Pain, nausea and vomiting
Acute pain management

HMP Acute pain management

Recommend\(^1\)

- Effective management of pain requires:
  - assessment of the pain
  - appropriate analgesia
  - reassessment of the pain

Background\(^2\)

- This topic is intended for initial management of acute pain in rural and isolated areas or during inter-facility transfers
- Ongoing pain management should be a collaborative process between the patient, MO/NP and others involved in their care
- Pain is 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage'
- Pain is an individual, multifactorial experience influenced, among other things, by culture, previous pain experience, beliefs expectations, mood and ability to cope

Related topics

Safe use of paracetamol, page 786

1. May present with\(^1,2\)

- Self-report of acute pain
- Emotional responses to pain e.g. crying, screaming, anger, grimacing
- Could present as/be related to:
  - fracture or dislocation
  - soft tissue injury e.g. wound, abrasion, contusion
  - burns
  - back pain
  - herpes zoster
  - gout
  - abdominal pain (note: analgesia does not impact in the diagnostic process)
  - headache
  - toothache
  - earache
  - renal colic
  - cardiac pain
  - other cause

2. Immediate management

- If chest pain, immediately see Chest pain assessment, page 130
- If severe acute pain or pain due to an emergency obtain rapid patient history
3. Clinical assessment

- Always seek to identify the cause of the pain
- Ask about the pain:
  - **Site** - where is it
  - **Onset** - when did it start
    - sudden or gradual onset
    - result of trauma/activity/cold/stress
  - **Characteristics** e.g. sharp, throbbing, aching, burning, stabbing
  - **Radiation** - does it spread anywhere else
  - **Associated symptoms** e.g. nausea, vomiting, sweating, fever
  - **Timing** - duration, constant or intermittent
    - has anything changed the pain
    - ever had this pain before; how often does it occur
  - **Exacerbating or relieving factors:**
    - e.g. rest, medicines, eating, position changes, ice/splinting
  - **Severity** - at rest; on movement
    - assess using appropriate pain scale for patient
- Ask about:
  - any pain relief already given/taken prior to presentation e.g. by carer, self, or ambulance staff
    - when, what, dose, how effective
  - pain relief used in past - what worked/did not work; side effects
- Obtain past medical history, in particular:
  - current medicines; over the counter medicines
  - allergies
- Perform standard clinical observations (full ADDS/MEWT/CEWT score or other local Early Warning and Response Tools)

**Pain assessment scales**

- **Verbal rating scale**\(^1\)\(^2\) - adults/older children
  
  “On a scale of 1 to 10, with zero being no pain at all and 10 being the worst pain you could imagine, where would you rate the pain you are experiencing right now”

- **Verbal analogue scale**\(^2\) - adults/older children
  - ask the patient to indicate a position along the line indicating their pain level
• **FLACC behavioural pain assessment scale**[^2-3] - 2 months-7 years
  - also use if unable to verbally communicate
  - observe behaviour for at least 2-5 minutes:
    - observe legs and body uncovered
    - reposition patient or observe activity; assess body for tenseness and tone
    - initiate consoling interventions if needed
  - calculate score:
    - 0 = relaxed and comfortable
    - 1-3 = mild discomfort
    - 4-6 = moderate pain
    - 7-10 = severe discomfort/pain

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Face</strong></td>
<td>No particular expression or smile</td>
<td>Occasional grimace or frown, withdrawn, disinterested</td>
<td>Frequent to constant quivering chin, clenched jaw</td>
</tr>
<tr>
<td><strong>Legs</strong></td>
<td>Normal position or relaxed</td>
<td>Uneasy, restless, tense</td>
<td>Kicking or legs drawn up</td>
</tr>
<tr>
<td><strong>Activity</strong></td>
<td>Lying quietly, normal position, moves easily</td>
<td>Squirming, shifting, back and forth, tense</td>
<td>Arched, rigid or jerking</td>
</tr>
<tr>
<td><strong>Cry</strong></td>
<td>No cry (awake or asleep)</td>
<td>Moans or whimpers, occasional complaint</td>
<td>Crying steadily, screams, sobs, frequent complaints</td>
</tr>
<tr>
<td><strong>Consolability</strong></td>
<td>Content, relaxed</td>
<td>Reassured by touching, hugging or being talked to, distractible</td>
<td>Difficult to console or comfort</td>
</tr>
</tbody>
</table>

