



Clinical Procedures and Guidelines

Pocket edition

2019 - 2022



St John
Here for Life

Introduction

This pocket edition of the Clinical Procedures and Guidelines (CPGs) is a quick reference summary of the comprehensive edition and must be read in conjunction with it. Not all sections contained in the comprehensive edition are in the pocket edition, but for ease of reference between the two documents the associated number for each section is the same.

These CPGs are for the use of St John personnel with current authority to practise, when providing clinical care to patients on behalf of St John. The CPGs have been developed by the National Ambulance Sector Clinical Working Group and are issued to individual clinical personnel by the Medical Director for St John.

These CPGs expire in February 2022 at which time they will be formally updated and reissued. They remain the intellectual property of the National Ambulance Sector Clinical Working Group and may be recalled or updated at any time. Any persons other than St John personnel using these CPGs do so at their own risk. Neither St John nor the National Ambulance Sector Clinical Working Group will be responsible for any loss, damage or injury suffered by any person as a result of, or arising out of, the use of these CPGs by persons other than authorised St John personnel.



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Clinical Procedures and Guidelines - Pocket Edition

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Instructions for use

Unless otherwise specified, all drug doses and fluid volumes described in the flow charts are for adults and children whose weight has been rounded to greater than or equal to 50 kg. See the paediatric drug dose tables (**pg79**) if the patient is a child whose weight has been rounded to 40 kg or less.

The flow charts contain coloured symbols and words that represent specific actions or information.

✓	Indication
✗	Contraindication
▬	Caution
►	Perform an action
?	Consider performing an action
prn	The action may be repeated as required
✓ <i>Text</i>	Used when referencing a checklist

Contraindications and cautions

Cautions

Coloured banners are near or within the flow chart if the drug described has contraindications or cautions, noting that only those specifically relevant to that section are listed. If the drug has both contraindications and cautions, these are listed under a red banner with the appropriate symbols. If the drug only has cautions, these are listed under an orange banner.

Note boxes contain pertinent reminders and are not always present for every flow chart.

Note

⚠ Pertinent reminders will appear here.

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1.1 Authority to practise and practice levels

Ambulance personnel cannot legally supply or administer prescription medicines to patients unless they have authority to practise, or they are a registered health practitioner with the ability to supply or administer prescription medicines described within their scope of practice. In addition, services restrict the use of some items of clinical equipment and the performance of some clinical procedures to personnel at specified practice levels.

Authority to practise is the authorisation of a person to use these CPGs by the ambulance service Medical Director. Personnel may not use these CPGs without authority to practise. Authority to practise is granted at a specified practice level and the practice levels are listed in the table. Each practice level has a delegated scope of practice that defines the medicines and interventions that personnel may administer or perform when treating patients. Interventions that are not described within the delegated scopes of practice (for example automated defibrillation) may be provided by all personnel.

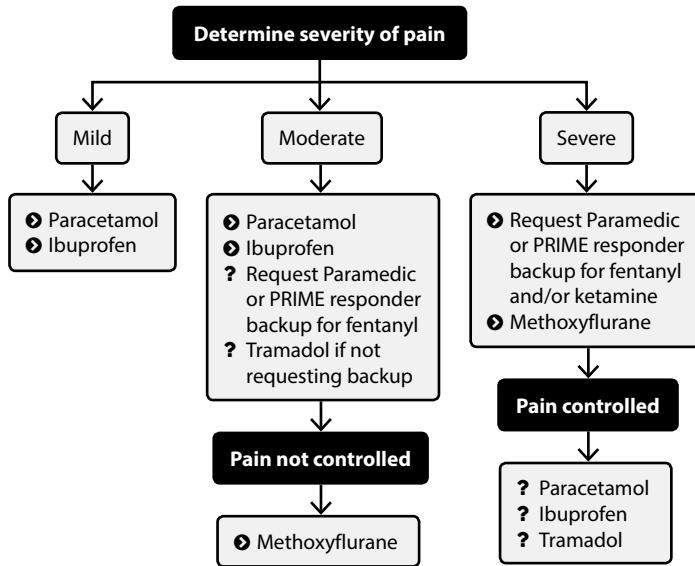
SKILL	EMT	PARAMEDIC	ICP
Adrenaline IN, IM, nebulised and topical	✓	✓	✓
Aspirin PO	✓	✓	✓
Glucagon IM	✓	✓	✓
GTN SL and patch	✓	✓	✓
Ibuprofen PO	✓	✓	✓
Ipratropium nebulised	✓	✓	✓
Laryngeal mask airway	✓	✓	✓
Laryngoscopy (airway obstruction)	✓	✓	✓
Loratadine PO	✓	✓	✓
Methoxyflurane inhaled	✓	✓	✓
Ondansetron IM	✓	✓	✓
Paracetamol PO	✓	✓	✓
Prednisolone PO	✓	✓	✓
Prednisone PO	✓	✓	✓
PEEP	✓	✓	✓

SKILL	EMT	PARAMEDIC	ICP
Salbutamol nebulised	✓	✓	✓
Tramadol PO	✓	✓	✓
Adrenaline IV (cardiac arrest only)		✓	✓
Amiodarone IV (cardiac arrest only)		✓	✓
Amoxicillin/clavulanic acid IV		✓	✓
Ceftriaxone IM and IV		✓	✓
Clopidogrel PO		✓	✓
CPAP		✓	✓
Droperidol IM and IV		✓	✓
Enoxaparin SC		✓	✓
Fentanyl IN, IM and IV		✓	✓
Gentamicin IV		✓	✓
Glucose IV		✓	✓
Heparin IV		✓	✓
IO access		✓	✓
IV cannulation		✓	✓
Ketamine IM, PO and IV (analgesia only)		✓	✓
1% lignocaine SC and IO		✓	✓
Manual defibrillation		✓	✓
Midazolam IM (seizures and agitated delirium only)		✓	✓
Midazolam IV (seizures only)		✓	✓
Naloxone IM and IV		✓	✓
Olanzapine PO		✓	✓
Ondansetron IV		✓	✓
Oxytocin IM		✓	✓
0.9% sodium chloride IV		✓	✓
Synchronised cardioversion		✓	✓

SKILL	EMT	PARAMEDIC	ICP
Tenecteplase IV		✓	✓
Tranexamic acid IV		✓	✓
Valproate IV		✓	✓
Adenosine IV			✓
Adrenaline (all routes)			✓
Amiodarone IV			✓
Atropine IV			✓
Calcium chloride IV			✓
Chest decompression (needle)			✓
Cricothyroidotomy			✓
Endotracheal intubation			✓
Fascia iliaca block			✓
Finger thoracostomy			✓
GTN IV infusion			✓
Hydrocortisone IV			✓
Ketamine (analgesia and dissociation)			✓
Labetalol IV			✓
Magnesium IV			✓
Metaraminol IV			✓
Metoprolol IV			✓
Midazolam IV			✓
Pacing			✓
Promethazine IV			✓
Rocuronium IV			✓
0.75% ropivacaine SC			✓
8.4 % sodium bicarbonate IV			✓
Suxamethonium IV (RSI endorsed personnel only)			✓



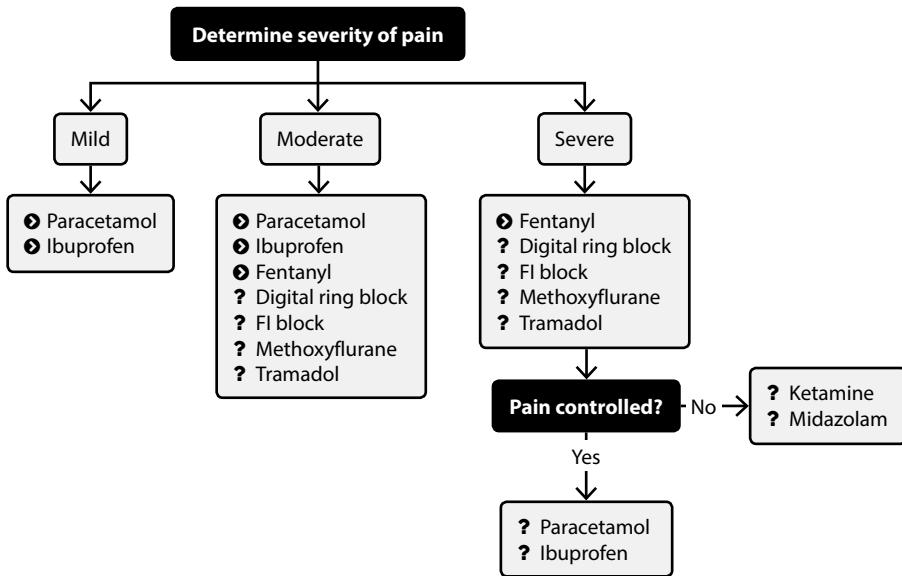
1.4 Analgesia: EMT personnel



Note

- ⚠ For medicine doses, contraindications and cautions see 'analgesia summary table' pg12.
- ⚠ If dissociation required:
 - Request ICP backup.
 - Request Paramedic or PRIME Responder backup if no ICP available.

1.4 Analgesia: Paramedic and ICP personnel



Note

- ⚠ For medicine doses, contraindications and cautions see 'analgesia summary table' pg12.
- ⚠ If dissociation required:
 - Request ICP backup.
 - Seek clinical advice if no ICP available.

