8

Paediatrics

Paediatric presentation

History and physical examination - child

Recommend[1,2]

- Pay particular attention to history from parent/carer
- Regardless of the time (day or night) or circumstances, reassure the parent/carer has done the right thing bringing the child in - **for any** concern
- If you have concerns for the safety and wellbeing of a child, see Child protection, p. 551
- Consult MO/NP for all children ‹ 3 months of age
- **Consider serious illness if:**
  - infant ‹ 3 months with T ≥ 38
  - child 3–6 months with T ≥ 39
  - rigors, low T ‹ 36
  - unexplained pain/restlessness
  - drowsiness/decreased activity
  - looks sick/toxic
  - not waking easily
  - poor feeding in infants
  - nasal flaring, grunting, indrawing of chest
  - dry mucous membranes, reduced skin turgor
  - not responding normally to social cues
  - reduced urine output (no urine for ≥ 12 hours)
  - cool extremities
  - pale/mottled/ashen/blue skin, lips or tongue
  - weak, high pitched or continuous cry
  - › 5 watery diarrhoea in 24 hours

Background[1,2]

- Small children, especially young babies, get sick very quickly
- Parent/carer information sheets for common paediatric presentations https://www.childrens.health.qld.gov.au/qpec-parent-info/

Vital signs - child approximate normal values[4]

Age (years)	‹ 1	1–2	2–5	5–12	≥ 12
Heart rate (**HR**) (beats/minute)	110–160	100–150	95–140	80–120	60–100
Respiratory rate (**RR**) (breaths/minute)	30–40	25–35	25–30	20–25	15–20
Blood Pressure (**BP**) (systolic)[5] **Note:** see APSGN, p. 511 for BP tips in children + parameters for hypertension	70–90	80–95	80–100	90–100	100–120
Temperature (**T**)[1]	36–37.9				
O_2 saturation (**SpO_2**)	≥ 94%				
Conscious level (**A**lert, **V**oice, **P**ain, **U**nresponsive)	Alert				
Capillary refill time (**CRT**)	‹ 2 seconds				
Blood glucose level (**BGL**)[6]	3–8				

Sepsis and button battery considerations - all children

Think could this be sepsis if:[2]

- ☐ Signs of infection, including history/evidence of fever or hypothermia

PLUS ANY of the following

- ☐ Looks sick/toxic
- ☐ Parental and/or clinician concern
- ☐ Immunocompromised
- ☐ Altered behaviour or ↓ level of consciousness
- ☐ Age < 3 months

If any of the above, screen for Sepsis, p. 64

Be button battery aware[7,8]

Consider Button battery, p. 80 ingestion if any of the following:

- ☐ Battery missing, seen to be playing with battery (may deny ingestion)
- ☐ Gagging, gulp, cough or choking episode

Or, non-specific symptoms eg:

- ☐ Unexplained partial food refusal, poor feeding - may still take soft food/fluids
- ☐ Drooling or regurgitation
- ☐ Croup like cough
- ☐ Chest pain or grunting (may be due to chest pain in pre-verbal child)
- ☐ Fever/vomiting/signs of infection without clear focus
- ☐ Upper GI bleeding - melaena (black stools), vomiting blood (may mimic a nose bleed)

If not managed urgently, a swallowed button battery can burn a hole through the oesophagus into the aorta and cause fatal haemorrhage

Step 1: Obtain history of the presenting concern/problem[9]

- Get history in conjunction with examining the child
- In a sick child do a full assessment of all systems
- The history is the most powerful tool for identifying the diagnosis in most cases

History of presenting concern/problem[9,10]	
Presenting concern/ problem	• Ask the parent/carer what the problem is • Listen to the carer: – particularly regarding changes in usual behaviour[2] – children can sometimes pep up on presentation • Use open ended questioning
For each symptom ask about (as relevant) Use SOCRATES mnemonic	• **Site** - where is the pain/symptom • **Onset**: – gradual/sudden – continuous/intermittent – what were they doing when it started • **Character** eg sharp, dull or burning • **Radiation** of pain or discomfort • **Alleviating factors** - what makes it better eg sitting up, medicines • **Timing** - when did it first begin, how long did it last, have they had it before • **Exacerbating factors** - does anything make it worse eg movement • **Severity** - mild, moderate or severe pain: – see Acute pain, p. 32 for pain assessment tools
Associated/other symptoms	• eg nausea, vomiting (+ colour eg coffee ground/blood/bile [green], yellow), photophobia, headache • Ask specifically about **fever, pain, SOB/rapid breathing, diarrhoea, weight loss, rash** • Be aware of vomiting without diarrhoea
Behaviour and activity during this illness	• Active/alert, sleepy or irritable, easy/difficult to wake • Muscle tone normal or are they floppy
Appetite and fluid intake/output during this illness	• How much do they normally drink eg 180 mL x 6 bottles/day • Intake now - try to be as precise as possible with quantities. How: – many drinks/breastfeeds – alert during feeds – long between intake and vomit/diarrhoea – many wet nappies/times passed urine in last 24 hours • Amount/type of bowel movements • Any blood in stool or change in bowel habits
Treatment ± medicine given by carer during this illness	• What, how much, when, how often, effectiveness • Any ibuprofen or paracetamol containing medicines given
• Ask if there are any other concerns • Consider possible differential diagnosis • Subsequently use closed ended questions to confirm or refute your differential diagnoses	

Step 2: Ask about past history[9-11]

- Review + update past history in medical record each visit. As appropriate, check *My Health Record* https://www.myhealthrecord.gov.au/
- Consider relevant past history that may assist with differential diagnosis this visit
- Always ask about allergies, medicines and immunisations

Past history[9-12]	
Past medical and surgical history	• If < 2 years - ask if birth was normal, term/preterm, any neonatal problems[12] • Any problems with growth and development • As appropriate - mother's alcohol, smoking, drug use during pregnancy • Significant illnesses in past • **Ask about -** diabetes, asthma/eczema/hay fever, epilepsy, acute rheumatic fever (ARF)or rheumatic heart disease (RHD) • Hospital admissions, operations, injuries - where, when, why • Is child immunocompromised eg: – diabetes, malnutrition, no spleen, Down syndrome, corticosteroids, chemotherapy[13]
Family and social history	• Health problems in the (biological) family - especially siblings + parents • Who looks after the child, what is the social situation, any mental health problems in carer(s), living conditions • Access to phone (that works/with credit) and car/transport + distance to clinic • Record name of person presenting with child + relationship to child • Household smokers • Recent contacts or trips away • If medicines are given, will there be any problems to take them
Medications Also see Best possible medication history, p. 560	• Regular and prn medicines - prescribed, complementary, alternative, bush medicines, over-the-counter, vitamins, probiotics: – generic name – dose, route, frequency, taken correctly – recently changed/course completed • May need to ask about other medicine(s) in the home the child may have taken
Allergies **Adverse medication reactions**	• Allergies/reactions + type of reaction (anaphylaxis, skin reaction, other) to: – medicines – other eg honey bee stings, sticking plaster, food – has adrenaline (epinephrine) autoinjector eg EpiPen® been used • Check: – for medical alert jewellery/accessories eg shoe tag, anklet, watch[14] – medical records + document allergies/adverse reactions[15]
Immunisations[16]	• Check if up-to-date (documented evidence) • Offer opportunistic Immunisations, p. 554 as appropriate
Opportunistic health checks (offer or refer as appropriate)	• Check if due for routine health check • For age appropriate checks and screening tools, see the *Chronic conditions manual* https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm

Step 3: Do physical examination[9]

In a sick child

- A thorough and complete examination is required
- All of the child's clothing will need to be removed at some stage

In a child who is not sick

- Examine the relevant system first + proceed to further examination as guided by the history + your findings
- This is particularly important when examining children who often present with generalised signs and symptoms

Tips for examining children

- Use distraction techniques
- May be best done with the child on the carer's knee
- If the child is irritable perform the examination opportunistically ie do what you can when you can
- Leave the most disruptive parts until last eg ears + throat

Physical examination - child[9-12,17,18]	
General appearance	• Watch before you examine • Observe interaction between carer + child • **Appearance**: – do they look well or sick – alert or drowsy – **T**one - moving around and active **OR** floppy/limp and listless – **I**nteractiveness - reaching for toys/interacting, or disinterested in interacting/playing – **C**onsolability - can child be comforted by the care giver – **L**ook/gaze - does the child fix their gaze on a face or is there a glassy eyed stare – **S**peech/cry - strong + vigorous, weak, hoarse, high pitched • **Work of breathing (WOB)**: – look - retractions, nasal flaring, gasping, ↑ RR – listen - audible wheeze, snoring, grunting, stridor • **Circulation**: – look at lips tongue and fingers - are they blue – compare lips and tongue colour to parents if unsure – skin colour - pink/pallor, mottling, cyanosis • **Any neck stiffness** - feel gently. Ask the older child to put their chin on their chest - if they can, they do not have neck stiffness • Do they look well nourished
Vital signs (all children who present)	• RR, HR, BP, T, SpO_2 • Conscious state - GCS/AVPU, p. 562 • Capillary refill time (< 2 seconds) • BGL if indicated eg altered level of consciousness, seriously ill **Document on age appropriate CEWT (Qld) or local EWARS** **Calculate score. Act on score if indicated**

Physical examination - child (continued)	
Weight Every presentation to clinic	• **Weigh all children** - bare weight if ‹ 2 years:[12] – compare against most recent weights – plot on growth charts appropriate for age + gender • If appropriate, also measure:[12] – length if ‹ 2 years or height if › 2 years + able to stand – head circumference if ‹ 2 years, or if indicated in older child
Hydration	• Any weight loss • Eyes - normal or sunken. Tears absent or present • Mouth and tongue - wet or dry • Skin turgor - pinch a loose piece of skin. Does it return to normal immediately or stay saggy • Fontanelle - normal or depressed: – depressed may indicate dehydration – bulging arises from raised intra-cranial pressure + usually indicates a serious illness • Also see Hydration assessment - child, p. 535
Skin	• Always check the whole body, particularly in a sick child • Inspect for: – rash - non-blanching, petechiae, purpura – colour - unusually pale, mottled or cyanotic – bruising, unexplained or unusual marks – signs of infection - redness, swelling or tenderness • Skin lesions or sores: – colour, shape, size, location, distribution on body – exudate eg clear, pus, bloody – any family members/close contact with similar lesions • Any palpable/tender lymph nodes in the neck, axilla and groin
Cardiovascular system	• Inspect skin colour: – pink, white, grey mottling. Compare the trunk with the limbs – any oedema - check hands, feet, shins, lower legs, face • Palpate/feel: – skin temperature - hot, warm, cool, cold, sweating. Compare the trunk with limbs – peripheral pulses - weak or strong – peripheral perfusion - 'blanch' the skin on a finger or toe for 5 seconds. Time how long it takes for the colour to return – central perfusion - as per peripheral perfusion, but blanch the skin over the sternum with your thumb • If trained in auscultation listen to heart sounds

Physical examination - child (continued)	
Respiratory system	• Most information is gained through inspection • Inspect anterior/posterior chest for: – equal chest movement – ↑ WOB - use of accessory muscles, rib retraction/recession; nasal flaring; head bobbing • If age appropriate, can child talk continuously, only in words/sentences/unable to talk at all • Measure RR over 1 minute - rhythm, depth and effort of breathing • Listen for extra noises - cough ± sputum, wheeze, stridor, grunt, snore, hoarse speech/cry • Auscultate air entry in both lung fields: – equal, adequate, decreased or absent – wheeze or crackles - on inspiration or expiration – **note:** transmitted sounds from the upper respiratory tract are very common in children and may mask other signs • Will the child lie flat
Gastrointestinal/ reproductive systems	• Inspect for: – scars, abdominal distension, hernias, bruising or other discolouration, prominent veins, obvious masses • Auscultate bowel sounds - present or absent • Palpate abdomen - if pain, palpate with extra care: – soft or firm – any obvious masses – tender to touch - identify which abdominal quadrant and exact area – any guarding/rigidity - even when the child is relaxed – any rebound tenderness - press down and take your hand away very quickly - is the pain greater when you do this • Percuss and feel for bladder • Check the testes in boys - are they both in the scrotum: – any redness, swelling or tenderness
Nervous system	• A brief assessment is all that is needed • Assess orientation to time, place and person if appropriate for child's age: – ask - name, age, location, time, date, year • Pupils - size, symmetry, reaction to light • Assess asymmetry of tone and power - compare each side of the face and limbs • If indicated, test touch sensation using cotton wool • Test finger nose coordination. If possible, observe child walking, looking around and using hands
Musculoskeletal system	• Any pain in limbs, joints or muscles • Check for range of motion in limbs, joints and muscles - active and passive • Any redness, pain, swelling, heat or laceration over or near a joint(s) • Observe gait • Consider ARF, p. 515 and Swollen/painful joint - child, p. 550

Physical examination - child (continued)	
Ears, nose and throat	**Ears -** see Ear assessment, p. 519 for detailed assessment • Inspect: – pinna - any redness, swelling – ear canal - any obvious swelling or redness to outer canal (if there is looking with an otoscope will be painful) • Use otoscope to inspect: – canal - any redness, swelling, discharge – eardrum - normal, redness, dullness, bulging or retraction, fluid, bubbles, perforation, foreign bodies (insects/objects) • Check behind the ear (mastoid) for redness, swelling, pain **Nose** • Feel for facial swelling, pain • Any discharge or obvious foreign body **Throat** • Inspect: – lips, buccal mucosa, gums, palate, tongue, throat – tonsils - redness, enlargement, pus – teeth and gums - condition
Eyes	• If indicated, test Visual acuity, p. 278 of each eye (use age appropriate Snellen chart) • Inspect: – eyes and surrounding structures - any redness, discharge or swelling – pupils - equal in size, regular in shape, reaction to light – eye movements - ask the child to follow the movement of your finger • See Eye assessment, p. 276 for detailed assessment
Urinalysis	• Examine the urine if: – child sick – abdominal pain or urinary symptoms – unexplained symptoms or signs – vomiting of unknown cause • Inspect the colour - is it normal, dark, blood stained (consider APSGN, p. 511) • Does it smell normal • Urinalysis • Pregnancy test ± STI screen if reproductive age + appropriate to presentation (with parental consent if age appropriate)

Step 4: Consider differential diagnosis

- See Differential diagnosis - child, p. 488 flowcharts to aid in decision making
- If unsure, collaborate with MO/NP

Step 5: Select *Health Management Protocol* (HMP) or *Clinical Care Guideline* (CCG)

- To guide further assessment and management
- Document the page number of the HMP/CCG referred to in the medical record

Step 6: Order/collect pathology if indicated

- If child is unwell enough to require a blood test beyond BGL + Hb **always consult an MO/NP** first to save unnecessary testing or for 'additional' blood collection for other tests that may be required
- RIPRN:[19]
  - may order pathology as per the PCCM
  - name + signature of the MO, NP or RIPRN must be on pathology form or follow local protocol for electronic ordering
  - if RIPRN orders pathology, they are responsible for following up the result
  - consult MO/NP if abnormal/concerned about results
- Other clinical staff may be able to request pathology if there is a local agreement in place between the director of the clinical unit and Pathology Queensland/local health service
- Write 'copy of report to…' RFDS/other collaborative health provider on the pathology form as appropriate
- Point of care testing is available in some facilities eg i-STAT
- See Pathology Qld for:
  - pathology test list
  - rural and remote pathology request forms
  - see https://www.health.qld.gov.au/healthsupport/businesses/pathology-queensland/healthcare
- If outside Qld refer to local pathology services

Step 7: Collaborate with MO/NP as needed

- Always consult MO/NP if you are not sure
- Have CEWT score completed
- Use ISOBAR, p. 25 to guide your communication
- Check your local facility guidelines to find out who to contact - during and after hours:
  - see Qld contacts, p. 24. **If in doubt call RSQ 1300 799 127 (Qld)**

Differential diagnosis - child

Recommend

- The following flowcharts can be used to assist with differential diagnosis in a child
- They are not intended to be a replacement for clinical judgment, expertise or experience
- Always work within your individual scope and refer to a MO/NP as needed

Child with fever

Babies < 3 months of age with T ≥ 38 contact MO/NP urgently[1,2]

Fever in most children < 5 years old has a viral cause. A careful assessment will identify focus of infection in most patients

Consult MO/NP if fever with no obvious source of infection, or at any time you are unsure

