ArfRhregister@health.qld.gov.au](mailto:ArfRhregister@health.qld.gov.au)
  - if outside of Qld contact your state/territory RHD control program
- Recommended resources. See <https://www.rhdaustralia.org.au/resources>
  - *The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease* (3rd edition)
  - eLearning - *Administering Bicillin*

### 1. May present with

- History of ARF
- Diagnosis of rheumatic heart disease (RHD)

### 2. Immediate management Not applicable

### 3. Clinical assessment

- Check and complete care items on the patient's ARF/RHD care plan
- Ask:
  - **date of last Bicillin LA® injection** - check medical record, or
    - contact RHD Register ☎ 1300 135 854 (Qld), or state/territory RHD control program
    - **note:** Qld Health viewer medication tab is updated within 24 hours of injection being entered into the register
  - **if any problems** after previous injection(s)
  - **where patient wants injection:**<sup>1</sup>
    - ventrogluteal preferred site; lateral thigh is acceptable
    - **note:** upper outer quadrant of the buttock is associated with sciatic nerve damage and must be used with caution

### 4. Management<sup>1</sup>

- The duration of secondary prophylaxis is a specialist decision based on a number of individual and environmental factors. Prophylaxis can only be ceased by a specialist MO
- **Injections can be given anytime between 21–28 days:**
  - a specialist may recommend a 21 day regimen (rather than 21–28 days) for patients who have breakthrough ARF despite complete adherence to a 28 day regimen OR have a high level of risk eg severe RHD, OR a history of heart valve surgery

- **Give benzathine benzylpenicillin (Bicillin LA®):**
  - consider strategies for [Managing injection pain](#), p. 563
  - if allergic to penicillin, specialist will order oral erythromycin
- If patient has bleeding problems after injections or consistently declines Bicillin LA® despite attempts to identify and address any barriers to injections:
  - specialist may order oral phenoxymethylpenicillin
- **If oral antibiotics given:**
  - advise [ArfRhdregister@health.qld.gov.au](mailto:ArfRhdregister@health.qld.gov.au) (or state/territory RHD control program) date supplied
  - emphasise consequence of missed doses + encourage to consider returning to injections
  - ↑ monitoring for Group A Strep infections eg [Impetigo](#), p. 298, [Sore throat](#), p. 495 and recurrence of [ARF](#), p. 515

S <sub>4</sub>	Benzathine benzylpenicillin (Bicillin LA®)			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP (or have current medication order)				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Prefilled syringe	1.2 million units/2.3 mL	IM	<b>Child &lt; 20 kg</b> 600,000 units (1.2 mL)	Once every 21–28 days Inject slowly over at least 2–3 minutes
			<b>Adult and child ≥ 20 kg</b> 1.2 million units (2.3 mL)	
<b>Offer CMI:</b> May cause diarrhoea, nausea and pain at injection site				
<b>Note:</b> <a href="#">Ventrogluteal</a> , p. 564 or vastus lateralis sites preferred. Do not give in deltoid				
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Ensure access to adrenaline (epinephrine) 1:1,000 to treat anaphylaxis eg if giving in patients home. Consult MO/NP. See <a href="#">Anaphylaxis</a> , p. 82 <sup>1,2</sup>				

S <sub>4</sub>	Erythromycin			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP (or supply on current medication order)				
RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg	Oral	<b>Adult and child</b> 250 mg bd	Ongoing on specialist advice
Oral liquid	200 mg/5 mL			
<b>Offer CMI:</b> Take on an empty stomach 1 hour before or 2 hours after food. May cause nausea, vomiting, diarrhoea, abdominal pain/cramps or thrush. Can be taken with food if causes stomach upset				
<b>Note:</b> If renal impairment seek MO/NP advice. Interacts with many medicines, including over-the-counter and herbal products. Use with caution in patients with myasthenia gravis				
<b>Contraindication:</b> Use with some statins. Severe or immediate allergic reaction to macrolides. Severe hepatic impairment				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis</a> , p. 82 <sup>1,4</sup>				

S4	Phenoxymethylpenicillin		Extended authority ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP (or supply on current medication order) RIPRN may proceed				
Form	Strength	Route	Dose	Duration
Capsule	250 mg	Oral	<b>Adult and child</b> 250 mg bd	Ongoing on specialist advice
Oral liquid	125 mg/5 mL 250 mg/5 mL			
<b>Offer CMI:</b> May cause diarrhoea, nausea or thrush. Food has little effect on absorption				
<b>Contraindication:</b> Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
<b>Management of associated emergency:</b> Consult MO/NP. See <a href="#">Anaphylaxis, p. 82</a>				1,3

## 5. Follow up<sup>1</sup>

- Use strategies to support patient to return for next injection eg:
  - reschedule next appointment before they leave the clinic
  - update recall for 21 days time
  - fill out injection reminder card <https://www.rhdaustralia.org.au/resources/injection-reminder-cards>
  - encourage to download *Treatment tracker* App <https://www.rhdaustralia.org.au/treatment-tracker-app>
- Provide ongoing support and education eg *Strong Heart Strong Body* book <https://www.rhdaustralia.org.au/file/1587/view>