Analgesia summary table

PARACETAMOL

- 1.5 g PO if > 80 kg
- 1 g PO if 50-80 kg

- Paracetamol in last 4 hours
- Abdominal pain
- Severe liver disease

IBUPROFEN

- 600 mg PO if > 80 kg
- 400 mg PO if 50-80 kg

✗ 3rd trimester pregnancy

- Ibuprofen in last 4 hours
- Abdominal pain
- Aged ≥ 75 years
- Dehydration or shock
- Renal impairment
- Bleeding disorder
- Clinically significant bleeding
- Bronchospasm with NSAIDS
- Taking warfarin
- Pregnancy

TRAMADOL

- 50 mg PO

✗ Aged < 12 years

- Tramadol in last 4 hours
- Abdominal pain
- Aged ≥ 75 years
- Confusion
- Pregnancy

METHOXYFLURANE

- 3 ml inhaled, may repeat x1 if patient ≥ 12 years

✗ Personal or family history of MH
 ✗ Unable to obey commands
 ✗ Known renal impairment
 ✗ Has had methoxyflurane in the last week

- Aged ≥ 75 years
- Pre-eclampsia
- Confined spaces

FENTANYL

- 10-50 mcg IV every 5 mins prn
- 200 mcg IN if > 80 kg
- 100 mcg IN if 50-80 kg
- Halve subsequent IN doses, repeat every 10 mins prn
- 50-100 mcg IM, repeat x1 after 20 mins if required

✗ Unable to obey commands
 ✗ Respiratory depression

- Aged < 1 year
- High risk of respiratory depression
- Labour
- Concurrent administration of opiates, ketamine or midazolam
- Elderly and/or frail
- Signs of shock

KETAMINE

Analgesia

- 30 mg IV over 15 mins if > 80 kg
- 20 mg IV over 15 mins if 50-80 kg
- Repeat IV doses prn
- 0.5 mg/kg IM/PO (max 50 mg)
- May repeat IM or PO dose x1 after 20 mins

✗ Aged < 1 year

- ⊖ Unable to obey commands
- ⊖ Active psychosis
- ⊖ Hypertension
- ⊖ Clinical condition that may be worsened by hypertension
- ⊖ Current myocardial ischaemia
- ⊖ Concurrent administration of sedatives or midazolam
- ⊖ Elderly and/or frail

Dissociation

- 1 mg/kg IV (max 100 mg), may repeat x1 after 5 mins
- 2 mg/kg IM (max 200 mg), may repeat x1 after 20 mins

MIDAZOLAM

- 1 mg IV every 5 mins prn

✗ Aged < 12 years
✗ Unable to obey commands

- ⊖ Altered LOC
- ⊖ High risk of respiratory depression
- ⊖ Signs of shock
- ⊖ Elderly and/or frail
- ⊖ Concurrent administration of opiates, ketamine or sedatives

ROPIVACAINE

- Max 150 mg (20ml of 0.75%) SC for ring blocks, may repeat x1 after 60 mins
- 150 mg (40 ml of 0.375%) for Fl block, may repeat x1 after 60 mins

Ring block:

- ✗ Infection at site of injection
- ✗ Aged < 12 years
- ✗ Infection at site of injection
- ✗ Previous surgery in groin
- ✗ Unable to cooperate

Ring block and Fl block:

- ⊖ Taking an anticoagulant

1% LIGNOCAINE

- 50 mg (5 ml of 1%) IO over 2 mins, may repeat x1 after 15 mins
- Max 200mg (20 ml of 1%) SC, may repeat x1 after 30 mins

IO:

- ✗ None

Ring block:

- ✗ Infection at site of injection

IO:

- ⊖ None

Ring block:

- ⊖ Taking an anticoagulant

Note

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.

1.6 Patient competency

REASONABLE GROUNDS FOR BELIEVING A PATIENT IS NOT COMPETENT

Any of the following:

- Appears unable to understand information, or
- Appears unable to understand the consequences of their decisions, or
- Appears unable to remember information, or
- Has attempted suicide, or
- A threat to commit suicide appears significant or genuine.

IF PERSONNEL BELIEVE THE PATIENT IS NOT COMPETENT TO MAKE INFORMED DECISIONS, TREATMENT MAY BE PROVIDED AGAINST THE PATIENT'S WILL IF:

All of the following:

- Personnel believe treatment is in the patient's best interest, and
- Personnel believe the risks associated with providing treatment are less than the risks of not providing treatment, and
- The treatment is not contradicting a valid advance directive.

1.7 Calling the Clinical Desk

I **Identify yourself:** state your name, practice level, vehicle call sign and where you are calling from.

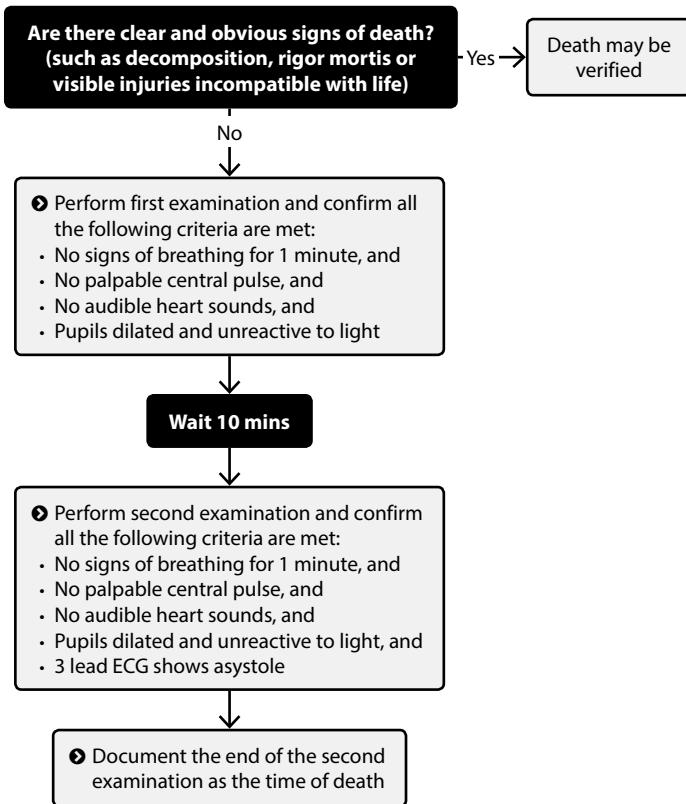
S **Situation:** state a succinct reason for calling.

B **Background:** briefly describe the background of the incident.

A **Assessment:** describe your assessment of the patient. Ensure any information that is likely to be required is available.

R **Recommend and review:** state what you think is required and listen to instructions. Review and confirm the plan before ending the call.

1.14 Verification of death



Note

- ⚠ There may be slow broad complexes. If this is the case, wait until asystole is present before verifying death.
- ⚠ If a patient has a pacemaker, it is appropriate to verify death despite electrical activity on the ECG, provided all other clinical criteria are met.
- ⚠ Personnel with ATP must always complete a verification of death form if death is verified.

1.17 Requesting a helicopter

ANTS request criteria

A Access:

Access is difficult and a helicopter is the most appropriate means of extrication.

N Number:

The number of patients at the scene exceeds the capacity of road resources.

T Time:

The patient has a time sensitive condition and a helicopter will result in a clinically significant time saving in the patient arriving in hospital.

S Skill:

The patient requires personnel with specific skills and a helicopter will result in a clinically significant time saving in appropriately skilled personnel reaching the patient.

Provide the following information to Comms:

- The reason a helicopter is required, including the main request criteria.
- A brief summary of the patient's clinical condition.
- The expected immediate treatment needs of the patient.
- The expected hospital destination.
- Whether or not there are any specific requirements, for example winching.