Clinical assessment performed

Unwell[3]	**Unwell**	**Unwell**[4]	**Unwell**[1]	**Unwell**[1]	**Basically well**[5]	**Basically well**[6]	**Basically well**	**Basically well**[7]
• Headache • Neck stiffness or resistance • **Note:** often present with non-specific symptoms ± prior URTI	• High fever • Stridor, drooling • Unable to eat, drink or talk + reluctant to move neck • Not immunised	• Abdominal pain • Loin or suprapubic tenderness • Vomiting • Smelly urine • **+ if ≥ 3 years** dysuria, frequency	• Rapid RR • Crackles in chest • Chest recession • Nasal flaring • ± poor feeding	• Limp • Joint pain • Not moving joints	• Joint pain ± swelling • Murmur, chest pain • Jerky movements • Rash • Nodules	• Sudden onset diarrhoea • ± vomiting • ± abdominal pain	• Nasal discharge • Cough • Sore throat	• Bulging eardrum • Discharge from ear • ± URTI symptoms
Consider Meningitis, p. 72	Consider Epiglottitis, p. 510	Consider UTI, p. 548	Consider Pneumonia, p. 506 or Bronchiolitis, p. 503	Consider Septic arthritis, p. 550	Consider ARF, p. 515	Consider Gastroenteritis, p. 535	Consider URTI, p. 494 or Sore throat, p. 495	Consider AOM, p. 523

Always consider Sepsis, p. 64

Suspect febrile neutropenia if T ≥ 38.5 × 1 **OR** ≥ 38 × 2 an hour apart **+** chemotherapy in prior 2 weeks OR absolute neutrophil count (ANC) < 1 × 10^9/L

Treating fever

Remove excess layers of clothing, but ensure child is not under-dressed. Do not tepid sponge. Encourage oral fluids if tolerated to maintain hydration

Consider paracetamol OR ibuprofen if child appears distressed (do not use with sole aim of reducing T)[1,2]

Parent/carer fact sheet *Fever in children* https://www.childrens.health.qld.gov.au/chq/information-for-families/fact-sheets/

Child with cough

Babies < 3 months of age contact MO/NP urgently
Contact MO/NP if significant features of assessment unclear or you are unsure of cause

Clinical assessment performed

Unwell[4]
- Fever
- Rapid RR
- Chest recession, nasal flaring
- Crackles in chest
- Chest or abdominal pain
- ± poor feeding

Consider Pneumonia, p. 506 or Bronchiolitis, p. 503

Sudden onset in previously well child[3]
- Cough ± stridor
- ± wheeze
- Airway compromised
- ± history of ingesting or choking on something

Consider Foreign body Inhalation, see Choking, p. 78 or Anaphylaxis, p. 82

Well to unwell[1]
- Barking cough
- Stridor at rest
- ± respiratory distress
- URTI like symptoms

Consider Croup, p. 500

Wheeze
- Rapid RR
- Difficulty breathing or absent breath sounds

Consider[6] Asthma, p. 95 or Bronchiolitis, p. 503

Paroxysmal cough[5]
- Whoop
- Apnoea
- Vomiting after coughing spasms

Consider Pertussis, p. 508

Basically well[2]
- Runny/blocked nose
- Sneezing, cough
- Sore throat, headache
- ± fever

Consider URTI, p. 494

Always consider Sepsis, p. 64

Child with stridor

Contact MO/NP urgently

Stridor is a harsh vibrating sound occurring on inspiration due to upper airway obstruction

Consider causes: **croup** (common), **inhaled foreign body**, **epiglottitis** (rare but important), **trauma**, **angio-oedema**, **mass** (tumour or abscess)

Get rapid history, including Hib immunisation status. Limit examination. **Do not examine mouth or throat**

Significant features of assessment unclear or you are unsure of cause? Yes → Consult MO/NP **urgently**

No

Unwell[1]

- High fever
- Drooling
- Unable to eat, drink or talk
- Reluctant to move neck
- Not immunised

Consider Epiglottitis, p. 510

Well to unwell[2]

- Barking cough
- Stridor at rest
- ± respiratory distress
- URTI like symptoms

Consider Croup, p. 500

Sudden onset in previously well child[3]

- Cough ± stridor
- ± wheeze
- Airway compromised
- Usually there is a history of ingesting or choking on something

Consider Foreign body inhalation, see Choking, p. 78

Acute onset in previously well child[4] **±**

- Swelling of tongue
- Swelling/tightness in throat
- Itchy rash (hives)
- Wheeze or persistent cough
- ± history of exposure to allergen eg:
  - food
  - bites/stings
  - medicine or blood product

Consider Anaphylaxis, p. 82

Always consider Sepsis, p. 64

CHILD WITH STRIDOR

Child with vomiting

Babies < 3 months of age contact MO/NP urgently

Vomiting is a common and important symptom, which may indicate serious illness especially in a very young child. **Be aware of vomiting without diarrhoea.** Causes may include: **infection** (pneumonia, UTI, meningitis, AOM), **bowel obstruction** (pyloric stenosis, intussusception, appendicitis, hernia), **reflux oesophagitis**, **ICP** (trauma, abscess or tumour), **metabolic** (diabetic ketoacidosis, poisoning)

Clinical assessment performed

Significant features of assessment unclear or you are unsure of cause, or if bile or blood stained vomit ▶ Yes ——▶ Consult MO/NP

No

Unwell[1]
- Fever
- Headache
- Neck stiffness or resistance
- **Note:** often present with non-specific symptoms ± prior URTI

Consider Meningitis, p. 72

Unwell[2]
- Fever
- Rapid RR
- Chest recession, nasal flaring
- Crackles in chest
- Chest or abdominal pain
- ± poor feeding

Consider Pneumonia, p. 506 or Bronchiolitis, p. 503

Unwell[7]
- Excessive thirst
- Frequent urination
- ± dehydration
- High BGL
- Ketones on urinalysis
- Rapid breathing

Consider DKA, p. 89

Unwell[4]
- Abdominal pain
- Loin or suprapubic tenderness
- Smelly urine
- **+ if ≥ 3 years** dysuria, frequency

Consider UTI, p. 548

2–6 weeks old[5]
- Projectile vomits soon after feed
- Hungry following feed
- Weight loss or poor gain

Consider Pyloric stenosis, p. 544

3 months - 3 years[6]
- Abdominal pain intermittently
- ± red currant jelly stool

Consider Intussusception, p. 545

Basically well[3]
- Sudden onset diarrhoea
- ± fever
- ± abdominal pain

Consider Gastroenteritis, p. 535

Also see Nausea and vomiting, p. 40. **Always consider** Sepsis, p. 64 and Button battery, p. 80

Child with abdominal pain

For any child with significant pain + babies < 3 months of age contact MO/NP urgently

Clinical assessment performed

Consult MO/NP if any of

- Bile or blood stained vomit
- Bloody stool
- Distension or guarding
- Localised or rebound tenderness
- Palpable mass, vomit looks/smells like faeces - consider Bowel obstruction, p. 205
- Inguinal-scrotal pain or swelling - **assume** Testicular torsion, p. 209 **until proven otherwise**
- Significant features of assessment unclear or **you are unsure of cause**

	Unwell[1]	**Unwell**[2]	**Basically well**[3]	**3 months - 3 years**[4]	**Basically well**[5]
• History of trauma	• Fever • Rapid RR • Chest recession, nasal flaring • Crackles in chest • ± poor feeding	• Vomiting • Loin or suprapubic tenderness • Smelly urine • **+ if ≥ 3 years** dysuria, frequency	• Sudden onset diarrhoea • ± vomiting • ± fever	• Abdominal pain intermittently • ± red currant jelly stool	• Infrequent + hard stools • Overflow incontinence/ skid marks
Consider Abdominal injuries, p. 150	**Consider** Pneumonia, p. 506 or Bronchiolitis, p. 503	**Consider** UTI, p. 548	**Consider** Gastroenteritis, p. 535	**Consider** Intussusception, p. 545	**Consider** Constipation, p. 542

Also see Abdominal pain, p. 196. **Always consider** Sepsis, p. 64 and Testicular torsion, p. 209

CHILD WITH ABDOMINAL PAIN

Respiratory problems

HMP Upper respiratory tract infection (URTI) - child
Common cold

Recommend

- Viral infection is the most likely cause and antibiotics are not recommended[1]

Background

- Primary bacterial infection is uncommon, however secondary bacterial infection may develop[1]

1. May present with[2]

- Runny/blocked nose
- Sneezing, cough
- Sore throat
- Headache
- Malaise ± fever

2. Immediate management Not applicable

3. Clinical assessment[1,2]

- If ‹ 12 months of age - consider Bronchiolitis, p. 503 ask about:
  - lethargy
  - ↑ WOB, cough
  - how well are they feeding
- Ask about:
  - severe symptoms - T › 39 with purulent nasal discharge, facial pain[1]
  - immunocompromised
- Do vital signs +
  - weight, if ‹ 2 years bare weight
- Check:
  - chest - any:
    - ↑WOB, respiratory distress:
      - accessory muscle use, abdominal breathing, inter/subcostal recession, tracheal tug
    - crackles or wheeze
  - ENT
  - neck stiffness
  - enlarged lymph glands

4. Management[1]

- Consider differential diagnosis. See:
  - Sore throat, p. 495
  - Child with fever, p. 489
  - Child with cough, p. 490
  - Child with stridor, p. 490
- Contact MO/NP if symptoms are:
  - severe or respiratory distress

  - worsening after initial improvement
  - or persist › 7–10 days without improvement
- If mild symptoms and otherwise well:
  - reassure parent/carer that URTI is self-limiting and symptoms usually clear within 7 days
  - discuss symptomatic relief:[1]
    - regular paracetamol or ibuprofen. See Acute pain, p. 32
    - frequent hand washing, nose blowing, sneeze and cough etiquette
    - do not use over-the-counter cough and cold medicines in children[3]

5. Follow up

- Advise to be reviewed if symptoms worsen or become severe:
  - consult MO/NP

6. Referral/consultation

- As above

HMP Sore throat - adult/child
Pharyngitis, tonsillitis

Recommend[1,2]

- Treat sore throats with antibiotics promptly in Aboriginal and Torres Strait Islander people living in rural + remote settings and in others who are at high risk of ARF, p. 515 and APSGN, p. 511

1. May present with[1,2]

- Sore throat
- Fever
- Difficulty swallowing
- Not eating/drinking as much
- Croaky voice

2. Immediate management[2]

- Look for symptoms of **airway obstruction/compromise** or **deep neck space infection eg quinsy,** including:
  - muffled voice, stridor, trismus (unable to open mouth)
  - drooling, neck swelling, torticollis (twisting of neck)
  - severe neck pain, respiratory distress
- If any of above, **urgently contact MO/NP** for **urgent evacuation** + airway management
- Do vital signs
- Screen for Sepsis, p. 64

3. Clinical assessment

- Get history, including:[2]
  - cough, fever, rash
  - feeding - normal or reduced intake, difficulty swallowing
  - times passed urine/number of wet nappies in last 24 hours
  - other symptoms eg diarrhoea, vomiting, headache, malaise, runny nose, red eyes, hoarse voice
  - past history of ARF, immunocompromised

- Do physical examination, including:
  - chest - listen for crackles/wheeze, air entry
  - throat/mouth - redness, swelling/pus on tonsils, ulcers/vesicles
  - ears
  - palpate neck for enlarged/tender lymph nodes
  - look for rash + signs of APSGN, p. 511 and ARF, p. 515
- Use table below for **Differential diagnosis of sore throat**

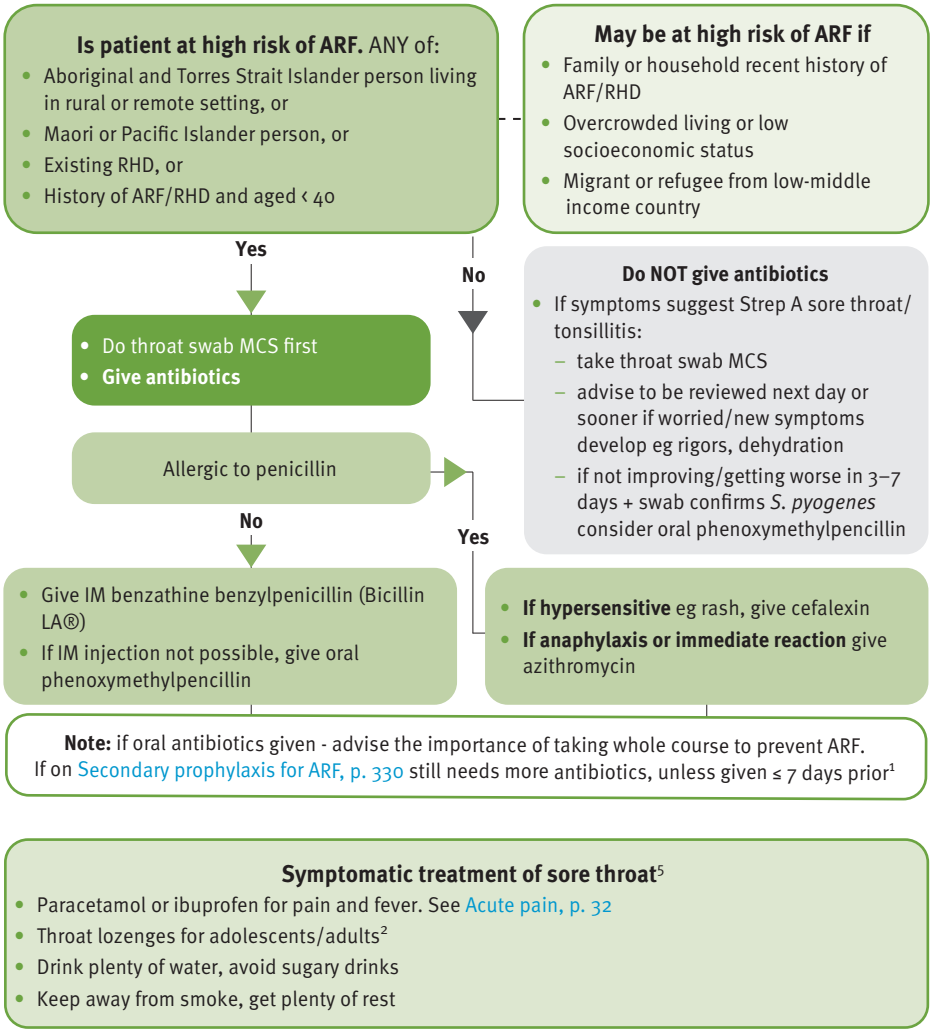
Sore throat[2]		
• No fever • Cough, hoarse voice • Conjunctivitis, nasal congestion • Red throat ± tonsils • ± rash, diarrhoea	**Viral sore throat or tonsillitis** Most common cause in all ages	**Give antibiotics in all cases of sore throat if at high risk of ARF** (see next page) • Antibiotics not usually needed in general population • Symptomatic treatment • Can be difficult to tell if it is caused by a virus or Strep A - do a throat swab MCS to confirm
• Fever › 38 • Tender/swollen lymph nodes in neck • Red throat ± tonsils ± pus on tonsils • No cough, runny nose/congestion	**Strep A sore throat or tonsillitis** More common in school aged children and adolescents	

Other presentations that may have a sore throat as a symptom[2]		
Symptoms	**Probable cause**	**Management**
• Sudden fever › 38.5 • Followed by distinctive rash - red initially, then dry and rough with a 'sandpaper' feel • Facial flushing + white area around mouth • Tongue - white initially, then red and bumpy 'strawberry tongue'	**Scarlet fever** More common between 5–15 years	• If suspected, consult MO/NP • MO/NP may advise to treat with antibiotics
• Fever, nausea • Severe sore throat • Swollen lymph nodes, swollen spleen/liver • Rash, fatigue	**Epstein-Barr virus**[3] (Glandular fever) Common in adolescents and young adults	• If suspected, consult MO/NP • Epstein-Barr virus serology • Symptomatic treatment • Lasts 2–3 weeks, fatigue sometimes for months
• Vesicles or ulcers in mouth and throat • Rash ± vesicles on hands and feet • ↓ appetite, malaise	**Hand, foot and mouth disease**[4] Common in children ‹ 10 and family/school contacts with infection	• If suspected, consult MO/NP • Symptomatic treatment • Usually resolves within 7 days • Advise to return daily until improved
• Fever › 38.5, malaise • Vesicles or ulcers in mouth and throat • Swollen lymph nodes in neck • Headache, abdominal pain, vomiting, ↓ appetite	**Herpangina (mouth blisters)**[4] More common ‹ 5 years	
Non-infectious causes eg Allergic rhinitis, p. 248, rhinosinusitis, smoke, dry air		

4. Management[1,2]

- Contact MO/NP if:
  - ‹ 1 year of age
  - unable to drink/signs of dehydration
  - T ≥ 39
  - looks sick, not alert or interactive when T reduced
  - rash or signs of ARF/APSGN
  - immunocompromised
- Use flowchart below to determine if antibiotics are indicated or not for 'sore throat'