• **FACES pain scale revised (FPS-R)**[^2-4] - 4-12 years
  - clinician to say 'hurt' or 'pain' (language child understands)
  - do not use words like 'happy' or 'sad'
  - clinician to score the chosen face

These faces show how much something can hurt.
This face [point to left-most face] shows no pain. The faces show more and more pain [point to each from left to right] up to this one [point to right-most face]. It shows very much pain. Point to the face that shows how much you hurt [right now]
4. Management

- If severe pain, consult MO/NP as soon as able:
  - evacuation/hospitalisation will likely be required
- Consult MO/NP if:
  - child with severe pain (for analgesia advice)
  - pregnant woman or woman in labour if clinician is not a midwife
  - analgesia is not effective
  - unable to identify the source of the pain
  - recurrence of pre-existing condition
  - clinician has suspicion of opioid seeking behaviour
- Select analgesia based on clinical assessment/judgement, with consideration of:²,⁵
  - age
  - medicine(s) that may have already been given prior to presentation e.g. paracetamol
  - allergies
  - severity of pain
  - current opioid use (if any)
  - likely cause of pain
- Some causes may require alternative treatment/considerations:
  - chest pain. See Chest pain assessment, page 130
  - head injury - opioids should only be given after consultation with an emergency physician or neurosurgeon.⁶ Consult MO/NP. See Head injuries, page 175
  - headache - always consider severe causes.² See Acute and chronic headache, page 336
  - renal colic - consider giving ketorolac trometamol. See Renal colic, page 254
  - pregnant woman in labour. See Labour 1st stage, page 548
  - bites and stings - hot water immersion may be effective. See Toxinology (bites and stings), page 292
  - eyes - topical oxybuprocaine eye drops may be indicated. See Red or painful eye, page 362
  - administration of benzathine benzylpenicillin (Bicillin LA®) and procaine benzylpenicillin (procaine penicillin) injection. See Administration tips for benzathine benzylpenicillin, page 787
- Use a stepwise approach to acute pain management:⁷
  - start with doses towards lower end of range or non pharmacological options
  - titrate up depending on patient’s response

### Non-pharmacological options²

- Ice
- Elevation and splinting of injuries
- Repositioning
- Reassurance - explanations of cause of pain and expected outcome (to relieve anxiety)
- Distraction, imagery
- In young children: distraction, positioning, sucrose and cold application may be helpful
- Massage, heat pack
• Use oral route wherever possible for mild to moderate pain

• IV is preferred for severe pain:
  – insert IV cannula
  – ensure resuscitation equipment available
  – titrate dose against patient response and sedation score

• If obtaining IV access will unreasonably delay analgesia and care:
  – consider subcut or IM routes
  – subcut is as effective as IM and has better patient acceptance
  – be aware absorption may be impaired in conditions of poor perfusion e.g. hypovolaemia, shock, hypothermia or immobility leading to inadequate pain relief
  – if given subcut, monitor for at least 2 hours due to delayed absorption/adverse effects