0800 AIR DESK (0800 247 3375)

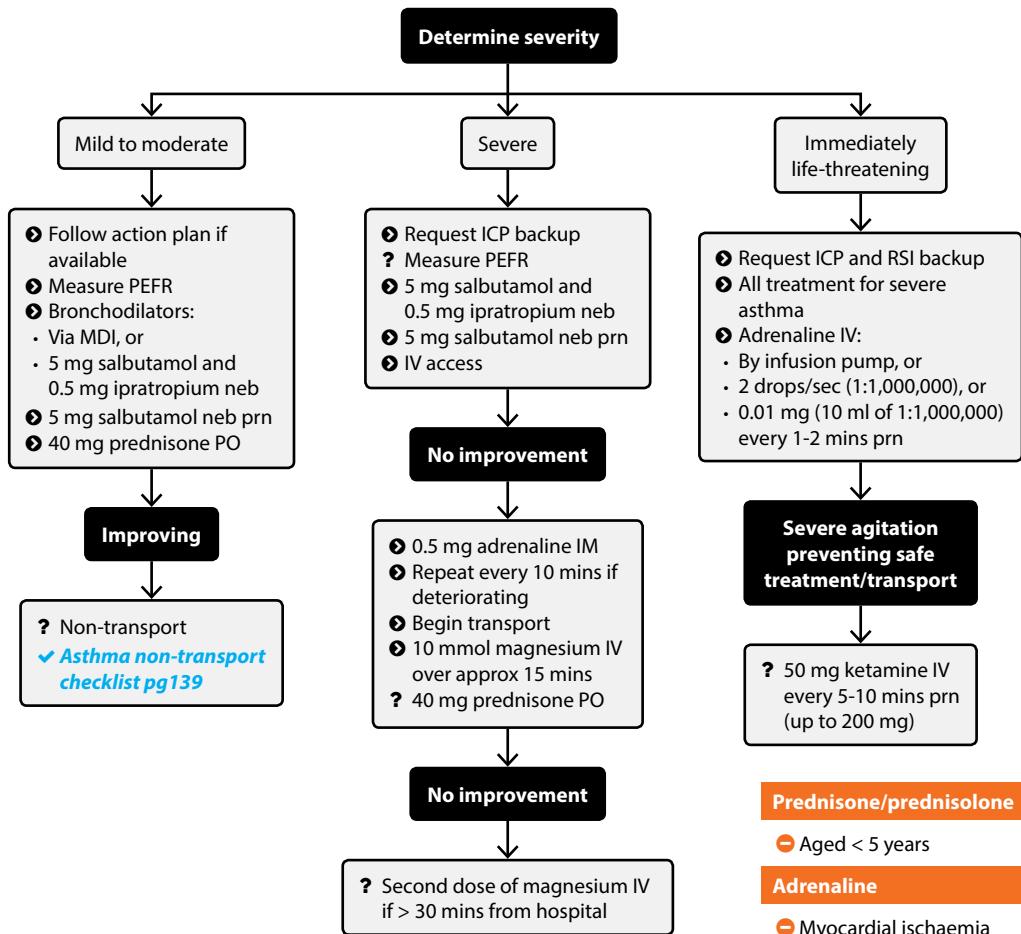
Note

⚠ The time saving must be clinically significant:

- More than 15 minutes' time saving if the patient is status one and has a time critical condition.
- More than 30 minutes' time saving if the patient is status two and has a time sensitive condition.
- More than 60 minutes' time saving if the patient is status three and has a time sensitive condition.



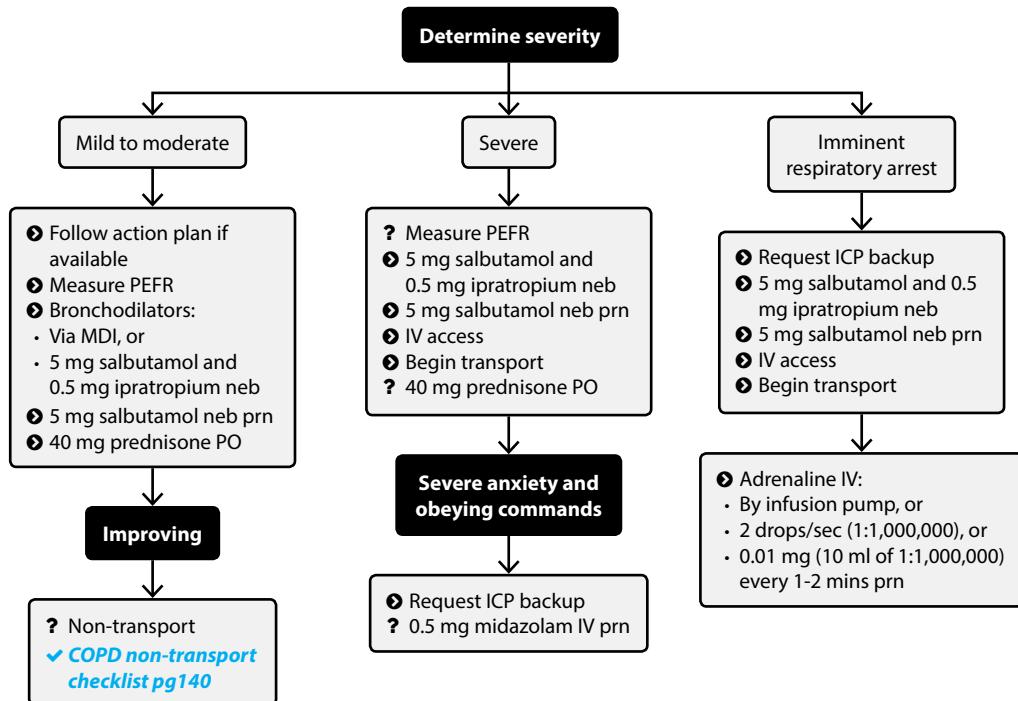
2.1 Asthma



Note

⚠ All doses described (excluding salbutamol and ipratropium) are for adults only, refer to the paediatric drug dose tables for children **pg79**.

2.2 Chronic obstructive pulmonary disease (COPD)



Note

- ⚠ Titrate oxygen to SpO₂ of 88-92%.
- ⚠ Use air to nebulise medicines if available.
- ⚠ If SpO₂ > 92% while oxygen is being used to nebulise, alternate 5 mins with mask on and 5 mins with mask off.

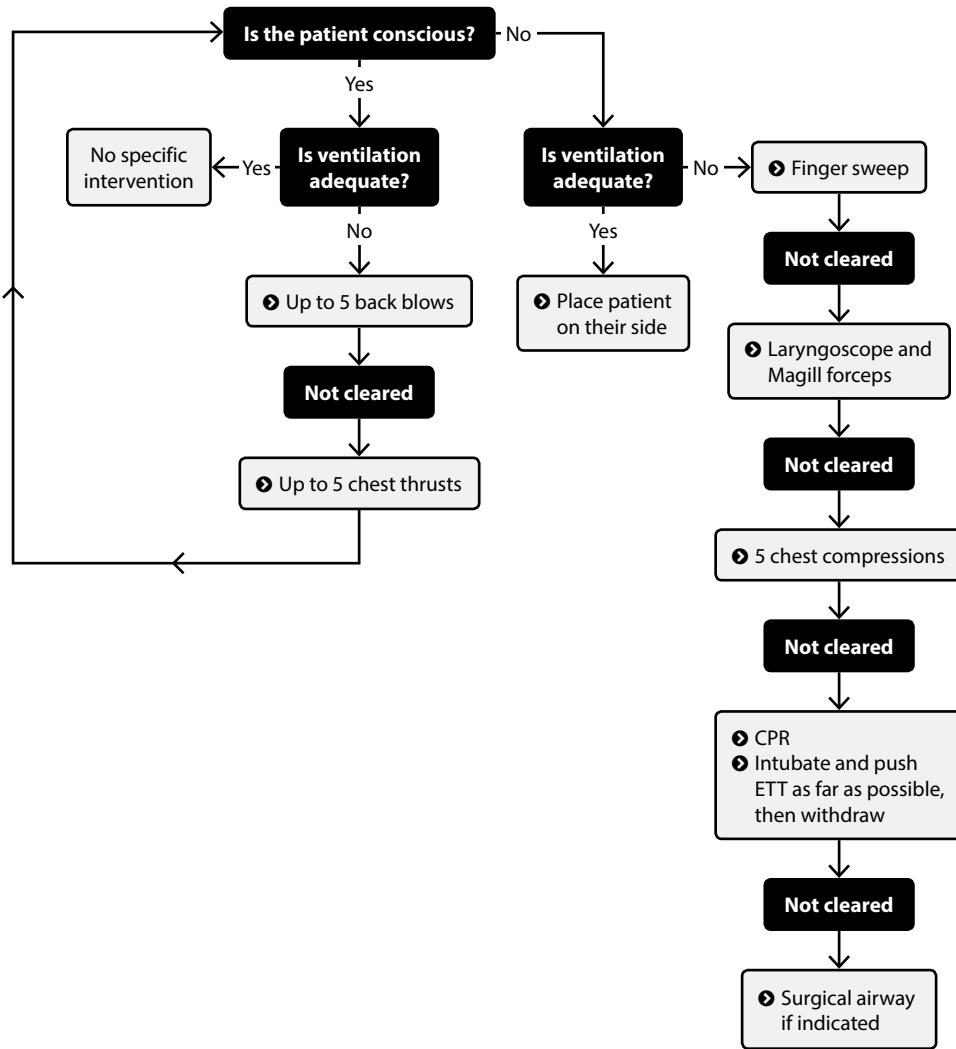
Midazolam

- Concurrent administration of opiates, ketamine or other sedatives
- Intoxication
- Elderly and/or frail