Antibiotic indications for sore throat[1]



Symptomatic treatment of sore throat[5]

- Paracetamol or ibuprofen for pain and fever. See Acute pain, p. 32
- Throat lozenges for adolescents/adults[2]
- Drink plenty of water, avoid sugary drinks
- Keep away from smoke, get plenty of rest

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	
Offer CMI: May cause diarrhoea, nausea and pain at injection site					
Note: Ventrogluteal, p. 564 or vastus lateralis sites preferred. Do not give in deltoid. See Managing injection pain, p. 563					
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems					
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,6]					

S4	Phenoxymethylpenicillin			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	**Adult** 500 mg bd **Child** 15 mg/kg (max. 500 mg) bd	10 days
Oral liquid	125 mg/5 mL 250 mg/5 mL			
Offer CMI: May cause diarrhoea, nausea or thrush. Food has little effect on absorption				
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [2,7]				

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	**Adult** 1 g bd **Child** 25 mg/kg (max. 1 g) bd	10 days
Oral liquid	250 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea, vomiting, dizziness, headache or thrush				
Note: If renal impairment seek MO/NP advice				
Contraindication: Severe or immediate allergic reaction to a cephalosporin or a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,2]				

S4	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	**Adult** 500 mg daily **Child** 12 mg/kg (max. 500 mg) daily	5 days
Oral liquid	200 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea, abdominal cramps or thrush				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [2,8]				

5. Follow up

- Check results of throat MCS if taken
- Advise to be reviewed the next day, or earlier if worried, symptoms worsen or new symptoms develop eg vomiting, dehydration, fever, rigors:[2]
  - contact MO/NP if not improving
- If at high risk of ARF:
  - provide education on signs and symptoms of ARF and APSGN, which can occur about 10 days to 2 weeks after sore throat or skin sores

6.Referral/consultation

- As above

HMP Croup - child

Background[1]

- Croup usually develops over a few days with concurrent URTI like symptoms
- It is a viral inflammation and swelling of the upper airway, which can lead to obstruction
- Also see *Croup - emergency management in children* https://www.childrens.health.qld.gov.au/qpec-statewide-guidelines/

1. May present with[1]

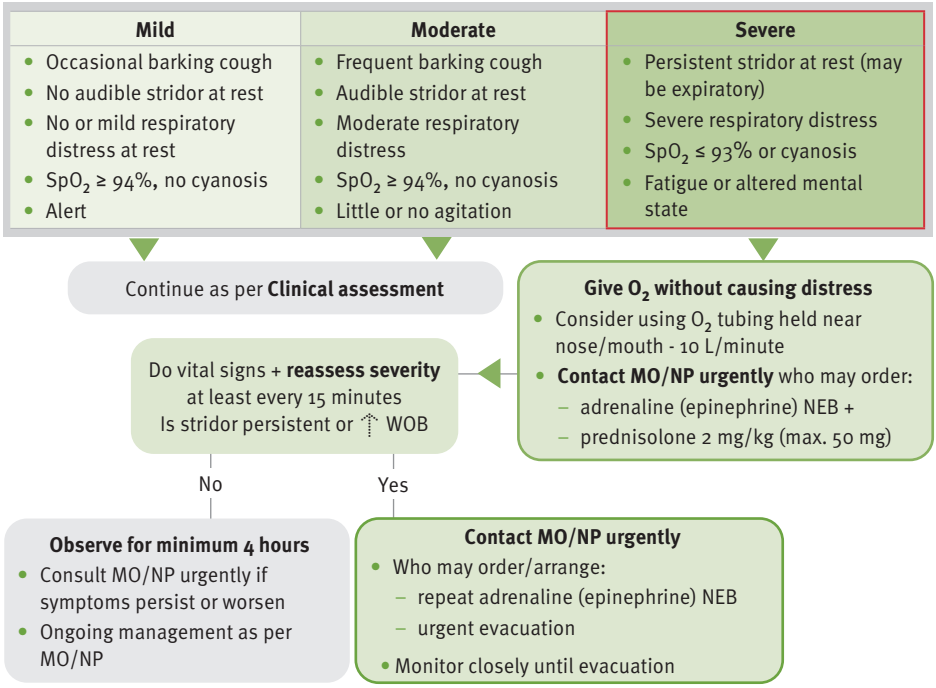
- Barking cough
- Inspiratory stridor, hoarseness of voice
- ± respiratory distress:
  - accessory muscle use, abdominal breathing, inter/subcostal recession, tracheal tug
- URTI like symptoms

2. Immediate management[1,2]

- **Always consider differential diagnosis**[1] **eg** Foreign body inhalation, Button battery, p. 80, Pertussis, p. 508, Bronchiolitis, p. 503, Epiglottitis, p. 510

Assess severity of croup

- Avoid distressing child as may increase symptoms. Nurse child upright on parent/carer's lap



3. Clinical assessment[1]

- Get history, including:
  - fever
  - airway symptoms - getting worse, worse at night
- Do physical examination, including:
  - vital signs
  - check for any:
    - changes in WOB
    - audible stridor
    - chest wall movement eg cave in during inspiration
    - paradoxical breathing - may indicate fatigue
  - weight - bare weight if ‹ 2 years
- **Do not examine throat** as distress may exacerbate symptoms
- Assess for **Risk factors for severe croup**[1]

Risk factors for severe croup[1]

- ‹ 6 months of age
- Structural upper airway condition eg tracheomalacia
- Previous severe croup
- Unplanned re-presentation ‹ 24 hours of first croup presentation
- Down syndrome

4. Management[1]

- If any risk factors, contact MO/NP promptly
- In all cases:[2]
  - minimise handling, keep the child calm eg sitting quietly, reading or watching TV
  - keep the child with parents/carers to ↓ distress
  - allow the child to adopt a position of comfort that minimises airway obstruction
  - reassure and educate parents/carers on the cause, usual course and management to ↓ anxiety
  - give croup fact sheet eg https://www.childrens.health.qld.gov.au/fact-sheet-croup/

Mild or moderate croup:

- Contact MO/NP who may advise:
  - oral prednisolone OR budesonide NEB if not tolerating oral[1,2]
- Continue to observe for at least 1 hour post corticosteroids[1]
- Reassess severity and response to treatment
- If stridor persists or ↑ WOB contact MO/NP:
  - who may order adrenaline (epinephrine) NEB as per severe croup[1]
- If symptoms settle:
  - consult MO/NP who may consider sending patient home if stridor free at rest 1 hour after corticosteroids **or 4 hours after adrenaline (epinephrine) if this has been required**[1]

S3	Adrenaline (epinephrine)			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW and IPAP must consult MO/NP				
RIPRN and RN must consult MO/NP unless circumstances do not allow, in which case **proceed for severe croup** and notify MO/NP as soon as circumstances allow				
Form	**Strength**	**Route**	**Dose**	**Duration**
Injection	1:1,000 1 mg/mL	NEB with O_2 8 L/minute	5 mL (5 mg) undiluted	stat Repeat after 30 minutes if no improvement
Offer CMI: May cause restlessness, anxiety, headache or palpitations				
Management of associated emergency: Consult MO/NP [1-4]				

S4	Prednisolone			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	**Strength**	**Route**	**Dose**	**Duration**
Oral liquid	5 mg/mL	Oral	**Child › 1 month** 1–2 mg/kg (max. 50 mg)	stat
Offer CMI: May affect mood and sleep. Take with food to help reduce stomach upset				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,2,5,6]				

S4	Budesonide			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	**Strength**	**Route**	**Dose**	**Duration**
Inhalation solution	0.5 mg/2 mL 1 mg/2 mL	NEB with O_2 8 L/minute	2 mg	stat
Offer CMI: May cause facial irritation. Cover eyes during NEB and wash face afterwards				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,2,7]				

5. Follow up

- Advise to be reviewed the next day or sooner if symptoms recur
- Contact MO/NP if symptoms recur, who may consider other causes

6. Referral/consultation

- As above

Bronchiolitis - child

Background[1]

- Bronchiolitis is a lower respiratory tract viral illness in infants < 12 months of age
- Also see *Bronchiolitis - emergency management in children* https://www.childrens.health.qld.gov.au/qpec-statewide-guidelines/

1. May present with[1]

- Consider bronchiolitis if history of URTI followed by onset of **respiratory distress + fever and ≥ 1** of:
  - cough
  - tachypnoea
  - retractions
  - diffuse crackles or wheeze on auscultation
  - feeding difficulties

2. Immediate management

- Always consider differential diagnosis eg:[1]
  - Sepsis, p. 64, Foreign body inhalation, Pneumonia, p. 506

Assess severity[1,2]

Mild	Moderate	Severe
• Settled • Mild ↑ RR • No or mild chest wall retraction • SpO_2 > 92% • No apnoea • No feeding issues	• Intermittent irritability • ↑ RR • Moderate chest wall retractions • Tracheal tug, nasal flaring • SpO_2 90–92% • ± brief apnoea • ± reduced or difficulty with feeding	• Increasing irritability ± lethargy, fatigue • ↑ or ↓ RR • Marked chest wall retractions • Marked tracheal tug, marked nasal flaring • SpO_2 < 90% • ± frequent or prolonged apnoea • Reluctant or unable to feed

Continue as per **Clinical assessment**

- **Give O_2** to maintain SpO_2 > 92%
  - nasal prongs 2 L/minute **OR** if more needed Hudson mask 4 L/minute

Contact MO/NP urgently

3. Clinical assessment[1]

- Ask about:
  - recent URTI symptoms
  - feeding/hydration:
    - inadequate feeds eg < 50% of usual feeds over 12 hours
    - duration of feeds
    - number of wet nappies in last 24 hours

- Do:
  - vital signs
  - listen to chest for crackles or wheeze
  - check ears
  - bare weight
- Assess for **Risk factors for severe disease**[1]

Risk factors for severe disease[1]

- Born ‹ 37 weeks
- ‹ 10 weeks of age
- Underlying conditions eg congenital heart disease, Down syndrome, immunocompromised
- Aboriginal and Torres Strait Islander
- Failure to thrive
- Exposure to cigarette smoke
- Breastfed for ‹ 2 months

4. Management

- Contact MO/NP in all cases, urgently if moderate-severe

Moderate-severe cases[1,2]

- Require urgent evacuation
- Monitor closely until evacuation:
  - vital signs + WOB
  - SpO_2
  - discontinue O_2 if SpO_2 persistently › 92%
  - **note:** brief ↓ SpO_2 ‹ 92% does not require O_2
- **Do NOT give** corticosteroids, adrenaline (epinephrine) or nebulised hypertonic saline[1-3]
- Only give salbutamol on MO/NP advice
- High flow nasal cannula (HFNC) oxygen therapy can only be initiated if ‹ 24 months of age following consultation with paediatrician at a Level 4 facility or retrieval services who will consult paediatrician:[4]
  - HFNC should not be used if › 24 months of age[2,4]
  - if receiving HFNC should be immediately evacuated
- Support parent/carer to offer small frequent feeds:[1,2]
  - if feeding inadequately MO/NP may consider NG or IV hydration

If mild symptoms

- If mild with risk factors, further observation/hospitalisation may be required[1]
- Consider sending home in consultation with MO/NP if:[1,2]
  - able to maintain SpO_2 in room air
  - feeding adequately
  - parent/carer can safely manage infant at home eg consider time of day, parent/carer understanding of condition, access to clinic
- Provide **Advice to parents/carers** before sending home[1,2]

Advice to parents/carers[1,2]

- Most children are back to normal within 7–10 days. Cough may last up to 1 month
- Bring your child back if you are worried or if any:
  - trouble with feeding and fewer wet nappies than usual
  - difficultly breathing
  - very sleepy, becomes pale or sweaty or begins to look blue in the skin
  - pauses between breaths
- Make sure your child is getting enough fluids. Smaller feeds given more often may help
- Paracetamol may help if child looks uncomfortable
- Keep child away from smoke
- Prevent spread of infection by:
  - keeping your child away from other small children for the first few days of illness
  - washing your hands frequently

5. Follow up

- If not evacuated advise to be reviewed the following day or earlier if concerned:
  - consult MO/NP if not improving

6. Referral/consultation

- As above

HMP Pneumonia - child

Recommend

- Children with severe pneumonia living north of Mackay, Tennant Creek and Port Hedland, require a different antibiotic regimen during the wet season to cover for melioidosis[1]

Background

- Viruses are the most common cause in children › 2 months[1]

1. May present with[2]

- Fever, cough
- Looks unwell
- ↑ RR
- ↑ WOB - use of accessory muscles eg:
  - tracheal tug
  - subcostal and intercostal recession (indrawing between or under the ribs)
  - infants may have nasal flaring, grunting, head bobbing, episodes of apnoea

2. Immediate management[1,2]

- Do vital signs
- **Screen for** Sepsis, p. 64
- Rapidly assess severity as per table below

Assess severity

Mild	Moderate	Severe
• No or mild ↑ WOB	• Moderate ↑ WOB	• Severe ↑ WOB
• RR normal or mild ↑	• ↑ RR	• ± grunting/nasal flaring/apnoea[1]
• SpO_2 ≥ 95%	• SpO_2 ≤ 95%	• Marked ↑ RR ± exhaustion
• HR normal	• ↑ HR	• SpO_2 ≤ 90%
• Alert[2]	• Capillary refill ≥ 3 seconds	• ↑ HR
• Feeding normally		• Capillary refill ≥ 3 seconds

Continue as per **Clinical assessment**

- **Give O_2** to maintain SpO_2 ≥ 95%
- **Contact MO/NP urgently**
- **Urgent evacuation**[3]

3. Clinical assessment[2]

- Also consider other diagnoses eg Bronchiolitis, p. 503, URTI, p. 494
- **Get rapid history,** including:
  - rapid breathing, apnoea
  - cough
  - pleuritic pain (sharp chest pain) in older child
  - abdominal pain[2]
  - fever
  - feeding - normal or reduced intake/ability to feed

  - times passed urine/number of wet nappies in last 24 hours
  - vomiting, diarrhoea
  - recent infections eg bronchiolitis
  - recent travel
- Do physical examination, including:
  - listen to chest for any crackles, wheeze
  - Hydration assessment - child, p. 535
  - check:
    - ENT
    - skin for rash
- Assess for risk factors for severe pneumonia eg:[2]
  - born ‹ 37 weeks
  - immunocompromised
  - underlying conditions eg chronic lung disease, cardiopulmonary disease, cancer

4. Management

- Contact MO/NP in all cases, **urgently if moderate–severe or ‹ 3 months of age:**
  - if ‹ 2 months treat as per Sepsis, p. 64[1]

Moderate–severe pneumonia[2]

- Arrange urgent evacuation[3]
- If unable to maintain SpO_2 ≥ 95% **consult MO/NP urgently**
- Monitor closely until evacuation:
  - vital signs + WOB
- MO/NP may order:
  - oral amoxicillin or IV/IM antibiotics:
    - if allergy to penicillins - MO/NP will advise
  - chest x-ray, bloods, blood cultures[2]
- If not tolerating oral fluids, MO/NP may consider NG or IV fluids
- Offer paracetamol for discomfort of fever or pain. See Acute pain, p. 32

Mild pneumonia

- MO/NP may order:
  - oral amoxicillin:
    - if allergy to penicillins - MO/NP will advise
- If mild with risk factors for severe pneumonia, further observation/hospitalisation may be required[2]
- Consider sending home in consultation with MO/NP if:[2]
  - normal RR + HR
  - able to maintain SpO_2 ≥ 95% in room air
  - feeding adequately
  - parent/carer can safely manage infant at home eg consider time of day, parent/carer understanding of condition, access to clinic
- Provide **Advice to parents/carers** before sending home[2]

S4	Amoxicillin			Extended authority ATSIHP/IHW/IPAP
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	**Strength**	**Route**	**Dose**	**Duration**
Capsule	250 mg 500 mg	Oral	**Child › 2 months** 25 mg/kg (max. 1 g) tds	5–7 days
Oral liquid	250 mg/5 mL 500 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea or thrush				
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,4]				

Advice to parents/carers[2]

- Most children usually improve within 1–2 days of starting antibiotics, although they may cough for a few days/weeks
- Bring your child back if you are worried or if any:
  - vomiting and are unable to drink much
  - difficulty breathing
  - very sleepy, becomes pale or sweaty, or begins to look blue in the skin
  - pauses between breaths
- Make sure your child is getting enough fluids. Smaller feeds given more often may help
- Paracetamol may help if child looks uncomfortable

5. Follow up

- If not evacuated advise to be reviewed next day, or earlier if concerned:
  - consult MO/NP if not improving
- Advise to see MO/NP at next clinic