Step wise approach to acute pain management

<table>
<thead>
<tr>
<th>Severity</th>
<th>Analgesia (if not allergic)</th>
<th>Practice points</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-3</strong></td>
<td><strong>Step 1</strong></td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>Non-pharmacological options AND/OR Paracetamol</td>
<td>• The paracetamol content of all medicines must be considered</td>
</tr>
<tr>
<td><strong>4-6</strong></td>
<td><strong>Step 2</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Moderate | As for step 1 AND/OR Ibuprofen AND/OR Oxycodone (adults only) | • Combination of oral paracetamol and ibuprofen is generally more effective than the use of either alone
|          |                           | • Consider oxycodone only if pain is not adequately relieved by paracetamol and/or ibuprofen |
| **7-10** |   **Step 3**              |     |     |
| Severe   | As for Step 2 AND/OR Increase dose of oral opioid (adults only) OR Morphine (adults only) OR Fentanyl (adults only) | • Carefully monitor the sedation score of all patients receiving IV opioids
|          |                           | • Do not give if sedation score ≥ 2
|          |                           | • Preferably titrate via the IV route
|          |                           | • Note: analgesia will not interfere with diagnostic processes in acute abdominal pain and should still be given
|          |                           | • Intranasal fentanyl is effective for children with severe pain - must be on MO/NP order |

**Short term options**

| Acute trauma e.g. while transferring in ambulance, quick procedures | Methoxyflurane (Penthrox®) |
| Acute trauma or other quick procedures < 10 minutes e.g. laceration repair, administration of IM penicillin, IV cannulation | Nitrous oxide (Entonox®) |
• Monitor effect of analgesia:\(^1\,^2\)
  – monitor sedation score closely after giving morphine or fentanyl (most effective way of detecting opioid induced respiratory depression)
  – regularly assess effect of analgesia using pain scale:
    – 30-60 minutely mild/moderate pain
    – 5-15 minutely if severe pain
• Continue to monitor standard clinical observations as appropriate
• Nausea and vomiting is a frequent adverse effect of opioid analgesia. Consider antiemetic if indicated. See Nausea and vomiting, page 48

**Sedation score\(^8\)**

• Patient must be woken to assess sedation

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>• Awake and alert</td>
<td></td>
</tr>
</tbody>
</table>
| 1     | • Slightly drowsy or asleep but easy to wake **AND**
  • Stays awake for ≥ 10 seconds, able to answer a complete question | **Acceptable**
  • No action needed
  • May increase opioid dose if needed
  • Recheck sedation score prior to giving further opioid analgesia |
| 2     | • Frequently drowsy, rousable
  • Drifts off to sleep during conversation
  • Unable to stay awake ≥ 10 seconds | **Unacceptable**
  • Stay with patient
  • Do not give further opioids
  • Monitor:
    – respiratory status (rate, depth, regularity) +
    – sedation level closely
    – until sedation level is stable at < 2 and respiratory status is satisfactory
  • Give O\(_2\) to maintain SpO\(_2\) ≥ 94%
  • Contact MO/NP |
| 3     | • Difficult to rouse or un-rousable
  • Sleepy/drowsy and minimal or no response to verbal or physical stimulation | **Unacceptable**
  • Stay with patient, call for help
  • Give naloxone
  • Contact MO/NP urgently
  • Give O\(_2\) to maintain SpO\(_2\) ≥ 94%
  • Monitor (minimum 5 minutely)
    – respiratory status (rate, depth, regularity) +
    – sedation level
    – until sedation level stable at < 2 and respiratory status is satisfactory
  • Initiate resuscitation if needed. See DRS ABCD resuscitation/the collapsed patient, page 54 |

Pasero Opioid-Induced Sedation Scale (POSS)\(^5\) modified to align with Queensland Government Early Warning and Response tools
Schedule 2

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tablet</td>
<td>500 mg</td>
<td>Oral</td>
<td>Adult and child ≥ 12 years 1-2 tablets</td>
<td>stat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>to a max. 8 tabs/day (max. 4 g in 24hrs)</td>
<td>Then 4-6 hourly as required for 48 hours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oral</td>
<td>Child &gt; 1 month to &lt; 12 years 15 mg/kg/dose to a max. of 1 g/dose</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(max of 60 mg/kg up to 4 g in 24 hours)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Round down to the nearest measurable dose</td>
<td></td>
</tr>
<tr>
<td>Oral liquid</td>
<td>120 mg/5 mL</td>
<td>Oral</td>
<td>Adult and child ≥ 12 years</td>
<td>stat</td>
</tr>
<tr>
<td></td>
<td>100 mg/mL</td>
<td></td>
<td>500 mg-1 g</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PR</td>
<td>Child &gt; 1 month to &lt; 12 years 15 mg/kg/dose to a max. 1 g/dose</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Round down to nearest suppository strength</td>
<td>Further doses on MO/NP orders</td>
</tr>
<tr>
<td></td>
<td>125 mg</td>
<td>PR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>250 mg</td>
<td>PR</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>500 mg</td>
<td>PR</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Provide Consumer Medicine Information: Too much paracetamol can cause liver damage. Consider paracetamol content of other medicines being taken. If further pain relief is required after 48 hours return to the clinic for re-assessment.