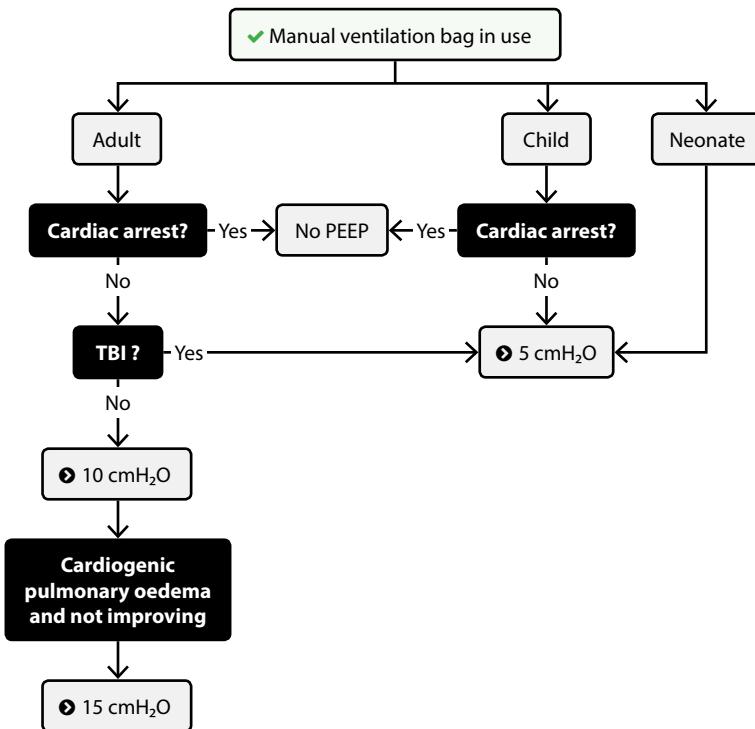
Adrenaline

- Myocardial ischaemia
- Tachydysrhythmia

2.3 Foreign body airway obstruction



2.4 Positive end expiratory pressure (PEEP)

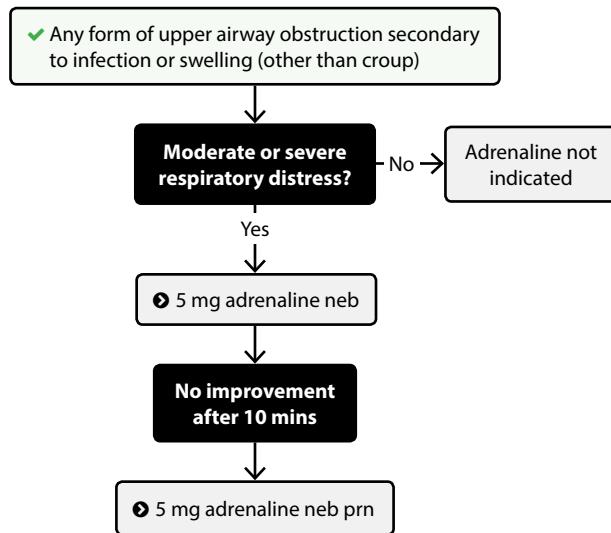


Note

⚠ Use PEEP with caution if:

- Ventilation is occurring via an ETT or LMA and the patient has signs of shock.
- PEEP is being used with a manual ventilation bag and mask and the patient has an altered LOC or vomiting.

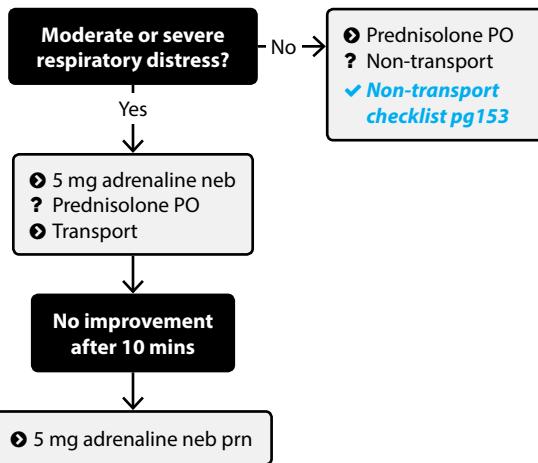
2.5 Stridor



Note

⚠ Backup from an ICP should be requested if the patient has severe respiratory distress or is deteriorating despite nebulised adrenaline.

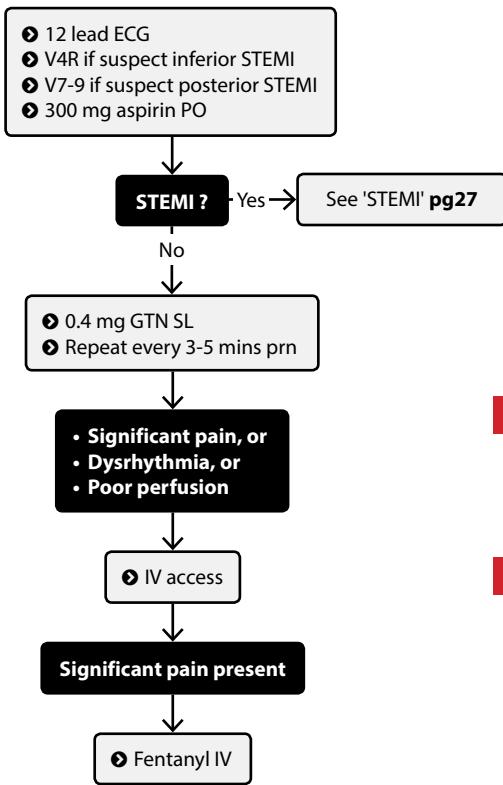
2.6 Croup



Note

- ⚠️ Backup from an ICP should be requested if the patient has severe respiratory distress or is deteriorating despite nebulised adrenaline.
- ⚠️ Children with mild respiratory distress from croup should usually be treated in the community provided:
 - Nebulised adrenaline has not been administered, and
 - Oral prednisolone has been administered, and
 - The patient's SpO₂ is greater than or equal to 94% on air, and
 - The parents/caregivers are advised the patient needs to see a doctor within 24 hours because a further course of oral steroids is required.

3.2 Myocardial ischaemia



Aspirin

- ✖ 3rd trimester pregnancy
- ➖ Known bleeding disorder
- ➖ Clinically significant bleeding
- ➖ Worsening of bronchospasm

GTN spray

- ✖ SBP < 100 mmHg
- ✖ HR < 40/min or > 150/min
- ✖ VT
- ➖ STEMI
- ➖ Small, frail or physiologically unstable
- ➖ Poor perfusion
- ➖ Dysrhythmia
- ➖ Erectile dysfunction medicine
- ➖ Known aortic or mitral stenosis

Fentanyl

- ✖ Unable to obey commands
- ✖ Respiratory depression
- ➖ At high risk of respiratory depression
- ➖ Elderly and/or frail
- ➖ Signs of shock
- ➖ Concurrent administration of other opiates, ketamine or midazolam

Note

- ⚠ This section is for adults only, seek clinical advice if the patient is a child.
- ⚠ The elderly, diabetics and women are at increased risk of silent myocardial ischaemia.

3.3 12 lead ECG criteria for STEMI

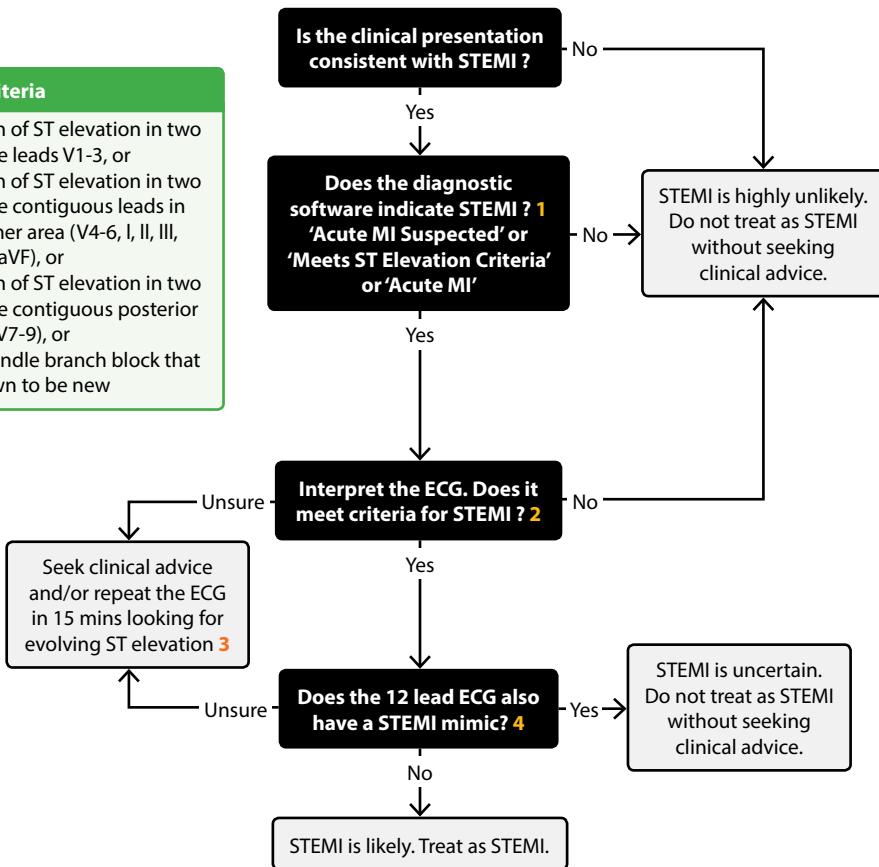
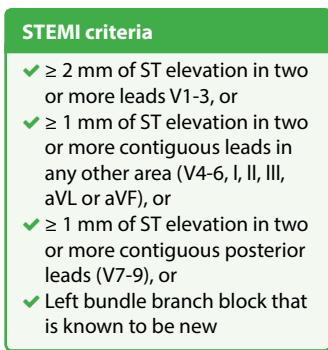
- ✓ More than or equal to 2 mm of ST elevation in two or more leads V1-3, or
- ✓ More than or equal to 1 mm of ST elevation in two or more contiguous leads in any other area (V4-6, I, II, III, aVL or aVF), or
- ✓ More than or equal to 1 mm of ST elevation in two or more contiguous posterior leads (V7-9), or
- ✓ Left bundle branch block that is known to be new.