6. Referral/consultation

- As above

HMP Pertussis - adult/child
Whooping cough

Background

- Still prevalent - outbreaks occur every 3–4 years. Infants ‹ 6 months at ↑ risk of complications[1]

1. May present with

- Apnoea or cyanosis ± cough - may be only symptom in infants[1]
- Intermittent violent uncontrollable coughing ± 'whoop' when breathing in[1]
- Persistent cough up to 3 months, otherwise well[1,2]
- Vomiting following coughing spasms[2]

2. Immediate management

- Do vital signs
- If SpO_2 ≤ 93%, cyanosis or apnoea:
  - give O_2
  - contact MO/NP urgently
- Use droplet PPE. If able, see patient away from main treatment room[3]

3. Clinical assessment[1-3]

- **Ask about**:
  - cough - onset, persistent or getting worse, vomiting after coughing
  - similar illness in household contacts
  - vaccination status - patient + household contacts[3]
  - other symptoms
- **Check:**
  - WOB. Chest - listen for air entry, crackles, wheeze
  - weight - bare weight if < 2 years
- Take nasopharyngeal swab for pertussis PCR

4. Management

- Contact MO/NP promptly if:
  - young child or baby - even if mild symptoms
  - acutely unwell
- Advise Public Health Unit you suspect pertussis

If pertussis diagnosed

- Consult MO/NP + Public Health Unit, who may advise:
  - if ≤ 3 weeks of cough or other symptom onset give:[2]
    - azithromycin to patient and contacts (ie if been within 1 metre of patient for > 1 hour)[2]
- Advise patient/carer:[3]
  - highly infectious - spreads by coughing/sneezing + direct contact eg wiping nose, mouth
  - **stay away from others until antibiotics have been taken for 5 days**, especially:
    - children and babies, pregnant women, work, school, preschool or child care
  - cough can continue for a few weeks

S4	**Azithromycin**			**Extended authority** ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP, RIPRN and RN must consult MO/NP				
Form	**Strength**	**Route**	**Dose**	**Duration**
Tablet	500 mg	Oral	**Adult** 500 mg on day 1, then 250 mg daily **Child ≥ 6 months** 10 mg/kg (max. 500 mg) on day 1 THEN 5 mg/kg (max. 250 mg) daily **Infant < 6 months** 10 mg/kg daily	5 days
Oral liquid	200 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea, abdominal cramps or thrush				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 3,4				

5. Follow up

- As per MO/NP:
  - if discharged home advise to return if symptoms worsen or they are concerned
  - follow up swab result

6. Referral/consultation

- Notify Public Health Unit of confirmed or suspected pertussis cases[1] ◑

Epiglottitis - child

Background[1]

- Epiglottitis is a life-threatening inflammation of the epiglottis and surrounding area
- Since the *Haemophilus influenzae* type b (Hib) vaccine, epiglottitis is rare

1. May present with[2]

- High fever, looks sick
- Hyperextension of neck, may not move neck
- Drooling saliva, difficulty swallowing
- Stridor
- Restless, unsettled

2. Immediate management[1,2]

- Patients with epiglottitis often have sepsis:
  - contact MO/NP urgently
  - urgent evacuation required
- See Sepsis, p. 64 for further management, including urgent antibiotics:
  - ceftriaxone or cefotaxime
- Avoid distressing child as may exacerbate symptoms:
  - **do not examine throat**
  - allow child to settle in the position most comfortable
  - if O_2 required and mask distressing:
    - consider using O_2 tubing held near nose/mouth - 10 L/minute

3. Clinical assessment[1,2]

- Assess as per Sepsis, p. 64
- Also look for drooling + absent cough with low pitched expiratory stridor (often snoring)

4. Management[1]

- Manage as per Sepsis, p. 64

5. Follow up

- As per MO/NP instructions

6. Referral/consultation

- As above

HMP Acute post streptococcal glomerulonephritis (APSGN) - adult/child

Recommend[1]

- Aim to prevent APSGN by promoting:
  - early treatment of Impetigo, p. 298 (skin sores) and Sore throat, p. 495
  - community control of scabies and skin sores
  - regular washing + hand hygiene, especially children

Background[1]

- APSGN is an inflammatory kidney disease which occurs 2–3 weeks after a skin or throat infection with Group A *Streptococcus* (GAS), or occasionally groups C or G
- Common in Aboriginal and Torres Strait Islander children in Northern Australia in areas with high levels of scabies, skin sores and overcrowded living conditions
- Most common 2–17 years of age, but can occur at any age

1. May present with[1,2]

- Microscopic haematuria detected on urinalysis
- Acute nephritis - **typical presentation:**
  - puffy face (facial oedema)
  - ≥ moderate blood in urine on dipstick - urine can look smoky, tea/cola coloured
  - hypertension
  - peripheral oedema eg in legs/hands
  - proteinuria
- Skin sores/infected scabies OR recent history of skin sores or sore throat
- In severe cases of nephritis:
  - respiratory distress due to pulmonary oedema
  - lethargy, general weakness, anorexia
  - uncommon - severe headache, convulsions, coma

2. Immediate management

- If severe symptoms, urgently consult MO/NP

3. Clinical assessment[1,2]

- Get history + ask about:
  - puffiness of face or eyes, legs or arms
  - urine colour
  - urine output - has it decreased
  - any other symptoms eg SOB, feeling unwell, off food
  - do any close contacts have similar symptoms
  - recent history of skin sores/infected scabies or sore throat (in prior 2–3 weeks)
  - previous medical history, including APSGN or close contacts with APSGN
- Do physical examination, including:[1]
  - vital signs - use the table **BP requiring further evaluation in children** to determine if child is hypertensive. Do not rely on CEWT BP ranges

- urinalysis - check for blood and protein
- weight - bare weight if < 2 years. Assess against recent weights
- skin for sores/infected scabies, p. 298
- face, hands and feet for oedema/puffiness
- throat - any redness
- listen to chest for crackles or wheeze - may indicate pulmonary oedema

Take pathology[1]

- **If symptoms of acute nephritis:**
  - if skin sores present - MCS swabs from 2 different sites. See How to take a wound swab, p. 324
  - if sore throat - MCS throat swab
  - bloods - ASOT, antiDNAase B titres, C3, C4, FBC, film, UE, LFT
  - urine for MCS and ACR
  - on the pathology form, include 'suspected APSGN'
- **If microscopic haematuria but NO other symptoms + no history of APSGN in prior 6 months:**
  - urine for MCS and ACR

Diagnosis of APSGN[1]		
Possible APSGN	Requires *laboratory suggestive evidence* only	
Probable APSGN	Requires *clinical evidence* only	
Confirmed APSGN	Requires either *laboratory definitive evidence* **OR** *laboratory suggestive evidence* AND *clinical evidence*	
Clinical evidence	**Laboratory suggestive evidence**	**Laboratory definitive evidence**
At least 2 of the following: • Facial oedema • ≥ moderate haematuria on dipstick • Hypertension • Peripheral oedema	Haematuria on microscopy (RBC > 10/uL) **AND** Evidence of recent GAS infection eg positive culture from skin or throat, or elevated ASO titre or Anti-DNase B **AND** Reduced C3 level	Renal biopsy suggestive of APSGN

BP requiring further evaluation in children[3]				
If BP is LESS than the values on this table, then it is NOT elevated				
Age (years)	**Boys**		**Girls**	
	Systolic	**Diastolic**	**Systolic**	**Diastolic**
1	98	52	98	54
2	100	55	101	58
3	101	58	102	60
4	102	60	103	62
5	103	63	104	64
6	105	66	105	67
7	106	68	106	68
8	107	69	107	69
9	107	70	108	71
10	108	72	109	72
11	110	74	111	74
12	113	75	114	75
≥ 13–17	120	80	120	80

BP in children[3]

- Measure on right arm for consistency, with appropriately sized cuff
- Can vary considerably during the same visit or across visits. If initial BP ↑, do 2 more BP at same visit and average them
- Check against the **BP requiring further evaluation in children** table:
  - if BP is ≥ the values, also measure height
  - then go to *Clinical practice guidelines for screening and management of high blood pressure in children* https://pediatrics.aappublications.org/content/142/3/e20181739
    - check BP against table 4 (boys) or table 5 (girls)
    - a BP › 90th percentile is elevated
    - if unsure, consult MO/NP

4. Management[1,3]

- **If microscopic haematuria found on urinalysis** but NO other symptoms:
  - if prior history of APSGN - haematuria can persist for up to 3–6 months post resolution[1]
  - if there is no history of APSGN in last 6 months - advise to see MO/NP at next clinic
- **Consult MO/NP promptly if:**
  - any child with oedema or hypertension:
    - BP › 90th percentile is elevated and requires further investigation
    - BP › 95th percentile requires aggressive treatment
  - if hypertension ± heart failure, MO/NP may order furosemide (frusemide)
- **If 'clinical evidence' suggests probable APSGN** promptly consult MO/NP:[1]
  - evacuation/hospitalisation required
  - give benzathine benzylpenicillin (Bicillin LA®):
    - if allergic to penicillin give oral trimethoprim + sulfamethoxazole[4]
  - treat Scabies, p. 316 if present
  - ask for close contacts from previous 2 weeks + adults and children staying in house
  - notify Public Health Unit for further advice on examining + management of contacts

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	≤ 6 kg	300,000 units (0.6 mL)	stat Inject slowly over at least 2–3 minutes
			6– ‹ 12 kg	450, 000 units (0.9 mL)	
			12– ‹ 16 kg	600,000 units (1.2 mL)	
			16– ‹ 20 kg	900,000 units (1.7 mL)	
			≥ 20 kg	1.2 million units (2.3 mL)	
Offer CMI: May cause diarrhoea, nausea and pain at injection site					
Note: Ventrogluteal, p. 564 or vastus lateralis sites preferred. Do not give in deltoid. See Managing injection pain, p. 563					
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems					
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,4,5]					

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	**Adult** 160 + 800 mg bd **Child ≥ 1 month** 4 mg/kg (max. 160 mg) bd *Dose as per trimethoprim component*	3 days
Oral liquid	40 + 200 mg /5 mL			
Offer CMI: 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				
Note: If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
Pregnancy: Do not use in the 1st trimester or in late pregnancy				
Contraindication: Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,4,6]				

5. Follow up[1]

- Follow up close contacts in collaboration with Public Health Unit
- Children with a history of APSGN should be monitored through an individualised care plan developed in conjunction with a paediatrician. Check care plan is in place and follow up anything outstanding
- Resolution of APSGN:
  - usually resolves quite rapidly assuming concurrent resolution of infection
  - haematuria can persist for up to 3–6 months
  - proteinuria may persist longer - mild increase sometimes up to 3 years or more

6. Referral/consultation

- Consult MO/NP for all suspected cases
- APSGN is notifiable in the NT ①[1]
- In Qld, APSGN is not notifiable, however, alert Public Health Unit

HMP Acute rheumatic fever (ARF) - adult/child

Recommend[1]

- ARF should **always be considered in patients with sore ± swollen joint(s)** in populations at high risk of ARF, RHD or Group A Strep infections
- Aim to prevent ARF by promoting:
  - early treatment of Impetigo, p. 298 (skin sores) and Sore throat, p. 495
  - community control of scabies and skin sores
  - regular washing + hand hygiene, especially children

Background[1]

- ARF:
  - is an auto-immune response to an untreated infection with Group A Strep in the throat + the skin. It affects the heart, joints, skin + the nervous system
  - difficult to diagnose. Correct diagnosis is important so that people who do have ARF are correctly managed + those who do not have it avoid unnecessary treatment
  - peaks in children aged 5–14 years + adults 15–24, reducing substantially with age. Is rare › 35 years
- **High risk populations:**
  - Aboriginal and Torres Strait Islander people living in rural + remote areas
  - Maori + Pacific Islander people, migrant groups
  - previous history of ARF/RHD and aged ‹ 40
- **Recommended resources:**
  - *The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease* (3rd ed) https://www.rhdaustralia.org.au/resources
  - *ARF & RHD guideline app* https://www.rhdaustralia.org.au/apps + Diagnosis calculator
  - *Suspected acute rheumatic fever clinical pathway* (Qld) https://clinicalexcellence.qld.gov.au/sites/default/files/docs/clinical-pathways/suspected-arf-clinical-pathway.pdf

1. May present with[1]

- Symptoms may evolve over several weeks
- Can be very subtle eg joint pain or unexplained fever
- **Sore ± swollen joint** - most common symptom (arthritis or arthralgia):
  - swollen hot joint with pain on movement
  - usually asymmetrical and migratory - 1 joint becoming inflamed as another subsides
  - may involve 1 or multiple joints
  - large joints usually affected - especially knees and ankles
  - usually extremely painful - often out of proportion with clinical signs
  - problems weight-bearing or walking unaided
  - joints may be painful but not swollen
- **Fever ≥ 38** - common
- **Carditis:**
  - heart murmur
  - may be signs of heart failure eg:
    - ↑ RR, ↑ HR (resting)
    - crackles in base of lungs, pulmonary oedema
    - ↑ JVP, oedema in feet/lower legs
    - puffy face, enlarged liver

- **Sydenham chorea** - a mood and movement disorder:
  - jerky, uncoordinated movements eg https://www.youtube.com/watch?v=VFBOTwmVAoA
    - especially affects hands, feet, tongue, face
    - disappears during sleep
    - may affect 1 side of the body only
  - very common in Aboriginal and Torres Strait Islander children (28% of presentations)
  - relatives and teachers may describe them as 'jumpy kids'
  - strongly associated with carditis
  - **note:** Sydenham chorea can develop after other symptoms have resolved and can be used solely to diagnose ARF
- **Rare - subcutaneous nodules:**
  - crops of small round painless nodules over elbows, wrists, knees, ankles, Achilles tendon, occiput and vertebrae
  - highly specific symptom of ARF; strongly associated with carditis
- **Extremely rare - erythema marginatum:**
  - circular patterns of bright pink macules or papules on trunk and proximal extremities
  - difficult to detect in dark skinned people, but highly specific for ARF

2. Immediate management[1]

- Look for signs of carditis/heart failure. **If present urgently contact MO/NP:**
  - + strict bed rest

3. Clinical assessment[1]

- **Ask about symptoms**, in particular:
  - pain or swelling in limb(s) or joint(s)
  - jerky/uncoordinated movements
  - current or recent fever
  - measures taken to treat symptoms:
    - have they tried ibuprofen for joint pain; how effective
  - history from a relative or teacher eg strange movements
  - recent history of sore throat, painful joint(s) or skin infections, and if treated
- **Get past history**, including:
  - past episodes of ARF or previous symptoms suggesting ARF
  - family history of ARF/RHD
  - history of benzathine benzylpenicillin (Bicillin LA®) injections for ARF/RHD:
    - have any injections been missed
    - if unsure contact RHD Qld ✆ 1300 135 854 or state/territory RHD control program
    - current medicines
- **Do physical examination**, including:
  - vital signs - note any fever
  - ECG - note prolonged P–R interval, a sign of carditis

Upper limits for normal P–R interval[1]

Age (years)	Seconds
3–11	0.16
12–16	0.18
17+	0.20

  - inspect and palpate joints for:
    - swelling, tenderness and mobility
    - does the pain seem out of proportion to the joint signs
  - inspect:
    - skin for old or infected sores
    - throat for redness
    - for any jerky movements of the face, tongue, trunk and limbs
  - auscultate the heart if skilled - listen for a murmur/abnormal sounds eg whooshing sound
- **Take pathology:**
  - bloods:
    - FBC, ESR, C-reactive protein (CRP)
    - anti-streptococcal serology - both ASO and anti-DNase B titres
    - blood cultures if T ≥ 38
  - do throat swab - culture for Group A Strep
  - if skin sores, swab for MCS. See How to take a wound swab, p. 324
  - **note:** take swab(s) before giving antibiotics

4. Management[1]

- Consult MO/NP in all cases
- See:
  - ***ARF Diagnosis calculator*** https://www.rhdaustralia.org.au/apps
  - ***Suspected acute rheumatic fever clinical pathway*** (Qld):
    - https://clinicalexcellence.qld.gov.au/sites/default/files/docs/clinical-pathways/suspected-arf-clinical-pathway.pdf OR
- If monoarthritis (inflammation of 1 joint) consider Septic arthritis, p. 550 until proven otherwise
- Offer analgesia. See Acute pain, p. 32
  - **give paracetamol**. Withhold NSAIDs (eg ibuprofen) until diagnosis confirmed - can cause joint symptoms to disappear complicating the diagnosis
  - if severe pain consult MO/NP
- MO/NP may:
  - arrange evacuation for physician/cardiology review, echo and for diagnosis
  - hospitalisation should occur within 24–72 hours after onset of symptoms, even if symptoms resolve
  - **note:** thorough investigations for alternative diagnoses should always be undertaken eg septic arthritis, disseminated gonococcal infection, gout, innocent murmur, congenital heart disease
- **If ARF possible/suspected give:**
  - benzathine benzylpenicillin (Bicillin LA®)
  - if allergic give:
    - cefalexin if hypersensitivity to penicillin eg rash OR
    - azithromycin if anaphylaxis or immediate reaction to penicillins
- Contact Public Health Unit, RHD Qld ✆ 1300 135 854, or state/territory RHD control program for advice as needed