Note: Clinicians should be aware risk factors of paracetamol toxicity before giving. See Safe use of paracetamol, page 786. Rectal absorption can be erratic and delayed: oral administration preferred. Infants and children tolerate low grade fever e.g. < 38-38.5°C well, and often respond to fluids and comfort and may not need paracetamol; there is no evidence that paracetamol prevents febrile seizures.

Management of associated emergency: Consult MO/NP. Recognise and treat suspected paracetamol toxicity without delay. Contact Poisons Information Centre 131 126. See Paracetamol, page 283.
## Acute Pain Management

**Schedule**

ATSIHP, IHW, IPAP, MID and RIPRN may proceed

RN may administer; for supply see [Authority to administer and supply medicines, page 9](#).

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tablet</td>
<td>200 mg</td>
<td>Oral</td>
<td>Adult and child ≥ 12 years 200-400 mg</td>
<td>stat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Child ≥ 3 months</strong> 5 - 10 mg/kid/kg/dose to a max. of 400 mg/dose</td>
<td>Then 6-8 hourly as required</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Round <strong>down</strong> to the nearest measurable dose</td>
<td>May supply 48 hours of tablets or one bottle of liquid</td>
</tr>
<tr>
<td>Oral liquid</td>
<td>20 mg/mL</td>
<td>Oral</td>
<td>Provided Consumer Medicine Information: Do not take if dehydrated e.g. due to vomiting or diarrhoea (particularly children or elderly people). Take with a glass of water. If upsets stomach take with food. May cause nausea, indigestion, GI bleeding, diarrhoea, headache, dizziness, fluid retention and hypertension</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Note:</strong> If renal impairment, those taking diuretics, ACEIs or ARBs seek MO/NP advice. Use with caution in patients with asthma, cardiovascular disease or increased cardiovascular risk and patients taking lithium and anticoagulants</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Contraindication:</strong> Severe or immediate allergic reaction to ibuprofen/NSAIDs, dehydration, active peptic ulcer disease or GI bleeding, severe renal failure, severe heart failure, severe liver failure and coagulation disorders</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Use in pregnancy:</strong> Seek specialist advice for use in the second half of pregnancy; do not use during the last few days before expected birth. May increase rate of miscarriage</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Management of associated emergency:</strong> Consult MO/NP. See Anaphylaxis, page 102</td>
<td></td>
</tr>
</tbody>
</table>
**Schedule** | 8 | **Oxycodone (Endone®)** | **Extended authority**  
| | | |  
| ATSIHP, IHW and RN must consult MO/NP  
| RIPRN may proceed  

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
</table>
| Tablet (conventional release) | 5 mg | Oral | **Adult only**  
5 mg | stat  
Repeat after 4 hours if needed.  
Further doses on MO/NP order |

Provide Consumer Medicine Information: May cause nausea, vomiting, itch, drowsiness, dizziness, headache, low blood pressure when moving to standing, indigestion, dry mouth

**Note:** If renal or hepatic impairment seek MO/NP advice. Monitor sedation score and respiratory rate

**Pregnancy:** Contraindicated

**Contraindications:** Hypersensitivity to opioids, acute or severe bronchial asthma or other obstructive airways disease, biliary colic, GIT obstruction, concurrent use with MAO inhibitors, head injuries, raised ICP, respiratory depression, severe renal or hepatic impairment, acute alcoholism, delirium tremens