Lead I High Lateral	aVR	Lead V1 Septal	Lead V4 Anterior
Lead II Inferior	Lead aVL High Lateral	Lead V2 Septal	Lead V5 Lateral
Lead III Inferior	Lead aVF Inferior	Lead V3 Anterior	Lead V6 Lateral

Additional 12 lead ECG territory nomenclature:

- Anteroseptal: V1-V4.
- Anterolateral: V3-V6, I and aVL.
- Extensive anterior: V1-V6.
- Inferolateral: II, III, aVF, V5, V6 and/or I and aVL.
- Posterior: V7-V9.

3.3 STEMI diagnosis



Note

- 1 Personnel not confident in 12 lead ECG interpretation should call for backup or seek clinical advice.
- 2 The presence of ST depression in reciprocal leads increases the likelihood of STEMI.
- 3 The presence of evolving ST elevation increases the likelihood of STEMI.
- 4 In particular: LBBB (usually mimics anterior STEMI), RBBB (usually mimics anterior STEMI), LVH (usually mimics anterior STEMI), paced rhythm, benign early repolarisation.

3.3 STEMI treatment

- ⌚ Inform 'Code STEMI' if helicopter transport is indicated
- ⌚ Transmit 12 lead ECG
- ⌚ 300 mg aspirin PO
- ⌚ IV access (left arm preferred)
- ⌚ 0.4 mg GTN SL, repeat every 10 mins prn
- ⌚ Fentanyl IV if indicated for analgesia

Can the patient clearly reach a PCI hospital within 90 mins of STEMI diagnosis?

Yes

Primary PCI pathway

- ⌚ Begin transport
- ⌚ **Fibrinolytic therapy/PCI checklist pg145**
- ⌚ Phone STEMI Coordinator and provide patient details:
 - Surname, age and NHI
 - Time of symptom onset
 - 12 lead ECG findings
 - ETA
 - Discuss any contraindications or cautions in fibrinolytic therapy/PCI checklist

See 'fibrinolytic therapy' pg28

Fibrinolytic therapy pathway

Aspirin

- ✖ 3rd trimester pregnancy
- ➖ Known bleeding disorder
- ➖ Clinically significant bleeding
- ➖ Bronchospasm with NSAIDs

GTN spray

- ✖ SBP < 100 mmHg
- ✖ HR < 40/min or > 150/min
- ✖ VT
- ➖ STEMI
- ➖ Small, frail or physiologically unstable
- ➖ Poor perfusion
- ➖ Dysrhythmia
- ➖ Erectile dysfunction medicine
- ➖ Aortic or mitral stenosis

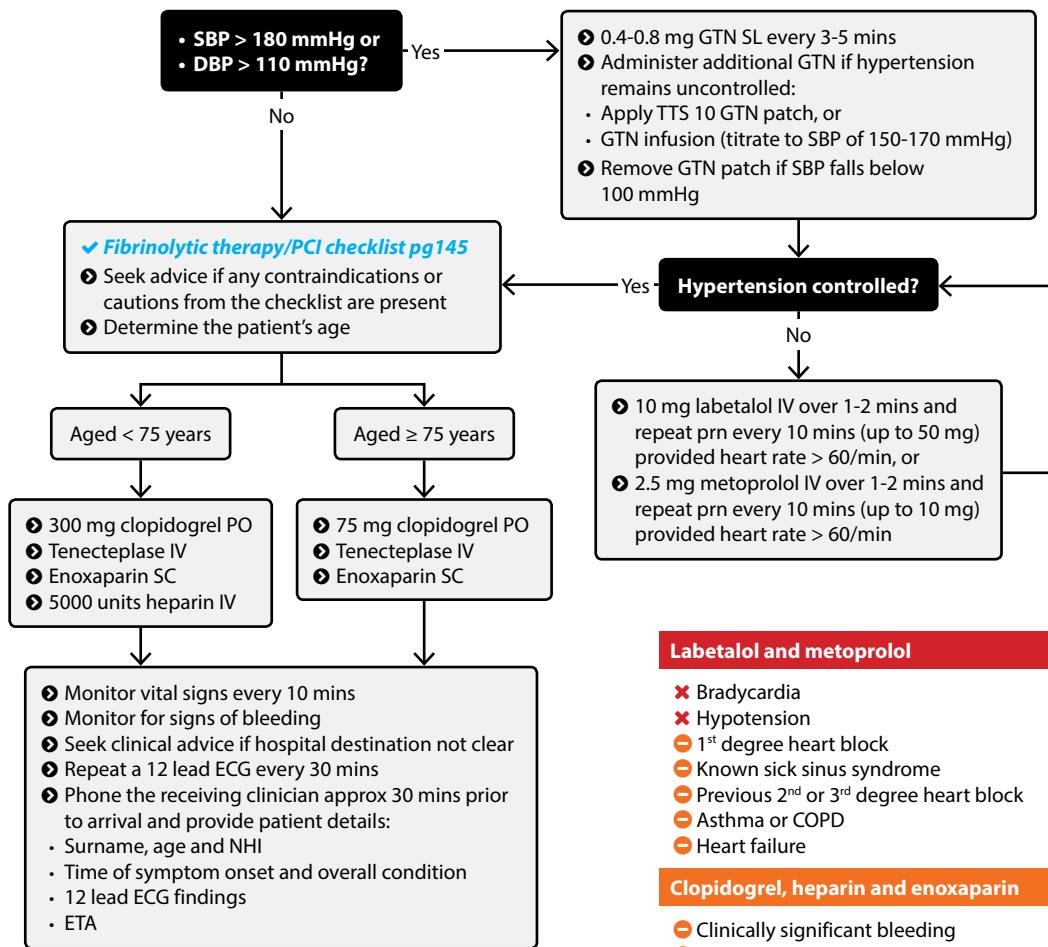
Fentanyl

- ✖ Unable to obey commands
- ✖ Respiratory depression
- ➖ At high risk of respiratory depression
- ➖ Elderly and/or frail
- ➖ Signs of shock
- ➖ Concurrent administration of other opiates, ketamine or midazolam

Note

⚠ Seek clinical advice if the most appropriate reperfusion pathway or hospital destination is not clear.

3.4 Fibrinolytic therapy



Labetalol and metoprolol

- ✖ Bradycardia
- ✖ Hypotension
- 1st degree heart block
- Known sick sinus syndrome
- Previous 2nd or 3rd degree heart block
- Asthma or COPD
- Heart failure

Clopidogrel, heparin and enoxaparin

- Clinically significant bleeding
- Taking an anticoagulant
- At risk of bleeding

Tenecteplase

- ✖ Refer to checklist pg145

3.4 Fibrinolytic therapy doses

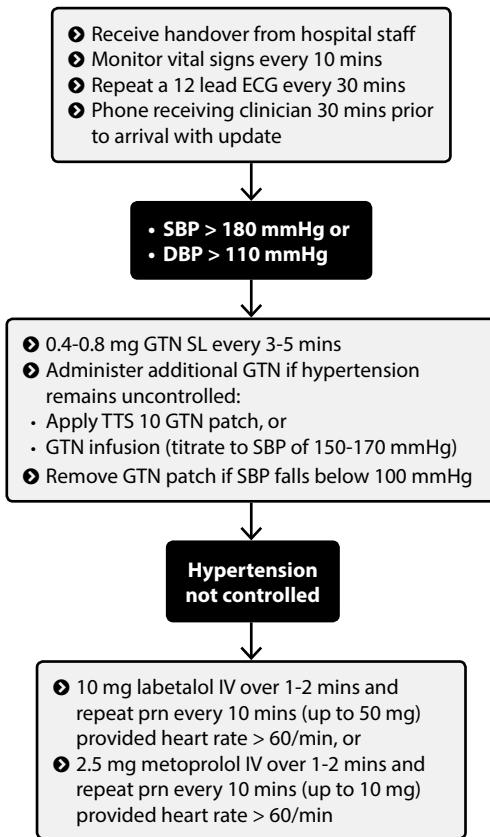
Age less than 75 years

Weight	TENECTEPLASE		ENOXAPARIN	
	Tenecteplase (dose IV)	Tenecteplase (volume IV)	Enoxaparin (dose SC)	Enoxaparin (volume SC)
< 60 kg	30 mg	6 ml	60 mg	0.6 ml
60-69 kg	35 mg	7 ml	70 mg	0.7 ml
70-79 kg	40 mg	8 ml	80 mg	0.8 ml
80-89 kg	45 mg	9 ml	90 mg	0.9 ml
≥ 90 kg	50 mg	10 ml	100 mg	1 ml

Age 75 years or older

Weight	TENECTEPLASE		ENOXAPARIN	
	Tenecteplase (dose IV)	Tenecteplase (volume IV)	Enoxaparin (dose SC)	Enoxaparin (volume SC)
< 60 kg	15 mg	3 ml	45 mg	0.45 ml
60-69 kg	17.5 mg	3.5 ml	50 mg	0.5 ml
70-79 kg	20 mg	4 ml	60 mg	0.6 ml
80-89 kg	22.5 mg	4.5 ml	70 mg	0.7 ml
≥ 90 kg	25 mg	5 ml	75 mg	0.75 ml