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	**Child < 20 kg** 600,000 units (1.2 mL) **Adult or Child ≥ 20 kg** 1.2 million units (2.3 mL)	stat Inject slowly over at least 2–3 minutes
Offer CMI: May cause diarrhoea, nausea and pain at injection site				
Note: Ventrogluteal, p. 564 or vastus lateralis sites preferred. Do not give in deltoid. See Managing injection pain, p. 563				
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,2]				

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	**Adult** 1 g bd **Child** 25 mg/kg (max. 1 g) bd	10 days
Oral liquid	250 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea, vomiting, dizziness, headache or thrush				
Note: If renal impairment seek MO/NP advice				
Contraindication: Severe or immediate allergic reaction to a cephalosporin or a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,3,4]				

S4	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	**Adult** 500 mg daily **Child** 12 mg/kg (max. 500 mg) daily	5 days
Oral liquid	200 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea, abdominal cramps or thrush				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,5,6]				

5. Follow up[1]

- As per guidance of specialist MO

6. Referral/consultation[1]

- Consult MO/NP on all occasions of suspected ARF
- Suspected ARF requires immediate notification to the Public Health Unit (Qld, NT, WA, SA + NSW) based on clinical presentation

Ear problems

Ear assessment - adult/child

Recommend[1]

- **Check ears every time a child attends the clinic**
- Encourage to bring child to clinic if any ear symptoms, concerns about hearing or language
- If hearing loss, the school/day care can put in measures to assist the child eg sound field amplification systems and student placement (seating) in the classroom

Background[1]

- Otitis media (OM) is inflammation ± infection in the middle ear. OM in Aboriginal and Torres Strait Islander children can start in the first months of life, and may lead to recurrent ± chronic infections and hearing loss. **Hearing loss can have a lifelong impact** eg speech development, learning
- Resources:
  - *Deadly ears* https://www.childrens.health.qld.gov.au/chq/our-services/community-health-services/deadly-ears/
  - *Care for kids* http://www.careforkidsears.health.gov.au/internet/cfke/publishing.nsf/Content/Home
  - *Otitis media guidelines* + App https://otitismediaguidelines.com/#/start-main
  - *Chronic conditions manual* https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm - how to do hearing checks, tympanometry and audiometry

Preventing ear infections[1]

- Frequent handwashing, especially after blowing nose/coughing
- Keep face and hands clean of nasal discharge
- Pneumococcal and influenza vaccination
- 'Blow, breathe, cough'[2]
- Breastfeed. If bottle feeding, use upright position (not lying in cot)
- Restrict use of dummies › 6 months of age
- Keep sick children away from babies
- Keep away from smoke

1. May present with[1]

- No symptoms - routine check of ears
- Sore, itchy, or discharging ear(s) or hearing loss
- Young child - pulling/rubbing/holding ear(s), unsettled/irritable, ↓ feeding
- Concerns about ears, hearing or language/talking

2. Immediate management[1]

- If unwell child with fever, screen for Sepsis, p. 64

3. Clinical assessment[1]

- **If ear symptoms, ask about:**
  - onset, severity, duration
  - pain/itchy
  - discharge - colour, amount
  - deafness, fullness
  - dizziness/tinnitus (ringing in the ear)
  - recent swimming/water sports
  - trauma/blow to ear eg slap, diving, object poked in[3]

Positioning child to examine ears and throat

- Any other symptoms eg:
  - runny nose, sore throat, cough
  - hearing loss
  - concerns about language/talking, learning or behavioural problems (could mean ↓ hearing)
- Get past history:
  - prior ear infection(s), perforation(s), operation(s) to ear, ENT review - what, when, treatment
  - prior serious illnesses eg meningitis
  - last hearing test/audiology (date), results
  - family history of ear/hearing concerns

Examine ears[1,4,6]

- Examine both ears. Start with normal ear
- **Check pinna** (outer ear). Any:
  - discharge, flaky or scaly skin
  - pain on moving pinna or tragus (flap of skin in front of ear canal)
  - is ear pushed out/forwards
- **Check behind ear** for redness or swelling
- Palpate for swollen/tender lymph glands - around ears and neck
- **Look inside ear with otoscope** - if pain levels allow:
  - pull pinna to straighten canal: **adult** - up, out and back; **child** - down and back
  - if pus/discharge - gently clean with Tissue spears, p. 530 first
  - if **impacted wax** prevents examination consider syringing with warm water **(if skilled)**:[7]
  - **note:** do NOT irrigate if perforation likely, diabetes, immunocompromised or on anticoagulants[7]
- **Ear canal**:
  - swelling, redness, lump(s), flakes/scales
  - discharge, foreign body, debris, dislodged grommet (ventilation tube)
- **Tympanic membrane (TM)** (eardrum):[1,6]
  - colour - pearly grey, yellow/amber, pink/red, white (pus), white chalky patches (scarring)
  - translucency - shiny/translucent (normal), opaque, dull/cloudy, fluid/bubbles
  - position - neutral, bulging or retracted (sucked in):
    - handle of malleus is prominent if retracted, or not seen well if bulging[6]
  - perforation (hole) - position, duration, size (a readily visible hole is 'moderate' to 'large' size):[3]
    - a severely retracted eardrum, retraction pocket or healed hole might be mistaken for a perforation[8]
  - grommet

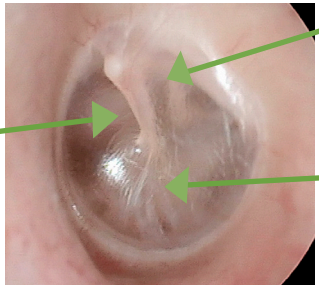
Eardrum red flags[8] ANY of
- Hole or retraction in attic (upper) area
- Crust/granulation/discharge in attic area
- Severely retracted (sucked in) eardrum
- Dull white mass behind eardrum
- Perforation near edge of eardrum

→ Could be **Cholesteatoma**
Consult MO/NP for urgent ENT referral

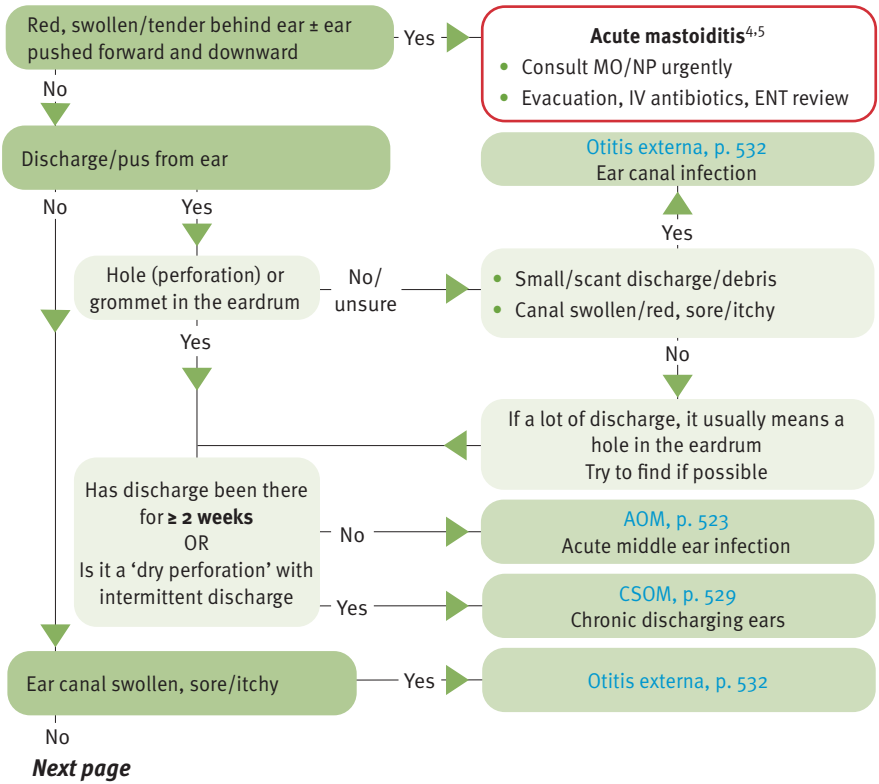
- **Consider looking for movement of intact eardrum(s)** if not too painful:[1]
  - if eardrum moves in and out easily you can exclude a perforation + fluid in the middle ear (ie exclude otitis media and acute otitis media)
  - **check for movement by:** gentle valsalva (hold nose and blow), pneumatic otoscopy or tympanometry (Type A is normal)
- **Check nose, throat, chest** + other systems as needed

Normal eardrum (left ear)

- Pearly grey, shiny, translucent, cone of light present, no redness, handle of malleus vertical
- Also see *Educational resources* in the Otitis media guidelines for photos



Ear differential diagnosis[1,4,6]



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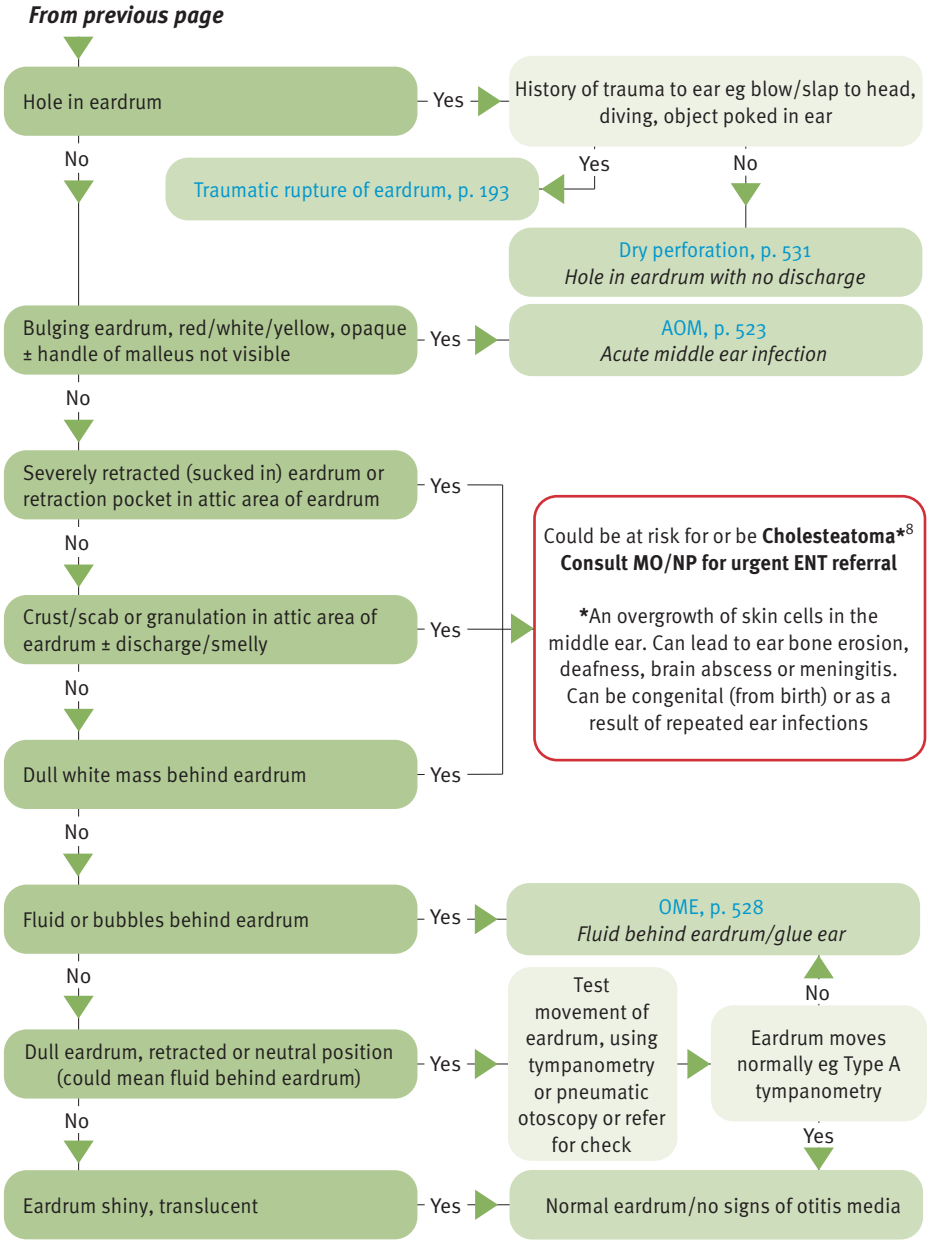

From previous page
Hole in eardrum
Yes
History of trauma to ear eg blow/slap to head, diving, object poked in ear
No
Yes
No
Traumatic rupture of eardrum, p. 193
Dry perforation, p. 531
Hole in eardrum with no discharge
Bulging eardrum, red/white/yellow, opaque ± handle of malleus not visible
Yes
AOM, p. 523
Acute middle ear infection
No
Severely retracted (sucked in) eardrum or retraction pocket in attic area of eardrum
Yes
No
Crust/scab or granulation in attic area of eardrum ± discharge/smelly
Yes
No
Dull white mass behind eardrum
Yes
Could be at risk for or be Cholesteatoma*[8]
Consult MO/NP for urgent ENT referral
*An overgrowth of skin cells in the middle ear. Can lead to ear bone erosion, deafness, brain abscess or meningitis. Can be congenital (from birth) or as a result of repeated ear infections
No
Fluid or bubbles behind eardrum
Yes
OME, p. 528
Fluid behind eardrum/glue ear
No
Dull eardrum, retracted or neutral position (could mean fluid behind eardrum)
Yes
Test movement of eardrum, using tympanometry or pneumatic otoscopy or refer for check
No
Eardrum moves normally eg Type A tympanometry
Yes
No
Eardrum shiny, translucent
Yes
Normal eardrum/no signs of otitis media

HMP Acute otitis media (AOM) - adult/child

Acute middle ear infection ± perforation

Recommend[1,2]

- A red eardrum alone is not diagnostic of AOM. It can also be caused by crying, fever, URTI
- Always consider other causes of illness in a sick child with fever

Background[1]

- Perforation of the eardrum is common, resulting in ear discharge and relief of pain[2]

1. May present with[1-3]

- Acute onset of:
  - bulging eardrum (can look red or white/yellow)
  - fluid in the middle ear **OR** ear discharge for < 2 weeks
- ± symptoms eg:
  - pain, fever, lethargy
  - URTI symptoms eg cough, runny nose
  - pulling/rubbing/holding ear(s)
  - unsettled/irritable (young child)
  - infant may present with feeding difficulties

2. Immediate management[1,2]

- Do vital signs
- Screen for Sepsis, p. 64

3. Clinical assessment[1]

- Get history, including:
  - pain - location, onset
  - discharge from ear - duration[1]
  - previous ear infections - when, how treated
  - grommets
  - other symptoms - eg fever, cough, runny nose, rash, nausea/vomiting, diarrhoea
  - feeding - normal or ↓ intake
  - times passed urine/number of wet nappies in last 24 hours
  - immunocompromised
- Do physical examination, including:
  - full examination if unwell child
  - ears as per Ear assessment, p. 519
    - eardrum - look for bulging OR perforation with discharge
    - it may be difficult to see eardrum if profuse discharge, especially in infants[4]
  - nose, throat, chest
- If ear discharge, take swab for MCS

4. Management[1-4]

- Consult MO/NP if any of:
  - ‹ 3 months of age
  - T ≥ 39
  - rash, ↑RR, or respiratory distress
  - looks sick, lethargic, pale, irritable, not alert or interactive when T reduced
  - immunocompromised
- Assess if antibiotics indicated as per table below[3,4]

Indications for antibiotics for AOM

Indications for antibiotics - if any of:

- ☐ Systemically unwell ie lethargic, pale, very irritable
- ☐ Infant ‹ 6 months of age
- ☐ Child ‹ 2 years old with AOM in both ears
- ☐ Ear discharging/perforation
- ☐ Symptoms present for › 48–72 hours
- ☐ **Child at HIGH RISK of complications**/ chronic ear infections[4]

Child at 'HIGH RISK of complications'

- **Aboriginal and Torres Strait Islander child** if any of:
  - living in remote community
  - ‹ 2 years old
  - first episode of OM ‹ 6 months of age
  - family history of CSOM (runny ears)
  - current or prior perforation
- **Any child** if any of:
  - immunocompromised, cochlear implant
  - craniofacial abnormalities, cleft palate
  - developmental delay, Down syndrome
  - existing hearing loss, severe visual impairment