**Management of associated emergency:** Consult MO/NP. See *Anaphylaxis, page 102* Give naloxone to reverse opioid-related sedation. After naloxone pain will return
## Morphine

**Schedule 8**

<table>
<thead>
<tr>
<th>ATSIHP, IHW and RN must consult MO/NP</th>
</tr>
</thead>
</table>

RIPRN may proceed EXCEPT for pregnant women

MID may proceed for intrapartum use only: IM/subcut routes only

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection</td>
<td>10 mg/mL</td>
<td>IM/Subcut</td>
<td><strong>Adult only</strong>&lt;br&gt;Age (years)</td>
<td>mg</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&lt; 39</td>
<td>7.5-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>40-59</td>
<td>5-10</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>60-69</td>
<td>2.5-7.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>70-85</td>
<td>2.5-5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; 85</td>
<td>2-3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><strong>Start at lower end of dose range and titrate according to response and sedation score</strong></td>
<td></td>
</tr>
</tbody>
</table>

Further doses on MO/NP order

<table>
<thead>
<tr>
<th>IV</th>
<th>Dilute with 9 mL water for injections to make a concentration of 1 mg/mL</th>
<th><strong>Adult only</strong>&lt;br&gt;0.5-2 mg increments to a max. of 10 mg</th>
<th>stat&lt;br&gt;Inject slowly over 4-5 minutes&lt;br&gt;Repeat every 3-5 minutes if needed (based on response and sedation score) to a max. of 10 mg&lt;br&gt;Further doses on MO/NP order</th>
</tr>
</thead>
</table>

**Provide Consumer Medicine Information:** May cause nausea, vomiting, itch, drowsiness, dizziness, headache, low blood pressure when moving to standing, dry mouth, sweating, dysphoria.

**Note:** Monitor sedation score and respiratory rate. Use with caution in > 70 years and significant renal or liver disease (reduce dose). Fentanyl is more appropriate.

**Contraindication:** Hypersensitivity to morphine or other opioids, acute or severe bronchial asthma or other obstructive airways disease, biliary colic, GIT obstruction, concurrent use with MAO inhibitors, head injuries, raised ICP.

**Management of associated emergency:** Consult MO/NP. See Anaphylaxis, page 102. Give naloxone to reverse opioid-related sedation. After naloxone pain will return.
ATSIHP, IHW and RN must consult MO/NP
RIPRN may proceed

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection</td>
<td>100 microgram/2 mL</td>
<td>Subcut</td>
<td>Adult only</td>
<td>stat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Age (years)</td>
<td>microgram</td>
</tr>
<tr>
<td>Injection</td>
<td></td>
<td>IV</td>
<td>Use undiluted or add sodium chloride 0.9% to facilitate slow injection</td>
<td>Adult only</td>
</tr>
<tr>
<td>Injection</td>
<td></td>
<td>IV</td>
<td>10-20 microgram increments to a max. of 100 microgram</td>
<td>stat Inject slowly over 3-5 minutes</td>
</tr>
<tr>
<td>Injection</td>
<td></td>
<td>IV</td>
<td></td>
<td>Repeat every 5-10 minutes if needed (based on response and sedation score) to a max. of 100 microgram</td>
</tr>
</tbody>
</table>

**Provide Consumer Medicine Information:** May cause rash, itch, erythema, bradycardia, drowsiness, dizziness, headache, low blood pressure when moving to standing, indigestion and dry mouth. May have a lower incidence of nausea and vomiting than other opioids

**Note:** Monitor sedation score and respiratory rate. Use with caution in > 70 years

**Contraindication:** Hypersensitivity to fentanyl or other opioids, acute or severe bronchial asthma or other obstructive airways disease, biliary colic, GIT obstruction, concurrent use with MAO inhibitors, head injuries and raised ICP