## 6. Referral/consultation

- Inform [ArfRhregister@health.qld.gov.au](mailto:ArfRhregister@health.qld.gov.au) (or state/territory RHD control program) of date of injection in order to update prophylaxis management dates

## HMP Supply of chronic condition medicines by A&TSIHP and IHW

### Recommend

- This HMP is for Aboriginal and Torres Strait Islander Health Practitioners (A&TSIHP) and Authorised Indigenous Health Workers (IHW) to supply medicines for ongoing management of chronic conditions in isolated practice areas. Isolated practice areas are defined in the *Medicines and Poisons (Medicines) Regulation 2021* <https://www.health.qld.gov.au/system-governance/licences/medicines-poisons/medicines-poisons-act/legislation-standards>
- This topic is not intended for assessment and treatment of acute conditions

### Background

- A&TSIHP and IHW may be required to supply medicines prescribed by an MO/NP for chronic conditions if < 6 months since last medical consultation<sup>1,2</sup>

## 1. May present with

- Diagnosis of chronic condition and medicine(s) prescribed by MO/NP
- Patient requesting supply of medicines for chronic condition eg for ongoing management of:
  - diabetes
  - asthma
  - hypertension

- COPD
- chronic heart disease
- chronic kidney disease

## 2. Immediate management Not applicable

## 3. Clinical assessment<sup>1,2</sup>

- Check order for medicine is current and written within last 6 months
- Check medicine is approved for supply (ie ‘give a treatment dose’) by the clinician - it will be listed in Appendix 3 ‘Chronic Disease Medicines’ of the relevant Extended Practice Authority(EPA):
  - EPA - **Aboriginal and Torres Strait Islander Health Practitioners** OR
  - EPA - **Indigenous Health Workers**
  - access EPAs at <https://www.health.qld.gov.au/system-governance/licences/medicines-poisons/medicines-poisons-act/legislation-standards>

Where practical, check and complete actions according to the patient’s care plan at the time of supply. Refer to the *Chronic conditions manual* for guidance <https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm>

- Ask how patient is going with medicines:
  - are they taking the medicine as prescribed; any difficulties taking
  - any side effects
  - any other concerns
- Check medicine allergies

### If medicine(s) is for management of diabetes:

- Check BGL
- If BGL is outside of normal ranges, consult MO/NP for advice
- Check and complete care items on diabetes and high risk foot care plan(s)

### If medicine(s) is for management of hypertension:

- Check BP
- If BP is outside of normal ranges, consult MO/NP for advice
- If systolic BP  $\geq 200$   $\pm$  diastolic BP  $\geq 130$ , contact MO/NP urgently. See [Hypertensive emergency, p. 116](#)
- Check and complete care items on hypertension care plan

### If medicine(s) is for management of asthma:

- As appropriate, check inhaler technique
- Discuss smoking and passive smoking (if applicable)
- Ensure patient has an Asthma Action Plan
- Check and complete care items on asthma care plan

### If medicine(s) is for management of chronic obstructive pulmonary disease (COPD):

- As appropriate, check inhaler techniques
- Discuss smoking and passive smoking (if applicable)
- Check and complete care items on COPD care plan

### If medicine(s) is for management of chronic kidney disease (CKD):

- Check and complete care items on CKD patient care plan according to stage of kidney disease

**If medicine(s) is for management of chronic heart disease (CHD):**

- Check and complete care items on chronic heart disease care plan

**4. Management**

**Offer** health education/support for management/prevention of the chronic condition as relevant eg:

- Smoking cessation
- Healthy eating
- Alcohol intake
- Exercise

Refer to the *Chronic conditions manual* for guidance <https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-cm>

- Consult MO/NP if:
  - condition is worsening or not managed well with medicines
  - BGL or BP remains elevated; shortness of breath; any other concerns for their health
  - patient has any concerns about their medicine
  - any concerns about reading the medicine order
  - any concerns or you are unsure about anything
- Check non-inpatient rural and remote medication chart for medication order:
  - check date order written - A&TSIHP and IHW may only supply if order is within last 6 months
  - can you read the order properly
  - is the medicine in stock
  - when did the patient last get the medicine
- Select medicine for supply according to MO/NP order:
  - check the generic name of the medicine - ensure patient is not already taking the same medicine with a different brand name
  - if patient requests more than 1 months supply, contact MO/NP for approval
  - label appropriately
  - record supply
- Offer consumer medicine information as appropriate including:<sup>1,2</sup>
  - how to take the medicine
  - what it is for and how it works
  - warnings/precautions, such as when the medicine should not be taken
  - common side effects
  - how to store

**5. Follow up**

- Discuss need for next MO/NP appointment as appropriate

**6. Referral/consultation**

- If concerned condition is worsening or not managed well with medicines, consult MO/NP
- Refer as appropriate eg to diabetes educator, dietician, exercise physiologist, podiatrist, physiotherapist
- Support patient to access specialist appointments