- **If antibiotics NOT indicated**:[4]
  - reassure AOM will often resolve by itself
  - advise to be reviewed in 2–3 days or sooner if becomes more unwell
  - if after 2–3 days there is no improvement, offer antibiotics
- **If antibiotics ARE indicated** - see **Antibiotics for AOM** flowchart
- **In all cases,** advise:[3]
  - symptoms usually last 2–3 days. If acute perforation, it will usually heal in around 10 days
  - if ear discharging clean with Tissue spears, p. 530
  - if pain/discomfort, regular paracetamol ± ibuprofen.[4,5] See Acute pain, p. 32
  - if severe pain, unrelieved by above, consult MO/NP

Antibiotics for AOM[3,4]

- **Note: if allergy to penicillins,** REPLACE amoxicillin with trimethoprim + sulfamethoxazole and consult MO/NP if not responding to treatment

Aboriginal and Torres Strait Islander CHILD[3] — **No** → Amoxicillin for **5 days**

If not improving after 2–3 days of antibiotics change to amoxicillin + clavulanic acid **OR** as guided by MCS results*

Yes ↓

Is eardrum perforated/discharge — **Yes** →

- Amoxicillin **HIGH DOSE** for **14 days**
- **OR** if adherence a concern, a single dose of azithromycin + repeat dose in 7 days
- Review at 4–7 days or sooner if concerned:
  - if resolved, go to Follow up, p. 527

If not resolved

- Consult MO/NP who may consider:
  - if taking amoxicillin, changing to amoxicillin + clavulanic acid for 7 days **OR** 2nd dose of azithromycin if not given already (and 7 days since 1st dose) **OR** as guided by MCS results*
  - ± adding ciprofloxacin ear drops. See CSOM, p. 529 for doses
- Continue to review weekly

- If resolved, go to Follow up, p. 527
- If discharge persists for ≥ 2 weeks continue management as per CSOM, p. 529

No ↓

- Amoxicillin for at least **7 days**:
  - if antibiotics have been given in prior month for AOM give **HIGH DOSE**
- **OR** if adherence a concern, a single dose of azithromycin
- Review in 4–7 days or sooner if concerned:
  - if resolved, go to Follow up, p. 527

Bulging eardrum persists / Eardrum has burst

Give **HIGH DOSE** amoxicillin for 7 more days (or repeat dose of azithromycin)
Review again in 1 week

- If resolved, go to Follow up, p. 527
- **If not resolved**, consult MO/NP who may advise to continue **HIGH DOSE** amoxicillin **OR** start amoxicillin + clavulanic acid for 7 days:
  - + review adherence and continue to review weekly

*± discuss with ID specialist/microbiologist

S4	Amoxicillin			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	**Adult and child ≥ 12 years** 1 g bd	5 days
Oral liquid	250 mg/5 mL 500 mg/5 mL		**Child › 1 month to ‹ 12 years** 30 mg/kg (max. 1 g) bd	5–7 days
			HIGH DOSE **Child › 1 month to ‹ 12 years** 45 mg/kg (max. 1 g) bd	7 days **If perforation** 14 days
Offer CMI: May cause rash, diarrhoea, nausea or thrush				
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,4,6]				

S4	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	**Child** 30 mg/kg (max. 1 g)	**Single dose** Given as direct observed treatment. Repeat in 7 days if indicated
Oral liquid	200 mg/5 mL			
Offer CMI: May cause rash, diarrhoea, nausea, abdominal cramps or thrush				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,9]				

S4	Amoxicillin + clavulanic acid			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	**Strength**	**Route**	**Dose**	**Duration**
Tablet	875 mg + 125 mg	Oral	**Child › 2 months** 22.5 mg/kg (max. 875 mg) bd *Dose as per amoxicillin component*	5–7 days
Oral liquid	400 mg + 57 mg/5 mL			
Offer CMI: Take with food. May cause rash, diarrhoea, nausea or thrush. Can cause severe diarrhoea (colitis) due to *C. difficile*				
Contraindication: Severe or immediate allergic reaction to a penicillin. Be aware of cross-reactivity between penicillins, cephalosporins and carbapenems				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,4,7]				

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	**Adult** 160 + 800 mg bd **Child › 2 months–12 years** 4 mg/kg (max. 160 mg) bd *Dose as per trimethoprim component*	5–7 days
Oral liquid	40 + 200 mg/ 5 mL			
Offer CMI: 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				
Note: If renal impairment, taking ACE inhibitor or potassium, HIV or SLE seek MO/NP advice				
Pregnancy: Do not use in the 1st trimester or in late pregnancy				
Contraindication: Severe or immediate allergic reaction to sulfonamides, megaloblastic anaemia, severe hepatic impairment, elderly				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,4,8]				

5. Follow up[1,3]

- Follow up results of MCS. Check if sensitive to current antibiotics (discuss with MO/NP if not)
- Check taking antibiotics correctly at each review. Offer support as needed
- **If unwell** advise daily review until improving, or sooner if concerned (consult MO/NP if concerned):
  - then advise review after 4–7 days + weekly until resolved
- **If acute perforation, advise review again at 6 weeks**. If still perforated, refer to MO/NP clinic
- **If eardrum intact, advise review again at 3 months:**
  - check for persistent fluid behind the eardrum. If present, see OME, p. 528
  - **note:** it is common for fluid to be present for about a month after AOM but it is mostly gone by 3 months
- **If AOM resolved, but recurrent ie** ≥ 3 episodes in prior 6 months **OR** ≥ 4 episodes in prior year:
  - if 'child at high risk of complications' refer to next MO/NP clinic:
    - may need 3–6 months of prophylactic antibiotics
  - review monthly for 3 months:
    - if further episodes of AOM in the 3 month period, arrange ENT referral + hearing assessment
    - if no further AOM advise parent/carer to return if any concerns
- Continue routine screening as per **Ears and hearing checks** in the *Chronic conditions manual* https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm

6. Referral/consultation[1]

- If there are concerns about child's hearing, speech development, behaviour or school progress, refer for formal hearing assessment if not done recently

Otitis media with effusion (OME) - child

Fluid behind the intact eardrum(s), glue ear

Background[1,2]

- If fluid persisting › 3 months in both ears, treatment may be needed to help restore hearing loss

1. May present with[1,2]

- Fluid behind intact eardrum(s) AND no symptoms:
  - detected by loss of movement of eardrum - shown by Type B tympanometry, pneumatic otoscopy or valsalva eg on routine ear check
- Suspect if:
  - dull eardrum/light reflex missing ± eardrum retracted
  - grey-white fluid or bubbles behind eardrum - can be hard to see
  - ± hearing loss - may be evident through speech delay/learning or behavioural issues

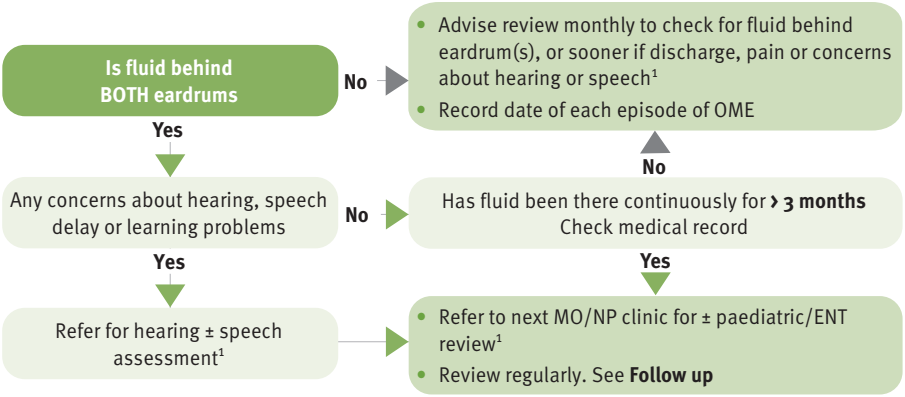
2. Immediate management

Not applicable

3. Clinical assessment[1,2]

- Get history and examine ears as per Ear assessment, p. 519, including:
  - prior OME/ear infections, when, treatment, is child under ENT specialist
  - any concerns about hearing, speech and learning/behavioural problems, development
  - hearing test(s) - when, results
  - do vital signs
  - if possible, do valsalva, tympanometry or pneumatic otoscopy to confirm eardrum not moving. See Ear assessment, p. 519

4. Management[1,2]



- Consider antibiotics for otitis media ONLY if symptoms of acute infection present[3-5]

5. Follow up[1]

- Advise to be reviewed in 1 month - add to recall list/clinic reminders
- If bilateral OME resolved, or OME in 1 ear only, continue regular review of ears eg monthly

6. Referral/consultation

- As above[1]

HMP Chronic suppurative otitis media (CSOM) - child

Ear(s) discharging for ≥ 2 weeks

Background

- Chronic discharging ear(s) can cause hearing impairment and disability. Occasionally serious complications can occur eg intracranial infection or mastoiditis[1]

1. May present with[1,3]

- Ear discharge present for ≥ 2 weeks + eardrum perforation (hole)

2. Immediate management

Not applicable

3. Clinical assessment[3]

- Get history as per Ear assessment, p. 519, including:
  - amount + duration of ear discharge
  - prior ear infections, when, treatment, is child under ENT specialist, grommet(s)
  - any concerns about hearing, speech and learning/behavioural problems, development
  - hearing test(s) - when, results
- Do vital signs
- Examine ears:
  - take swab for MCS first
  - use Tissue spears, p. 530 to clean
  - document size and location of hole in eardrum eg draw picture in notes
  - if grommet - note position (still in eardrum); any granulation tissue around base
- If pus thick and you are unable to view eardrum, consider initial irrigation of ear. Use diluted Betadine® (1 part Betadine® to 20 parts warm water)[3] followed by Tissue spears, p. 530:
  - refer to MO/NP for suctioning under direct supervision if cleaning and irrigating not effective[3]

4. Management[1,3]

- Consult MO/NP promptly ± ENT referral if:
  - T › 38.5 or systemically unwell
  - redness/swelling behind the ear[3]
  - perforation in Attic area, p. 521
  - crusting or granulation tissue - in attic area or around base of grommet
- If discharge ‹ 2 weeks, treat as AOM, p. 523 with perforation. Unless child has history of dry perforation with intermittent discharge, in which case continue as below

If discharge ≥ 2 weeks[3]

- Give ciprofloxacin ear drops
- If hole in eardrum is not visible or very small (pin hole size), consult MO/NP who may add amoxicillin or azithromycin as per AOM, p. 523
- Advise:
  - dry mop with Tissue spears, p. 530 before ear drops + as needed
  - importance of continuing tissue spears + ear drops until ears dry (**may be › 2 weeks/long-term**)
  - water precautions (when swimming/bathing) - use cotton wool in ear with Vaseline® over top, Blu Tack®, or earplugs with swimming cap
  - hearing loss likely while discharging

Tissue spears[4]

- Wash hands before and after doing
- Get tissue. Find the edge of the tissue that will tear straight. Tear strips 1–1.5 cm thick along full length of tissue, then fold strip in half
- Hold edge of ear and pull 'back' (young child) or 'back and up' (older child) to straighten ear canal
- Insert spear into ear. Twist slowly until it stops going in, or child cries, coughs or blinks
- Leave for about 30 seconds to soak up discharge. Remove and repeat with fresh spears until tip dry

Show parent/carer how to do. Offer fact sheet eg https://www.childrens.health.qld.gov.au/chq/our-services/community-health-services/deadly-ears/resources/

S4	**Ciprofloxacin**			**Extended authority** ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed for Aboriginal and Torres Strait Islander persons only				
Form	**Strength**	**Route**	**Dose**	**Duration**
Ear drops	0.3%	Ear	**Child ≥ 1 month** Instil 5 drops in affected ear bd	**CSOM** Minimum 9 days Continue until ear has been dry for at least 3 days **AOM with discharge and visible perforation** Until ear has been dry for 3 days
Offer CMI: Clean ear(s) with **Tissue spears** first. The drops will only work if pushed through the hole in the eardrum using 'tragal pumping' (press several times on the flap of skin in front of the ear canal). Show parent/carer how to do				
Note: 1 bottle should last for 9–10 days				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [1,3,5]				

5. Follow up

- Advise:[1,3]
  - see MO/NP at next clinic for ENT referral[3]
  - **review weekly** until resolved + to get more ear drops
  - at each visit check:
    - any discharge on otoscopy (only profuse discharge is visible outside the ear)
    - using drops correctly
    - adequate **Tissue spearing**
- Consider MO/NP input as needed/not resolving
- **Review 4–6 weeks** after resolved for inspection of TM ± residual perforation

6. Referral/consultation[1,3]

- Refer for hearing test at time of diagnosis
- If language, learning or behavioural problems, refer to speech pathology

Dry perforation - adult/child

Hole in eardrum with no discharge

1. May present with[1]

- Perforated eardrum (hole) without any discharge

2. Immediate management Not applicable

3. Clinical assessment[1]

- Get history and examine ears as per Ear assessment, p. 519, including:
  - duration of perforation (if known)
  - recent trauma to ear/head eg slap
  - prior ear infections, when, treatment, is child under ENT specialist
  - concerns about hearing, speech and learning/behavioural problems, development
  - hearing test(s) - when, results
- Examine ears:
  - document size and position of perforation eg draw picture in notes
  - do valsalva, tympanometry or pneumatic otoscopy to confirm eardrum not moving to exclude healed perforation. See Ear assessment, p. 519
  - note any crusting/scab or granulation on the eardrum/near hole

4. Management[1]

- If related to trauma, see Traumatic rupture of eardrum, p. 193
- **Consult MO/NP for urgent ENT referral if hole** could indicate Cholesteatoma, p. 522 eg:[2]
  - is in Attic area, p. 521 (upper area) of eardrum OR
  - boarders rim of the eardrum OR
  - crusting/scab or granulation on the eardrum/near the hole
- **Otherwise,** advise parent/carer:
  - if a child, is at risk of developing chronic discharging ears
  - will often heal by itself in time, but need to monitor
  - water precautions (when swimming/bathing).[1] Use cotton wool in ear with Vaseline® over top, Blu Tack®, or earplugs with swimming cap

5. Follow up[1]

- Advise to return if ear starts discharging
- Otherwise, review monthly until healed

6. Referral/consultation[1]

- If perforation persists for › 3 months, refer for hearing test/audiology review + ENT review
- If language, learning or behavioural problems, refer to speech pathology

HMP Otitis externa (acute) - adult/child
Ear canal infection, swimmer's ear, tropical ear

1. May present with[1]

- Ear pain (can be severe), itch
- Tenderness on moving outer ear
- ± discharge

2. Immediate management Not applicable

3. Clinical assessment[1]

- Get history including:
  - onset, duration
  - swimming/water exposure or trauma to ear canal eg vigorous cleaning/scratching, use of hearing aids
  - prior otitis externa - when, treatment
  - immunocompromised, diabetes, recent radiotherapy
- Do vital signs
- Examine ears - often very painful; approach gently:
  - if discharge, take swab for MCS first
  - dry mop using Tissue spears, p. 530 to clean any discharge/debris from canal. **Do not syringe with water**[2]
  - using otoscope, look for:
    - widespread redness/swelling of ear canal
    - discharge/debris/foreign body
    - eardrum - intact or perforated - may be too swollen to see. If **no discharge**, consider Tympanometry. Type A means the eardrum is intact[1]
- Is cause likely bacterial or fungal[3]

Bacterial[3]	Fungal[3]
• Very painful on pulling pinna, pressing tragus and on otoscopy	• Itch is predominant over pain, all manipulations are tolerable
• Narrow, swollen ear canal	• Usually wide canal
• Smelly creamy or dry pus, yellow colour, scaly/flaky canal	• Debris is thick 'wet newspaper' (hyphae) and 'salt and pepper' (spores)

4. Management[1]

- Offer analgesia. See Acute pain, p. 32
- Consult MO/NP if any of:
  - fever
  - cellulitis/redness extends outside the ear canal
  - immunocompromised, diabetes or recent radiotherapy - for oral antibiotics + ear drops
  - perforated eardrum possible or grommet(s) - for alternative ear drops eg ciprofloxacin[1,2]

Give ear drops[2-5]

- If bacterial infection likely give:
  - dexamethasone + framycetin + gramicidin (eg Otodex®, Sofradex®) OR
  - ciprofloxacin ± with hydrocortisone (MO/NP to order)[9]