**Management of associated emergency:** Consult MO/NP. See Anaphylaxis, page 102 Give naloxone to reverse opioid-related sedation. After naloxone pain will return 5,6,7,15,16
### Methoxyflurane

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Methoxyflurane</th>
<th>Extended authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Methoxyflurane</td>
<td>ATSIHP/IHW/RIPRN</td>
</tr>
</tbody>
</table>

ATSIHP, IHW and RN must consult MO/NP

RIPRN may proceed

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inhalation solution</td>
<td>99.9% in 1.5 mL</td>
<td>Inhalation</td>
<td>Adult and child ≥ 6 years</td>
<td>3 mL; stat; May be repeated after 20 minutes to a maximum of 6 mL in one day</td>
</tr>
<tr>
<td></td>
<td>99.9% in 3 mL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Provide Consumer Medicine Information:** Pain relief after 6-8 breaths and continues for several minutes after use. May cause dizziness, drowsiness, headache, shivering, nausea and vomiting. Can occasionally produce loss of consciousness, hypotension

**Note:** Patient must self-administer via inhalation device under direct observation - children should not be assisted by parents or others. Only use in haemodynamically stable conscious patients. Use with caution in liver disease, and people affected by alcohol or drugs. Staff should limit exposure to patient exhaled methoxyflurane; use the carbon scavenger unit provided in confined areas

**Contraindications:** Severe or immediate allergic reaction to inhaled anaesthetics, renal impairment, respiratory depression, head injury, loss of consciousness, history of malignant hyperthermia. Do not use on consecutive days. Do not exceed 15 mL in one week

**Management of associated emergency:** Consult MO/NP. See Anaphylaxis, page 102

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### Nitrous oxide + oxygen (Entonox®)

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Nitrous oxide + oxygen (Entonox®)</th>
<th>Extended authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Nitrous oxide + oxygen (Entonox®)</td>
<td>ATSIHP/IHW</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premix gas (clear)</td>
<td>nitrous oxide 50%</td>
<td>Inhalation</td>
<td>Adult and child self administered as needed</td>
<td>short term use only</td>
</tr>
<tr>
<td></td>
<td>+ oxygen 50%</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Provide Consumer Medicine Information:** Patient must self-administer i.e. hold the mouthpiece or mask (not clinician or parent). May cause nausea, vomiting, dizziness, drowsiness or shivering

**Note:** Monitor sedation score and respiratory rate. Use with caution if vitamin B12 deficiency or if opioid has been administered. Debilitated patients more sensitive to adverse and anaesthetic effects: monitor closely

**Contraindication:** Air containing cavities e.g. pneumothorax, obstruction of middle ear or sinus cavities, recent vitreoretinal surgery, pneumocephalus, bowel obstruction, gas embolism, increased intracranial pressure, muscular dystrophies

**Management of associated emergency:** Consult MO/NP. Give oxygen if overdose. See Oxygen delivery, page 64
ATSIHP and IHW may proceed for one dose only. Must then consult MO/NP

RIPRN and RN may proceed

<table>
<thead>
<tr>
<th>Form</th>
<th>Strength</th>
<th>Route of administration</th>
<th>Recommended dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injection</td>
<td>400 microgram/mL</td>
<td>IV/IM (IV preferred)</td>
<td>Adult 400 microgram</td>
<td>stat Can be repeated at intervals of 2-3 mins to a max. of 2 mg</td>
</tr>
</tbody>
</table>

Provide Consumer Medicine Information:

Note: Use with caution in opioid dependance: may have an acute withdrawal syndrome e.g. anxiety, agitation, tachycardia, confusion, or rarely more severe effects e.g. seizures, pulmonary oedema or arrhythmias. There should be an improvement within 1 minute. Reconsider diagnosis if no response after a total of 10 mg has been given. Opioids have a longer duration of action than naloxone and respiratory depression may return as the naloxone wears off. Continued observation and monitoring of respiratory function is required.