3.5 Inter-hospital transfer for STEMI



GTN spray and GTN patch

- ✖ SBP < 100 mmHg
- ✖ HR < 40/min or > 150/min
- ✖ VT
- STEMI
- Small, frail or physiologically unstable
- Poor perfusion
- Dysrhythmia
- Erectile dysfunction medicine
- Aortic or mitral stenosis

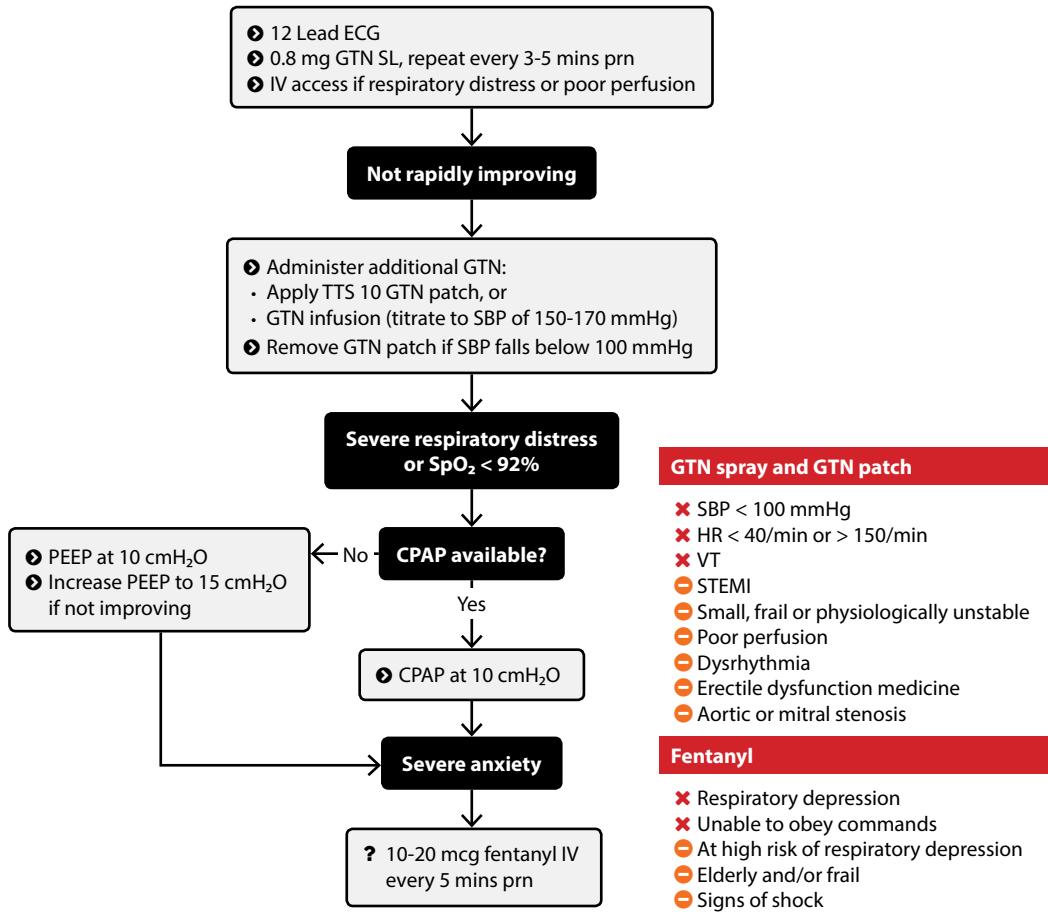
Labetalol and metoprolol

- ✖ Bradycardia
- ✖ Hypotension
- 1st degree heart block
- Known sick sinus syndrome
- Previous 2nd or 3rd degree heart block
- Asthma or COPD
- Heart failure

Note

⚠ Seek clinical advice if the blood pressure is difficult to control or there are significant complications.

3.6 Cardiogenic pulmonary oedema



Note

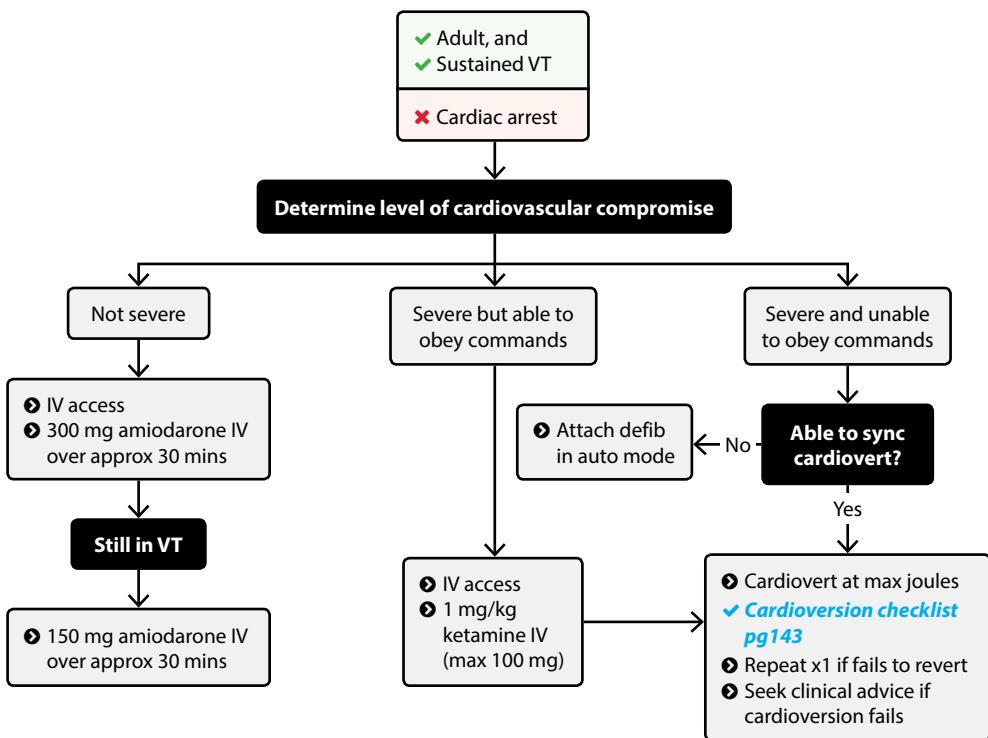
- ⚠ This section is for adults only, seek clinical advice if the patient is a child.
- ⚠ Use CPAP and PEEP with caution if altered LOC, vomiting or signs of shock.

3.7 Determining the level of cardiovascular compromise

NOT COMPROMISED	MILDLY COMPROMISED
<ul style="list-style-type: none">• Normal vital signs.• No symptoms of myocardial ischaemia.• 'Looks status four'.	<ul style="list-style-type: none">• Near normal vital signs e.g. near normal BP and CRT, normal LOC, normal or near normal breathing.• Mild symptoms of myocardial ischaemia.• 'Looks status three'.
MODERATELY COMPROMISED	SEVERELY COMPROMISED
<ul style="list-style-type: none">• Abnormal vital signs e.g. hypotension or prolonged CRT, altered LOC but can obey commands, moderate shortness of breath.• Significant symptoms of myocardial ischaemia.• 'Looks status two'.	<ul style="list-style-type: none">• Markedly abnormal vital signs e.g. severe hypotension, inability to obey commands, severe shortness of breath.• High risk of cardiac arrest.• 'Looks status one'.



3.8 Ventricular tachycardia



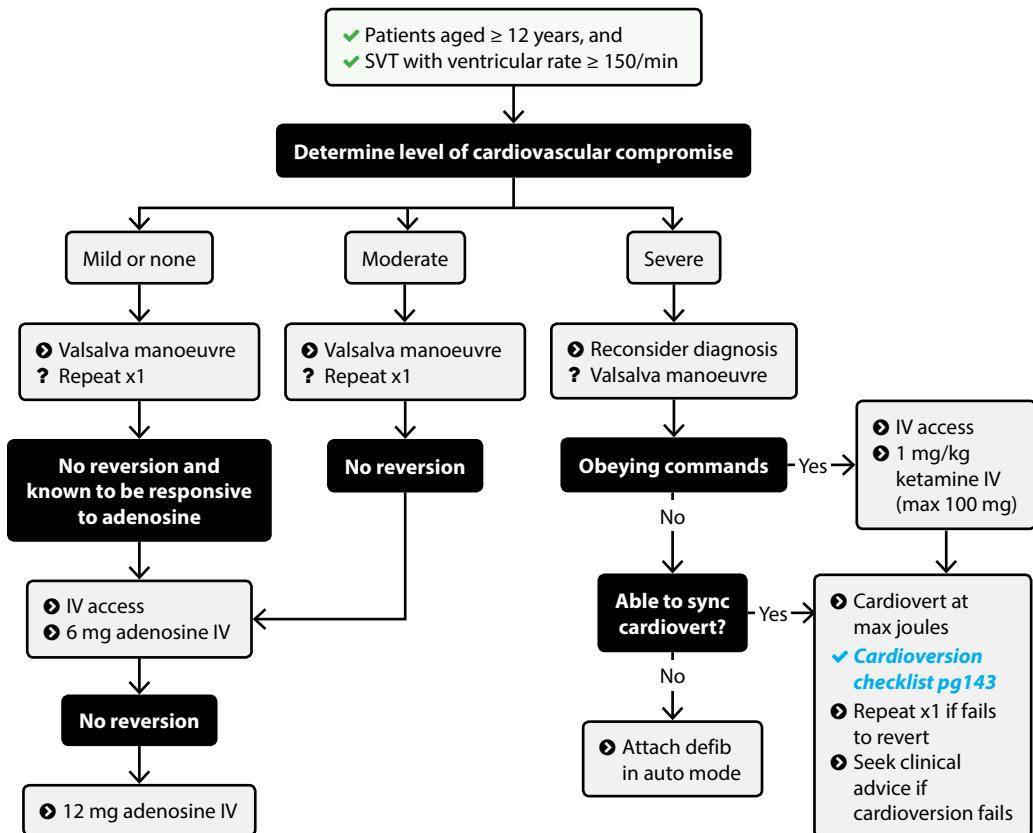
Note

- ⚠️ Do not administer GTN.
 - ⚠️ SVT with abnormal conduction can mimic VT.
 - ⚠️ Consider an IV bolus of sodium ions if VT is secondary to poisoning.