- If fungal infection likely give:
  - flumetasone + clioquinol (eg Locacorten vioform®) OR
  - triamcinolone + neomycin + nystatin + gramicidin drops (eg Kenacomb Otic®, Otocomb Otic®)
- **If canal occluded due to swelling - use wick**:
  - insert wick into canal eg Merocel Ear Wick®, Pope Oto Wick®, or 1 cm strip of ribbon gauze
  - advise will be uncomfortable to put in, but will ensure drops get deep into the canal
  - once inserted, saturate wick with 5 ear drops (as above)
  - leave wick in place + continue drops at home from next day
- **Advise:**[1,2]
  - symptoms should improve after 2–3 days of treatment, with full resolution up to 2 weeks[4]
  - keep ear dry + for 2 weeks after resolved. Use cotton wool balls with Vaseline® over top while showering; avoid swimming

Ear drops advice - otitis externa[4,5]

- Get someone else to put drops in if possible
- Clean ear with Tissue spears, p. 530 first. Clean well, especially if fungal infection, as remaining spores can lead to recurrent infections
- Warm bottle of drops in palm for 5–10 minutes
- Lie with affected ear up. Put in drops and then gently press the tragus for 30 seconds. Stay lying with ear up for at least 3–5 minutes
- Stop using if develop ringing in ears, hearing loss, or difficulty with balance[4]

S4	**Dexamethasone + framycetin + gramicidin** (Otodex®, Sofradex®)		**Extended authority** ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	**Strength**	**Route**	**Dose**	**Duration**
Ear drops	Dexamethasone 0.05% framycetin 0.5% gramicidin 0.005%	Ear	3 drops into affected ear tds	5–7 days Use until a few days after symptoms cleared. Do not exceed 2 weeks
Management of associated emergency: Consult MO/NP [2,3,6]				

S4	**Flumetasone + clioquinol** (Locacorten vioform®)		**Extended authority** ATSIHP/IHW/IPAP/RIPRN	
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	**Strength**	**Route**	**Dose**	**Duration**
Ear drops	Flumetasone 0.02% clioquinol 1%	Ear	**Adult and child > 2 years** 3 drops into affected ear bd	5–7 days Use until a few days after symptoms cleared. Do not exceed 2 weeks
Management of associated emergency: Consult MO/NP [2,5,7]				

S4	Triamcinolone + neomycin + nystatin + gramicidin (Kenacomb Otic®, Otocomb Otic®)			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	**Strength**	**Route**	**Dose**	**Duration**
Ear drops	Triamcinolone 0.1% neomycin 0.25% nystatin 100,000 units/mL gramicidin 0.025%	Ear	3 drops into affected ear tds	3–7 days
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [2,8,9]				

5. Follow up

- **If wick inserted** advise to be reviewed in 2–3 days:[2]
  - remove wick. If canal still swollen, insert another wick and continue with drops
  - if canal not swollen (wick may have fallen out by itself), continue drops without wick
  - advise review again in 2 days. If no improvement, consult MO/NP
- **If no wick inserted** advise review in 5 days (or sooner if worried/worsening):
  - if no improvement consult MO/NP, who may change ear drops ± consider other causes
- If prone to otitis externa, advise to try to keep ear canal free of water. Acetic acid + isopropyl alcohol ear drops eg Aquaear® after water exposure may help to dry ears[4]

6. Referral/consultation

- As above

HMP Gastroenteritis/dehydration - child
Diarrhoea ± vomiting

Recommend[1-3]

- Rehydration is the most important part of management eg with oral rehydration solution (ORS)

Background[1-3]

- Most gastroenteritis is viral, self-limiting and resolves without specific treatment
- Antibiotics are of no benefit in most cases and may exacerbate diarrhoea
- Also see *Gastroenteritis - emergency management in children* https://www.childrens.health.qld.gov.au/qpec-statewide-guidelines/

Related topics

Giardiasis, p. 538

1. May present with[1]

- Sudden onset of diarrhoea ± vomiting, fever or abdominal pain/distension
- Lethargy or altered level of consciousness
- Irritability
- Dehydration

2. Immediate management

- Do vital signs
- Assess hydration. **Note:** if in doubt, manage as if dehydration falls into the more severe category[1]
- **If any signs of shock:**
  - contact MO/NP urgently
  - treat as per Shock, p. 62. Also consider Sepsis, p. 64

Hydration assessment

	Mild dehydration	Clinical dehydration 5–10% fluid loss	Shock › 10% fluid loss
Level of consciousness		may have altered responsiveness	⇣
Skin colour		unchanged	pale or mottled
Extremities		warm	cold
Eyes	No clinical signs but may be thirsty	sunken	sunken
Mucous membranes		dry	dry
HR		normal	⇡
RR		⇡	⇡
Peripheral pulses		normal	weak
Capillary refill		normal	› 2 seconds
Skin turgor		⇣	⇣
BP		normal	⇣

3. Clinical assessment[1-4]

Consider differential diagnoses[1]

- Look for signs of: UTI, meningitis, pneumonia, otitis media, appendicitis, intussusception, bowel obstruction

ALERT consider Button battery, p. 80 ingestion in all children with vomiting

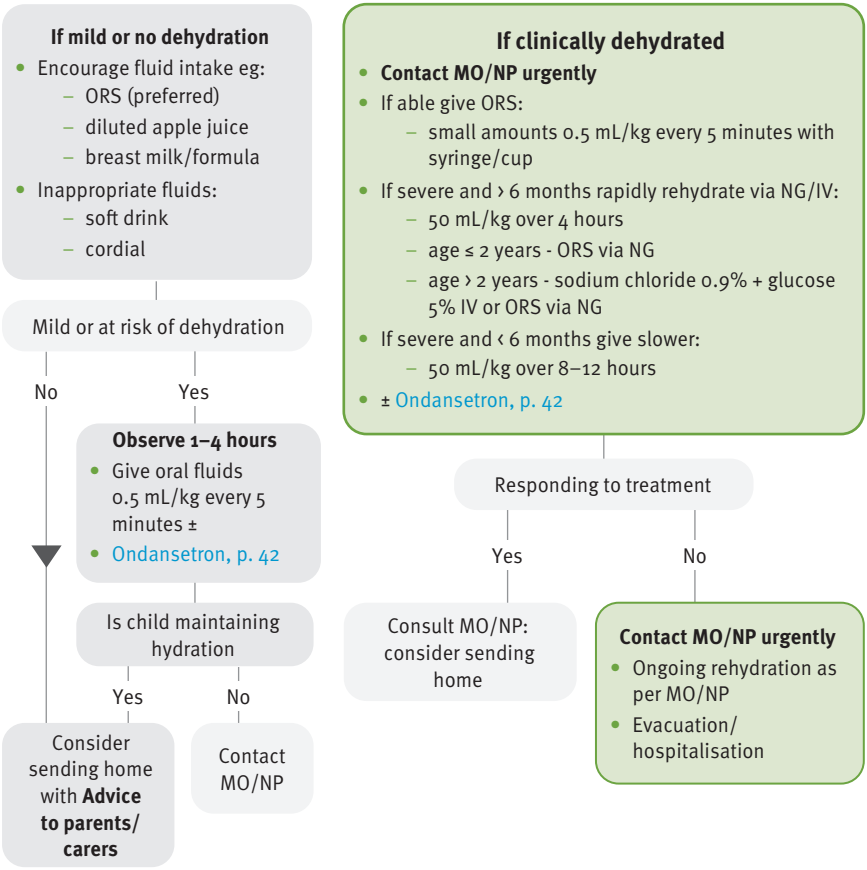
- Get history, including:
  - gastrointestinal symptoms:
    - date/time of onset, frequency, is there blood ± mucous in stools, bile stained or green vomit, location and severity of abdominal pain
    - times passed urine/number of wet nappies in last 24 hours
    - how many drinks/breastfeeds in last 24 hours
  - other symptoms:
    - fever, rash, headache
  - known illness in contacts
- Do physical examination, including:
  - weight - bare weight if ‹ 2 years
  - urinalysis - ketones, signs of UTI
  - BGL
  - check + palpate:
    - abdomen for distension, guarding, rigidity
- Do stool MCS + PCR if:
  - blood ± mucous in stool
  - immunocompromised
  - recent travel overseas
  - diarrhoea › 7 days
- Look for **Risk factors for dehydration** and **Red flags**

Risk factors for dehydration[1]	Red flags[1]
• ‹ 1 year, preterm and ‹ 6 months • Low birth weight, failure to thrive • › 5 diarrhoeal stools in 24 hours • Stopped breastfeeding during illness • Signs of malnutrition • Immunocompromised • Underlying chronic conditions	• Severe or localised abdominal pain • Abdominal distension • Isolated vomiting • Bilious (green) vomiting • Blood in stool or vomit • Child appears very unwell or is very drowsy • T › 39 or 38 if ‹ 3 months[5] • Headache • Rash • Persistent diarrhoea › 10 days

4. Management[1-4]

- Contact MO/NP if:
  - ‹ 3 months
  - risk factors for dehydration
  - red flags
- See **Hydration management** flowchart

Hydration management[1]



Advice to parents/carers[1]

- Wash your hands frequently
- Symptoms usually resolve within 1–2 days, stools can remain loose for 1–2 weeks
- Bring your child back if you are worried or if:
  - develops tummy pain, headache, rash, high fever
  - vomit turns green
  - you notice blood in stool or vomit
- Keep your child drinking fluids, like Gastrolyte®, breast milk or formula, watered down apple juice. Give small sips often using syringe, spoon or cup or icy poles. Avoid sugary drinks like soft drink and cordial
- Offer food if they want it and start gradually with plain pasta, rice or potato, dry toast or plain biscuits. Avoid fatty and sugary foods
- Do not give anti-diarrhoeal medicines to infants or children
- Keep your child away from others until no loose stools in a 24 hour period and they are well[6]

5. Follow up[1]

- Advise to be reviewed the following day or earlier if parent/carer is concerned
- Contact MO/NP if symptoms worsen or persist after 2–3 days, or diarrhoea persists › 10 days

6. Referral/consultation

- As above
- Notify Public Health Unit if ≥ 2 cases of diarrhoea ± vomiting in the same location[6] ①

HMP Giardiasis - adult/child

Background

- Ingestion of Giardia cysts from contaminated water or food is the most common route of transmission, but person-to-person transmission may occur[1]

1. May present with[1,2]

- Diarrhoea, flatulence
- Abdominal cramps, bloating, burping
- Nausea, vomiting
- Fatigue, weight loss
- Positive pathology for Giardia ± symptoms

2. Immediate management Not applicable

3. Clinical assessment[1,2]

- Ask about:
  - recent travel
  - diarrhoea - watery, mucus or blood, greasy
  - vomiting
  - fever, pain
  - similar illness in contacts
  - immunocompromised
  - water source eg tank water
- Do physical examination, including:
  - vital signs
  - weight - bare weight if ‹ 2 years. Assess against recent weights
  - Hydration assessment - adult, p. 200 or child, p. 535
  - palpate abdomen for tenderness, guarding
- Do a stool MCS + multiplex PCR if:
  - abdominal symptoms › 2 weeks eg pain, diarrhoea[3]

4. Management[3,4]

- Contact MO/NP if:
  - pregnant - treatment may vary[3]
  - severe symptoms eg mucus or bloody diarrhoea, pain, fever
  - dehydrated. For rehydration see Gastroenteritis - adult, p. 200 or Gastroenteritis - child, p. 535

- If no symptoms but positive pathology:
  - antibiotics are not required, unless patient handles food[3]
  - advise patient infection usually self-curing[1]
- If symptomatic give metronidazole
- Advise patient:
  - if they prepare or serve food, avoid handling food until they have not had any diarrhoea for 48 hours[5]
  - stay away from others until 24 hours after the last loose bowel motion and they are well[5]
  - wash hands frequently to prevent spreading

S4	Metronidazole			Extended authority ATSIHP/IHW/IPAP/RIPRN
ATSIHP, IHW, IPAP and RN must consult MO/NP				
RIPRN may proceed				
Form	**Strength**	**Route**	**Dose**	**Duration**
Tablet	200 mg 400 mg	Oral	**Adult** 2 g daily	3 days
Oral liquid	200 mg/5 mL		**Child › 1 month** 30 mg/kg (max. 2 g) daily	
Offer CMI: Avoid alcohol while taking and for 24 hours after finishing the course.Take tablet with food to reduce stomach upset. Take oral liquid 1 hour before food for better absorption. May cause nausea, anorexia, abdominal pain, vomiting, diarrhoea, metallic taste, dizziness or headache				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [6,7]				

5. Follow up[3]

- Advise to be reviewed if symptoms do not settle or concerned:
  - contact MO/NP who may consider reinfection, drug resistance, alternative diagnosis

6. Referral/consultation

- As above
- Notify Public Health Unit ✆ if:[5]
  - there are more than two cases with diarrhoea ± vomiting in the same location, or
  - a single case in a food handler

HMP Worms - adult/child

Recommend

- Routine deworming is NOT recommended[1]

1. May present with

- Poor growth, anaemia
- Abdominal distension, pain, nausea, diarrhoea
- Positive pathology results
- Visible worms in stool eg roundworm, threadworm

Threadworm (pinworm) - most common[1,2]

- Itchy bottom ± rash from scratching
- Tiny white worms seen around anus or in stool
- Redness and itching around vaginal area in girls
- Irritability

2. Immediate management

Not applicable

3. Clinical assessment

- Ask about:
  - immunocompromised[3]
  - recent travel
  - last treated for worms
- Do:
  - vital signs
  - weight - bare weight if ‹ 2 years. Assess against recent weights
  - offer to look for threadworms around anus
- If not already done:
  - capillary Hb - check normal values in Anaemia, p. 546
  - stool MCS + multiplex PCR

4. Management[3,4]

- Contact MO/NP:
  - ‹ 6 months of age
  - tapeworm - may order praziquantel
  - strongyloides - may order ivermectin
- If threadworm:
  - give albendazole OR mebendazole OR pyrantel single dose
  - treat household contacts at same time
  - if still symptoms or visible worms in stools after initial treatment, advise to repeat treatment
- If patient has worms on pathology treat as per drug box
- Reinfection of threadworm and whipworm is common. Advise on hygiene measures eg:[3]
  - shower/bath daily, frequent hand washing
  - keep finger nails short, avoid scratching bottom
  - wash bedding, towels and clothes in hot water where possible

S4	Albendazole	Extended authority ATSIHP/IHW/IPAP/RIPRN

ATSIHP, IHW, IPAP and RN must consult MO/NP

RIPRN may proceed

Form	Strength	Route	Dose	Duration
Tablet	200 mg 400 mg	Oral	**Adult and child › 10 kg** 400 mg **Child › 6 months and ‹ 10 kg** 200 mg	once **or** **If whipworm confirmed on pathology** daily for 3 days

Offer CMI: Take on an empty stomach. Tablets may be crushed, chewed or swallowed whole. May cause nausea, vomiting, diarrhoea, headache, dizziness, fever or abdominal pain

Pregnancy: Avoid during 1st trimester. Use contraception during and for 1 month after treatment. Seek advice for use beyond 1st trimester

Contraindication: Ocular cysticercosis (tapeworm infection of the eye)

Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,5]

S2	Mebendazole	Extended authority ATSIHP/IHW/IPAP

ATSIHP, IHW, IPAP and RIPRN may proceed

RN may administer; for supply see RN supplying, p. 11

Form	Strength	Route	Dose	Duration
Tablet	100 mg	Oral	**Adult and child › 6 months and › 10 kg** 100 mg **Child › 6 months and ‹ 10 kg** 50 mg	once **or** **If whipworm, hookworm or roundworm confirmed on pathology** bd for 3 days
Oral liquid	100 mg/5 mL			

Offer CMI: Tablets may be crushed, chewed or swallowed whole. May cause nausea, vomiting, diarrhoea, headache or abdominal pain

Pregnancy: Avoid during 1st trimester

Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,6]

S2	Pyrantel	Extended authority ATSIHP/IHW/IPAP

ATSIHP, IHW, IPAP and RIPRN may proceed

RN may administer; for supply see RN supplying, p. 11

Form	Strength	Route	Dose	Duration
Tablet	125 mg 250 mg	Oral	**Adult and child › 1 year** 10 mg/kg (max. 1 g)	once **or** **If hookworm confirmed on pathology** daily for 3 days **Note: not suitable for whipworm**

Offer CMI: Can cause nausea, vomiting, diarrhoea, abdominal cramps or headache. Tablets may be crushed and mixed with jam

Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,7]

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	**Adult and child › 15 kg** 200 microg/kg (rounded up to the nearest 3 mg)	once Repeat after 7–14 days
Offer CMI: Take with fatty food. May cause headache, fatigue, dizziness, abdominal pain, vomiting or diarrhoea. Resistance can occur after repeated use				
Pregnancy: Do not use. Safe in breastfeeding				
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 [3,8]				