Use in pregnancy: Do not use in opioid dependent women; risk of withdrawal in fetus

Management of associated emergency: Consult MO/NP. See Anaphylaxis, page 102

5. Follow up
- Patients who receive parenteral opioid analgesia will likely require transfer to hospital for further management

6. Referral /consultation
- Consult MO/NP:
  - if further analgesia is required and maximum dose has been administered
  - for anyone with severe pain, when able
  - for all children with severe pain
  - cause of pain is uncertain
Nausea and vomiting

HMP Nausea and vomiting

Recommend
- Always consider life threatening causes of vomiting including: bowel obstruction, mesenteric ischemia, acute pancreatitis and myocardial infarction

Background
- This topic is intended for initial management of nausea and/or vomiting in rural and isolated areas or during inter-facility transfers
- In the absence of acute abdominal pain, significant headache, or recent initiation of certain medicines, acute nausea and vomiting is usually the result of self-limited gastrointestinal infections
- In acute nausea and vomiting a cause is often able to be identified
- One medicine is no more superior to another in the treatment of acute nausea and vomiting

Related topics
Acute gastroenteritis/dehydration - adult, page 243
Acute gastroenteritis/dehydration - child, page 730
Differential diagnosis - child, page 673
Pyloric stenosis, page 746

1. May present with
- Nausea
- Vomiting
- Requires prophylactic antiemetic prior to aeromedical transfer
- Antiemetic indicated in another HMP within the PCCM

2. Immediate management
- If associated with chest pain. See Acute coronary syndromes, page 135

3. Clinical assessment
- Always seek to identify the cause of the nausea/vomiting
- Obtain complete patient history
- Include in history taking:
  - frequency of vomiting
  - timing of vomiting in relation to meals
  - current gastrointestinal symptoms in family members or close contacts
  - what does the vomitus look like - any blood/coffee grounds, bile, undigested food
  - food eaten in the preceding 24 hours - could it be food poisoning
  - pregnancy
  - recent weight loss
  - recent trauma or head injury
  - exposure to toxins/poisons/bites/stings
  - recent alcohol/drug intake. See Acute alcohol intoxication, page 487
  - recent travel
Ask about other symptoms in particular:
- abdominal pain, distension or tenderness
- chest pain
- headache
- heartburn
- vertigo or dizziness
- last bowel motion; diarrhoea
- related to motion/travel
- fever
- neck stiffness
- confusion
- dysuria or frequency of urine

Obtain past history including:
- allergies
- current medicines; over the counter medicines; previous antiemetics
- recent initiation of a new medicine
- diabetes
- abdominal surgery

Perform standard clinical observations (full ADDS/MEWT/CEWT score or other local Early Warning and Response Tools)

Perform physical examination:
- abdominal examination. See Acute abdominal pain, page 238
- plus as determined from history taking
- perform point of care testing for pregnancy for women of reproductive age
- BGL if cause unknown or history of diabetes:
  - consider hypo/hyperglycaemia as cause

Assess hydration. See:
- Acute gastroenteritis/dehydration - adult, page 243
- Acute gastroenteritis/dehydration - child, page 730

Warning signs in children vomiting that may indicate a serious cause
- Prolonged vomiting: > 12 hours in neonate; > 24 hours in child
- Lethargy
- Significant weight loss
- Marked abdominal distension and tenderness
- Rectal bleeding
- Vomiting blood/bile
- Projectile vomiting in an infant 3-6 weeks of age. See Pyloric stenosis, page 746
- Bulging fontanelle in neonate or young infant
- Headache
- Lack of nausea
- Alerted consciousness, seizures, focal abnormalities
- History of head trauma
4. Management