Amiodarone

- ✗ VT secondary to poisoning
 - ✗ Known severe allergy to iodine
 - ✗ Poor perfusion
 - ✗ Hypotension
 - ✗ Sick sinus syndrome
 - ✗ Previous 2nd or 3rd degree heart block
 - ✗ Pregnancy

3.9 Supraventricular tachycardia



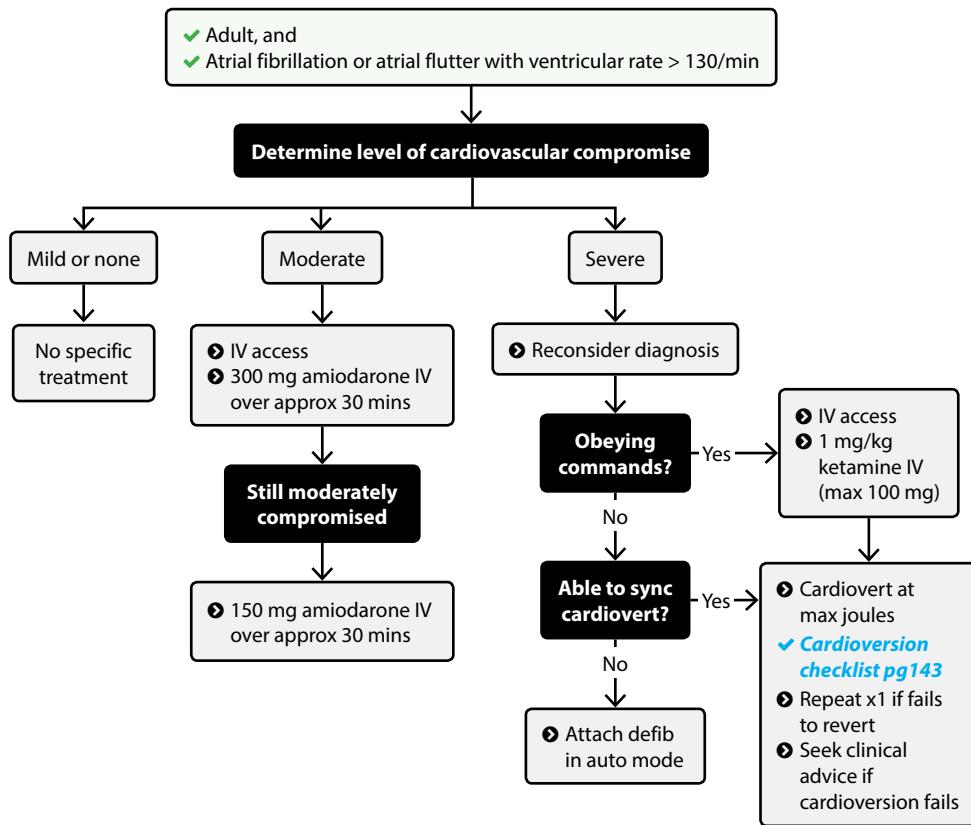
Note

⚠ Backup from an ICP must be requested if the patient is moderately or severely compromised and the rhythm fails to revert following a Valsalva manoeuvre.

Adenosine

- ✗ Sick sinus syndrome without pacemaker
- ✗ Previous 2nd or 3rd degree heart block without pacemaker
- ✗ Heart transplantation without pacemaker
- ⌚ Asthma
- ⌚ COPD
- ⌚ WPW syndrome with a rhythm that could be fast AF

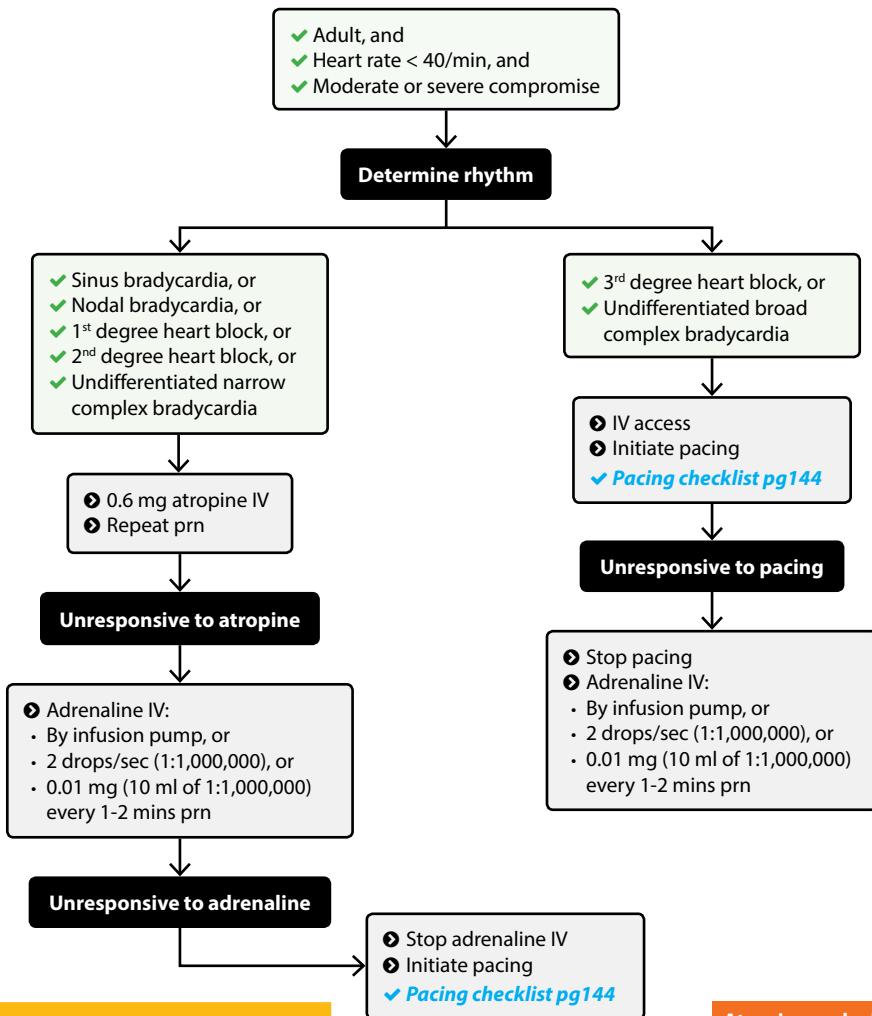
3.10 Atrial fibrillation or atrial flutter



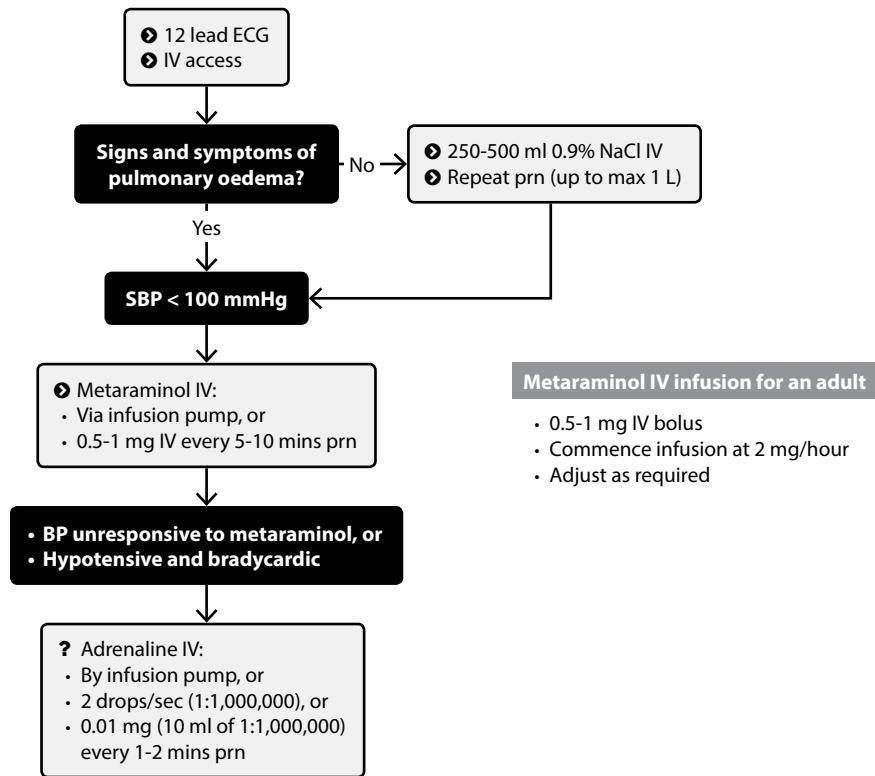
Amiodarone

- ✗ Known severe allergy to iodine
- ✗ Poor perfusion
- ✗ Hypotension
- ✗ Atrial fibrillation with severe sepsis
- ✗ Sick sinus syndrome
- ✗ Previous 2nd or 3rd degree heart block
- ✗ Pregnancy

3.12 Bradycardia



3.13 Cardiogenic shock



Note

- ⚠ This section is for adults only, seek clinical advice if the patient is a child.
- ⚠ Do not administer GTN.
- ⚠ Use caution with opiates, amiodarone, CPAP and PEEP.