5. Follow up

- If strongyloides treated with ivermectin - repeat stool MCS + PCR, serology and check for eosinophilia to ensure eradication as guided by MO/NP[8]
- If treatment repeated and symptoms continue, or visible worms in stools, contact MO/NP

6. Referral/consultation

- Consult MO/NP as above

Constipation - child

Background[1]

- The normal frequency of stools decreases with age from infancy until around 3 years when the average is 1 stool/day
- Also see *Constipation - emergency management in children* https://www.childrens.health.qld.gov.au/qpec-statewide-guidelines/

1. May present with[1]

- Hard or painful stools eg pellets, large
- Stools that are less regular than usual
- Passing small amounts of liquid stool in underwear
- Avoiding or holding off passing a stool
- Chronic abdominal pain may be only symptom

2. Immediate management Not applicable

3. Clinical assessment[1]

- Ask about:
  - what the child does when the family/carer thinks the child needs to poo
  - frequency and consistency of stools
  - disrupted routine eg toilet training, illness, travel, new sibling, starting day care/school

- Do:
  - vital signs
  - weight, bare weight if < 2 years. Assess against recent weights
  - palpate abdomen - check left lower quadrant for palpable masses - can indicate faecal impaction
  - check anus - position, fissures, bleeding, other abnormalities
  - **note:** digital rectal examination is not required

4. Management[1]

- If stools are infrequent but remain soft:
  - reassure parents/carer this is not constipation
  - some breastfed babies have bowel motions every 7–14 days. As long the stool is soft this is normal[2]
- If child has infrequent eg < 3 hard stools per week, for at least 2 weeks:
  - child is likely constipated
  - contact MO/NP who may consider:
    - laxative treatment
    - referral to paediatrician
  - if toilet training, hold off until stools are soft and regular
- If child anxious or fearful of passing stool, consider discussing with parents/carer:
  - positive reinforcement, avoid blaming the child
  - encourage child to sit on toilet after meals, reward even if no stool is passed

5. Follow up[1]

- If given laxatives advise to be reviewed:
  - in 3–7 days to check on progress, or
  - sooner if concerned or child is unwell

6. Referral/consultation

- Consider referral to the next child health nurse/MO/NP clinic

Pyloric stenosis - child

Background[1]

- Caused by a thickening of the pylorus (gastric outlet at the bottom of the stomach) causing obstruction and forceful vomiting
- Usually presents between 2–6 weeks of age

1. May present with[1]

- Vomiting, getting worse, projectile ± blood
- Always hungry
- Poor weight gain or weight loss
- Dehydration

2. Immediate management

Not applicable

3. Clinical assessment[1]

- Ask about:
  - vomiting - after feeds, any blood, eager to feed after
  - family history of pyloric stenosis
- Do:
  - vital signs
  - bare weight
  - Hydration assessment - child, p. 535
  - check abdomen for:
    - mass in right upper quadrant
    - wave like contractions (visible peristalsis) after a feed, see https://www.youtube.com/watch?v=JfGoVrSuV2Y

4. Management[1]

- Consult MO/NP who may advise:
  - IV fluids, bloods
  - evacuation/hospitalisation
  - nil by mouth, consider NG if vomiting continues after stopping feeds
- Monitor closely until evacuated

5. Follow up

- As per MO/NP instructions

6. Referral/consultation

- Consult MO/NP if suspected pyloric stenosis

Intussusception - child

Background

- A condition where one part of the bowel telescopes into the next part and may cause a blockage[1]
- Commonly occurs 2 months–2 years, but can occur at any age[2]

1. May present with[2]

- Intermittent pain or distress
- Lethargy
- Diarrhoea and vomiting
- Blood seen in stool

2. Immediate management[2]

- If signs of shock ↑HR, ↑RR, ↓BP, ↓LOC. See Shock, p. 62

3. Clinical assessment[2]

- Ask about:
  - pain - does it come and go
  - vomiting - any bile
  - stools - any bleeding, red currant jelly stools
  - pallor, lethargy - can be episodic and may look well between episodes
  - recent rotavirus vaccination
- Do:
  - vital signs
  - weight - bare weight if < 2 years
  - check abdomen for:
    - sausage shaped mass on right side
    - distension, tenderness, guarding
  - check stool/nappy for blood

4. Management[2]

- Consult MO/NP who may advise:
  - analgesia
  - evacuation/hospitalisation
  - nil by mouth, consider NGT if transferring by air
- Monitor closely until evacuated

5. Follow up

- As per MO/NP instructions

6. Referral/consultation

- Consult MO/NP if suspected intussusception

HMP Anaemia - child

Recommend

- IM injection of iron is NOT usually recommended - absorption is poor, skin may become discoloured + injection is very painful[1]

Background

- Prevent iron deficiency by starting iron-rich foods around 6 months of age[2]
- Mild iron deficiency in children impacts brain development[2]
- Some babies eg premature babies, may be on iron as treatment/prevention on discharge from hospital special care nursery which should be continued
- Infants born at term and normal birth weight usually have sufficient iron stores for 4–6 months[3]
- Aboriginal and Torres Strait Islander children are recommended to have routine Hb checks between 6–9 months, 18 months + girls 10–14 years. See the *Chronic conditions manual* https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm

1. May present with[4]

- Low Hb detected on routine health check:
  - 6 months–4 years ≤ 109 g/L
  - 5–11 years ≤ 114 g/L
  - 12–14 years ≤ 119 g/L
- ± symptoms - tiredness, lethargy, irritability, pallor, pale conjunctivae, pica (eating non-foods eg dirt)
- Poor growth, recurrent infections, worm infection

2. Immediate management

Not applicable

3. Clinical assessment[4]

- Ask about:
  - anaemia in pregnancy, maternal diabetes
  - IUGR, low birth weight, prematurity
  - gastrointestinal disorders or surgery
  - diet - vegetarian or vegan
  - in babies:
    - were iron rich solids introduced at 6 months or later
    - breastfeeding, formula, cows milk, was cows milk introduced < 12 months
- Do:
  - vital signs + capillary Hb - if not already done
  - weight + height:
    - if < 2 years - bare weight, length + head circumference
    - assess against recent measurements
  - check for heart murmur if skilled

4. Management[5]

- Contact MO/NP if < 6 months

Severe anaemia - Hb ≤ 80 g/L

- Consult MO/NP promptly, who will advise ongoing treatment eg evacuation for iron infusion

Mild–moderate anaemia[5]

- Hb:
  - 6 months–4 years ≤ 109 g/L
  - 5–11 years ≤ 114 g/L
  - 12–14 years ≤ 119 g/L
- Give iron supplements eg Ferro-Liquid® or Ferro-Grad® and treat for Worms, p. 540
- Recheck Hb in 1 month:
  - Hb should start to respond to treatment within a week, expect Hb to rise 20 g/L every 3–4 weeks[6]
  - if not improving refer to MO/NP - need to exclude other conditions
- Discuss diet and nutrition if contributing factor.[6] See the *Chronic conditions manual* https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm
  - **note**: dietary changes alone will not improve Hb

S2	Ferrous sulfate (Ferro-Liquid®, Ferro-Grad®)				Extended authority ATSIHP/IHW
ATSIHP and IHW must consult MO/NP					
RIPRN may proceed. RN may administer; for supply see RN supplying, p. 11					
Form	**Strength**	**Route**	**Dose**		**Duration**
Oral liquid	Ferrous sulfate 30 mg/mL	Oral	Daily **OR** twice weekly supervised		For at least 3 months then review by MO/NP
			Weight	**Mild–moderate**	**Severe**
			‹ 10 kg	0.5 mL/kg	1 mL/kg
Tablet	Ferrous sulfate 325 mg		10–19 kg	5 mL	10 mL
			20–29 kg	10 mL	20 mL
			30–39 kg	15 mL **OR** 1 tablet	30 mL **OR** 1 tablet
			› 40 kg	20 mL **OR** 1 tablet	40 mL **OR** 1 tablet
Offer CMI: **Overdose of iron can be fatal.** Keep out of reach of children. Take on empty stomach, better absorbed with orange juice. If causes upset stomach, take with food. May cause dark, tarry stools, diarrhoea or constipation. Tablets should be swallowed whole. Dilute Ferro-Liquid® with water, drink through a straw + follow each dose with plain water to prevent discolouration of teeth					
Management of associated emergency: Consult MO/NP. See Anaphylaxis, p. 82 3,7					

5. Follow up

- If severe, follow up as guided by MO/NP
- For other cases advise to be reviewed monthly to check Hb + adherence to iron supplements:
  - continue supplements for 3 months after Hb returned to normal to replenish stores[1]
- If not improved after 3 months, refer to MO/NP - should have FBC + iron studies to confirm diagnosis
- Provide support to families as needed. If unable to adhere to daily doses of iron:
  - give twice weekly oral iron under supervision

6. Referral/consultation

- As above + consider referral to dietitian, child health nurse, health worker

Urinary tract problems

HMP Urinary tract infection (UTI) - child

Background

- Diagnosing a UTI in young children can be challenging as symptoms are non-specific[1]
- Also see *Urinary tract infection - emergency management in children* https://www.childrens.health.qld.gov.au/chq/health-professionals/qld-paediatric-emergency-care/

1. May present with[1]

- Fever
- Unwell - looks sick, irritable
- Poor feeding, nausea, vomiting
- Poor weight gain
- Urinary symptoms - frequency, dysuria, haematuria, smelly urine
- Abdominal or loin pain
- Changes to continence in older child

2. Immediate management

- Do vital signs - note BP[1]
- Screen for Sepsis, p. 64

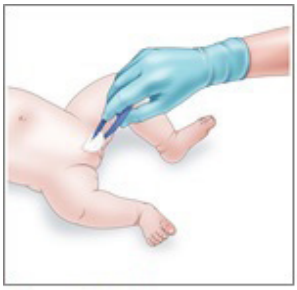
3. Clinical assessment[1]

- **Ask about:**
  - fever
  - pain - loin, suprapubic
  - previous UTI - when, treatment
  - difficulties passing urine where age appropriate eg dribbling, straining
  - underlying conditions eg urinary tract malformations
  - consider STI history where appropriate[1]
- **Do:**
  - weight - bare weight if < 2 years. Assess against recent weights
  - Hydration assessment - child, p. 535
  - palpate abdomen, check for:
    - palpable bladder
    - loin or suprapubic tenderness
- Get clean catch urine specimen/MSU:
  - clean genital area with saline soaked gauze, ask child to void
  - if child/baby unable to void on request, use **Quick-Wee** method to encourage
  - **note:** bag specimens are not recommended + cannot be used for UTI diagnosis[1]
- Do urinalysis. If results:
  - leucocytes AND nitrites - likely UTI
  - leucocytes OR nitrites - possible UTI
  - **note:** blood or protein is not a reliable marker of UTI[1] - may indicate other causes eg APSGN, p. 511

- Send clean catch urine/MSU for MCS if:
  - leucocytes OR nitrites present
  - < 3 months of age
- If considering gonorrhoea + chlamydia PCR urine testing in older symptomatic children:[1]
  - discuss with MO/NP
  - see Child protection, p. 551

Quick-Wee[1,3]

- Give the child/baby a breastfeed, formula, drink
- **Clean** genital area with saline soaked gauze
- Gently **rub** lower abdomen for a few minutes in a circular motion with a gauze soaked in cold water
- **Catch** urine in sterile container



Clean

Rub

Catch

4. Management[1]

- Consult MO/NP if:
  - child ≤ 3 months of age
  - possible UTI from dipstick
  - unable to get urine sample
- Further management in collaboration with MO/NP
- Offer analgesia. See Acute pain, p. 32

5. Follow up[1]

- Advise to be reviewed in 1–2 days
- Check urine MCS + contact MO/NP if treatment needs modifying

6. Referral/consultation

- As above

Bone and joint problems

HMP Acutely swollen/painful joint - child

Recommend[1,2]

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

Background

- Also see *Limp - emergency management in children* https://www.childrens.health.qld.gov.au/qpec-statewide-guidelines/

1. May present with[1,4-6]

- Hot, swollen, tender joint(s) ± fever, malaise and fatigue
- Painful hip
- Joint pain on movement
- ↓ mobility, limp, problems with weight bearing

2. Immediate management[2]

- Vital signs
- Screen for Sepsis, p. 64

3. Clinical assessment[2-6]

- Assess for **Red flags** - may require urgent further assessment ± evacuation

Red flags[1]

- Systemic symptoms eg T ≥ 38.5, malaise, weight loss, night sweats
- < 4 years of age
- Inability to weight bear or severe, localised joint pain
- Inflammation of 1 joint[2]
- Bony pain
- Possible unwitnessed trauma/non-accidental injury
- Overweight adolescent

- Get history, including:
  - pain - acute or gradual onset
  - ARF/RHD diagnosis or family history of[2]
  - recent injury/wound - can be minor[1,3]
  - recent joint surgery
  - other symptoms eg skin infections, sore throat, diarrhoea, fatigue, rash[3]
  - IV drug use[6]
- Urinalysis
- Examine joints:
  - swelling, tenderness, warmth and mobility
  - in younger children watch how they move, weight bear, crawl, walk[1]
  - bony point tenderness - may indicate acute osteomyelitis[1]

- Consider ARF, p. 515 - especially if pain seems out of proportion to the joint signs
- Check:[1]
  - for swollen lymph nodes
  - skin for bruising, recent sores
  - throat for redness

4. Management[2-7]

- **Always consider** septic arthritis, acute osteomyelitis and ARF, p. 515 as cause
- If any red flags contact MO/NP urgently
- **Always contact MO/NP for all acute swollen/painful joint presentations**, who may advise:
  - blood cultures, IV antibiotics
  - x-ray
  - evacuation/hospitalisation ± referral to orthopaedic specialist/paediatrician
- Offer analgesia. See Acute pain, p. 32

5. Follow up

- In consultation with MO/NP

6. Referral/consultation

- As above

Child protection

Child protection

Recommend

- If outside of Qld, refer to local policy and procedures

Background

- Also see *Child protection factsheets* (Qld Health intranet only) https://qheps.health.qld.gov.au/csu/factsheets

1. May present with[1]

- Direct or indirect discloses of abuse
- Injuries eg facial, neck bruising, fractures especially < 3 years of age
- Signs of neglect eg untreated physical problems, developmental delay
- Parental risk factors eg domestic and family violence, substance misuse, mental health concerns

2. Immediate management

- Assess and treat any injuries
- Contact MO/NP if:
  - traumatic injuries eg head, chest, abdominal
  - ongoing management as per MO/NP
- If suspected sexual assault, also see Sexual assault, p. 243

3. Clinical assessment[1]

- **Ask about:**
  - who is the carer/guardian
  - if injured:
    - what happened, where, when, who was there
    - does injury(s) fit with the explanation
  - previous injuries
  - medical problems eg non organic failure to thrive
  - is there a delay in seeking medical attention
  - social situation eg domestic and family violence
  - engagement of typical activities eg school attendance
- **Do** a comprehensive/detailed - assessment and documentation of any injuries, bruising, scarring however minor:
  - check the whole body and use diagrams if required +
  - vital signs
- Observe parent-child interactions, any:
  - cowering, hyper-vigilance, elevated startle responses
- Consider non-accidental injury if:
  - patterned skin injury, bruise, abrasion, burn you recognise eg hand, belt/buckle, cigarette
  - bruising to face, head, ears, bottom, arms
  - ‹ 12 months of age with any bruising or skin injury
  - ‹ 3 years of age with fracture(s)

4. Management[1]

- If non-accidental injury is suspected, contact MO/NP:
  - head injuries + fractures may not be obvious clinically + require further investigation eg CT scan/skeletal survey
- If you have formed a reasonable suspicion that:
  - a child has suffered, is suffering or likely to suffer significant harm **AND**
  - may not have a parent able and willing to protect them
    - immediately complete and submit a **Report of suspected child in need of protection** form, see https://secure.communities.qld.gov.au/CBIR/ChildSafety# **AND**
    - ring Child Safety Regional Intake Service or Child Safety After Hours Service Centre:
      - ✆ 1300 681 513 or 1800 811 810
    - document the date, time + name of the person you spoke to in the patient's medical record
    - forward a copy of the form to the Child Protection Liaison Officer (CPLO)
    - notify local clinic management as required
- If uncertain about reporting or referring, the *Child protection guide* will help you decide, see https://secure.communities.qld.gov.au/cpguide/engine.aspx
- Also see the *Chronic conditions manual*, includes contact details https://www.health.qld.gov.au/rrcsu/clinical-manuals/chronic-conditions-manual-ccm

5. Follow up

- As needed based on individual circumstances

6. Referral/consultation

- MO/NP as above
- Child Protection Advisor or CPLO where available/as needed