- If related to chest pain. See Acute coronary syndromes, page 135
- Urgently contact MO/NP if nausea/vomiting is related to:
  - severe abdominal pain or distension  
    - note: relief of abdominal pain with vomiting suggests bowel obstruction  
  - severe acute onset headache  
  - head injury  
  - severe dehydration/fluid depletion  
  - child with warning signs
- Treat cause if known: be guided by relevant HMP
- If related to:
  - pregnancy - seek advice from Midwife or MO/NP - avoid antiemetic if possible
  - probable gastroenteritis. See:
    - Acute gastroenteritis/dehydration - adult, page 243  
    - Acute gastroenteritis/dehydration - child, page 730
- Contact MO/NP if:
  - child/infant  
  - no obvious cause/unsure of cause  
  - dehydrated/unable to tolerate fluids  
  - looks sick  
  - suspected poisoning  
  - diabetic  
  - does not respond to antiemetic  
  - unintended weight loss  
  - re-presents to facility
- Offer antiemetic as needed for:
  - initial symptomatic relief of nausea and vomiting  
  - nausea/vomiting related to opioids given as analgesia  
  - aeromedical retrieval prophylaxis  
  - an adjunct for acute gastroenteritis in children if unable to tolerate oral fluids. See Acute gastroenteritis/dehydration - child, page 730  
  - an indication from within another HMP in the PCCM
- Monitor effect of antiemetic
- Be guided by MO/NP for continued management as relevant
### Antiemetic selection

<table>
<thead>
<tr>
<th>Medicine</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ondansetron</strong></td>
<td>• Nausea and vomiting related to acute gastroenteritis in children</td>
</tr>
<tr>
<td></td>
<td>• General nausea and vomiting in adults is 'off label' use</td>
</tr>
<tr>
<td></td>
<td>• 2nd line therapy for hyperemesis gravidarum (on MO order)</td>
</tr>
<tr>
<td><strong>Metoclopramide</strong></td>
<td>• General use</td>
</tr>
<tr>
<td></td>
<td>• Particularly useful if related to migraine</td>
</tr>
<tr>
<td></td>
<td>• Oral, IM or IV</td>
</tr>
<tr>
<td></td>
<td>• Avoid use in patients &lt; 20 years of age</td>
</tr>
<tr>
<td></td>
<td>• Avoid if stimulation of the gastrointestinal tract is dangerous</td>
</tr>
<tr>
<td></td>
<td>e.g. suspected bowel obstruction or perforation</td>
</tr>
<tr>
<td></td>
<td>• Can rarely cause extrapyramidal adverse effects (dystonic reactions)</td>
</tr>
</tbody>
</table>

### Schedule

<table>
<thead>
<tr>
<th>Schedule</th>
<th>Ondansetron</th>
<th>Extended authority</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td></td>
<td>ATSIHP/IHW/RIPRN</td>
</tr>
</tbody>
</table>

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

RIPRN may proceed for child only - must consult MO/NP for adult

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>Oral disintegrating tablet (ODT) / Wafer</td>
<td>4 mg</td>
<td>Oral</td>
<td>Adult 4-8 mg</td>
<td>stat</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Child &gt; 6 months - 16 years Oral 8-15 kg - 2 mg 15-30 kg - 4 mg &gt; 30 kg - 8 mg</td>
<td>Further doses on MO/NP order</td>
</tr>
<tr>
<td>Injection</td>
<td>4 mg/2 mL</td>
<td>IV</td>
<td>IV 0.15 mg/kg to a max. of 8 mg</td>
<td>Give IV dose slowly over 5 minutes (or 15 minutes if &gt; 75 years)</td>
</tr>
</tbody>
</table>

**Provide Consumer Medicine Information:** Place ODT place on top of the tongue to dissolve, then swallow. May cause constipation, headache, dizziness

**Note:** Use for non specific nausea and vomiting is off-label. When used off-label, clinicians should ensure documentation and evaluation is undertaken as per CATAG guiding principles for the quality use of off-label medicines. See [www.catag.org.au](http://www.catag.org.au)

**Seek MO/NP advice if:** hepatic impairment; phenylketonuria or prolonged QT interval or risk factors for prolonged QT interval

**Management of associated emergency:** Consult MO/NP. See [Anaphylaxis, page 102](#)
5. Follow up  
- As required depending on cause of nausea/vomiting

6. Referral/consultation  
- Contact MO/NP as indicated above