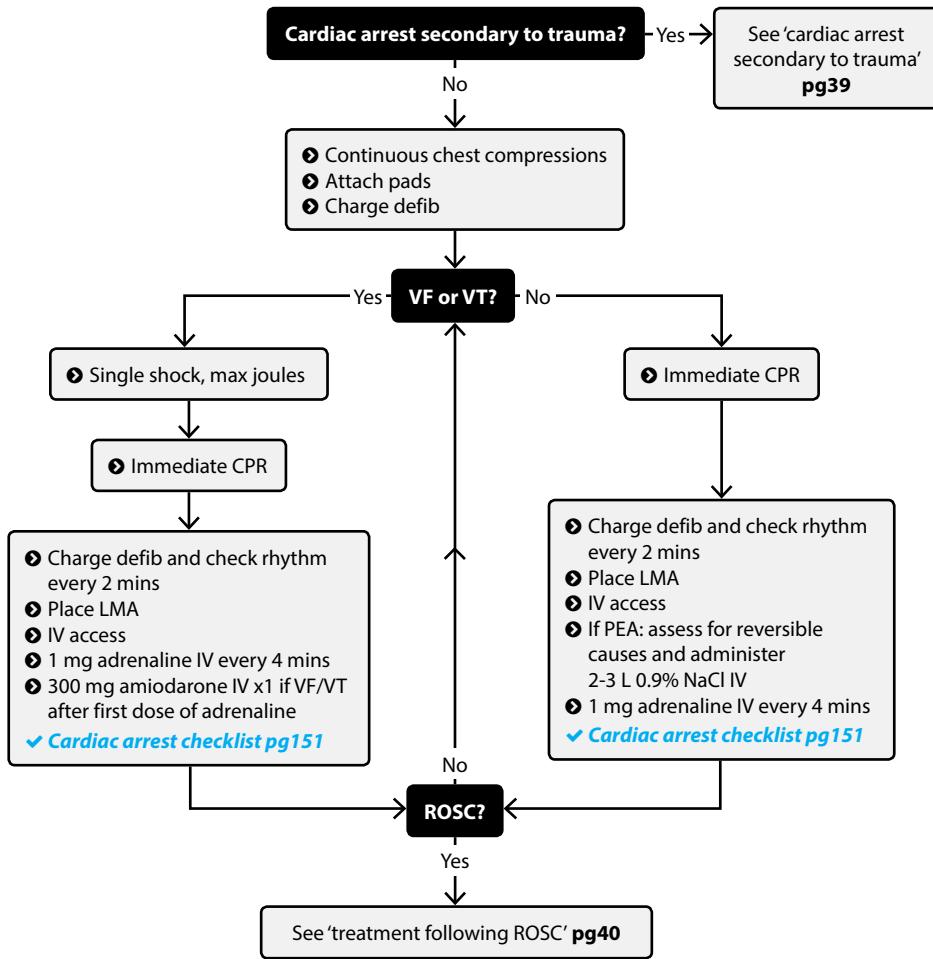
Metaraminol

- Bradycardia

Adrenaline

- Myocardial ischaemia
- Tachydysrhythmia

3.14 Cardiac arrest

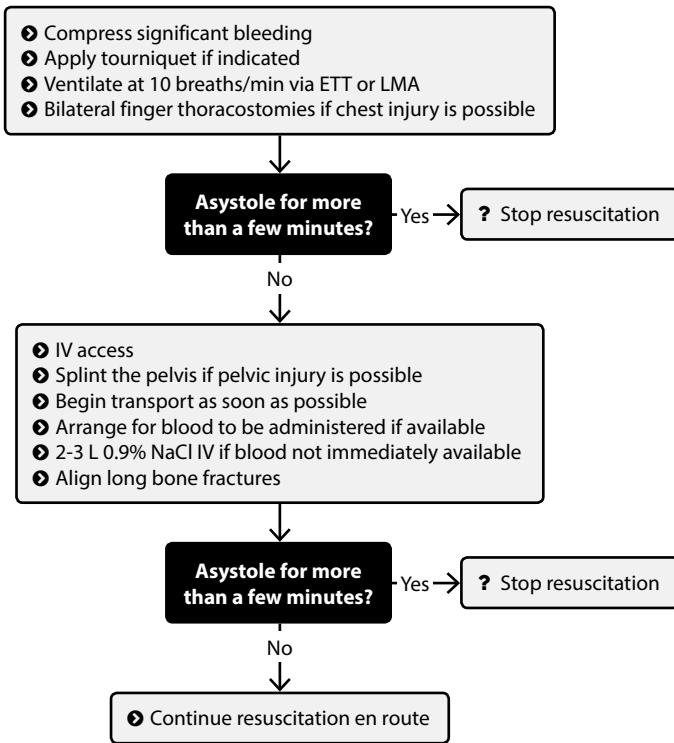


Note

⚠ If VF persists for > 15-20 mins, consider administering a further 150 mg amiodarone IV.

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.

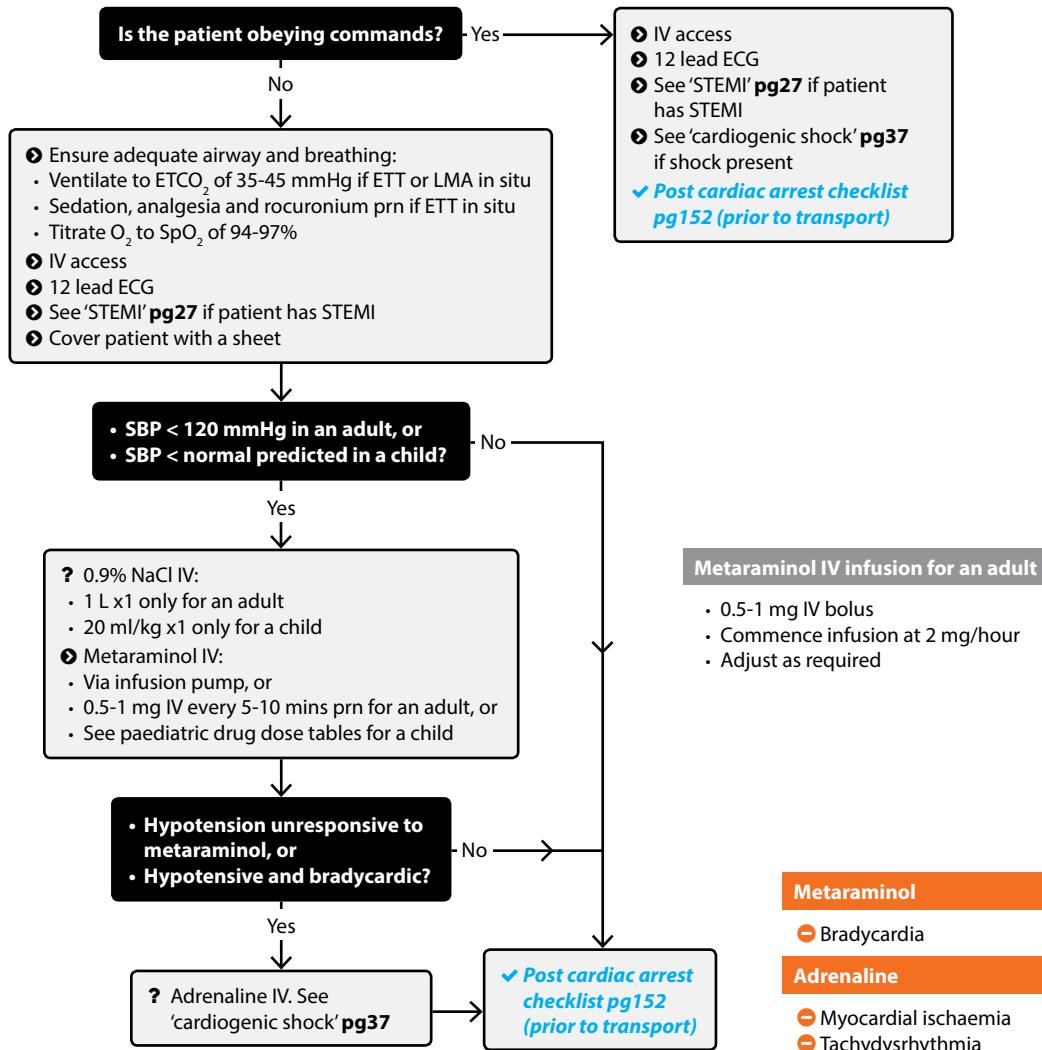
3.14 Cardiac arrest secondary to trauma



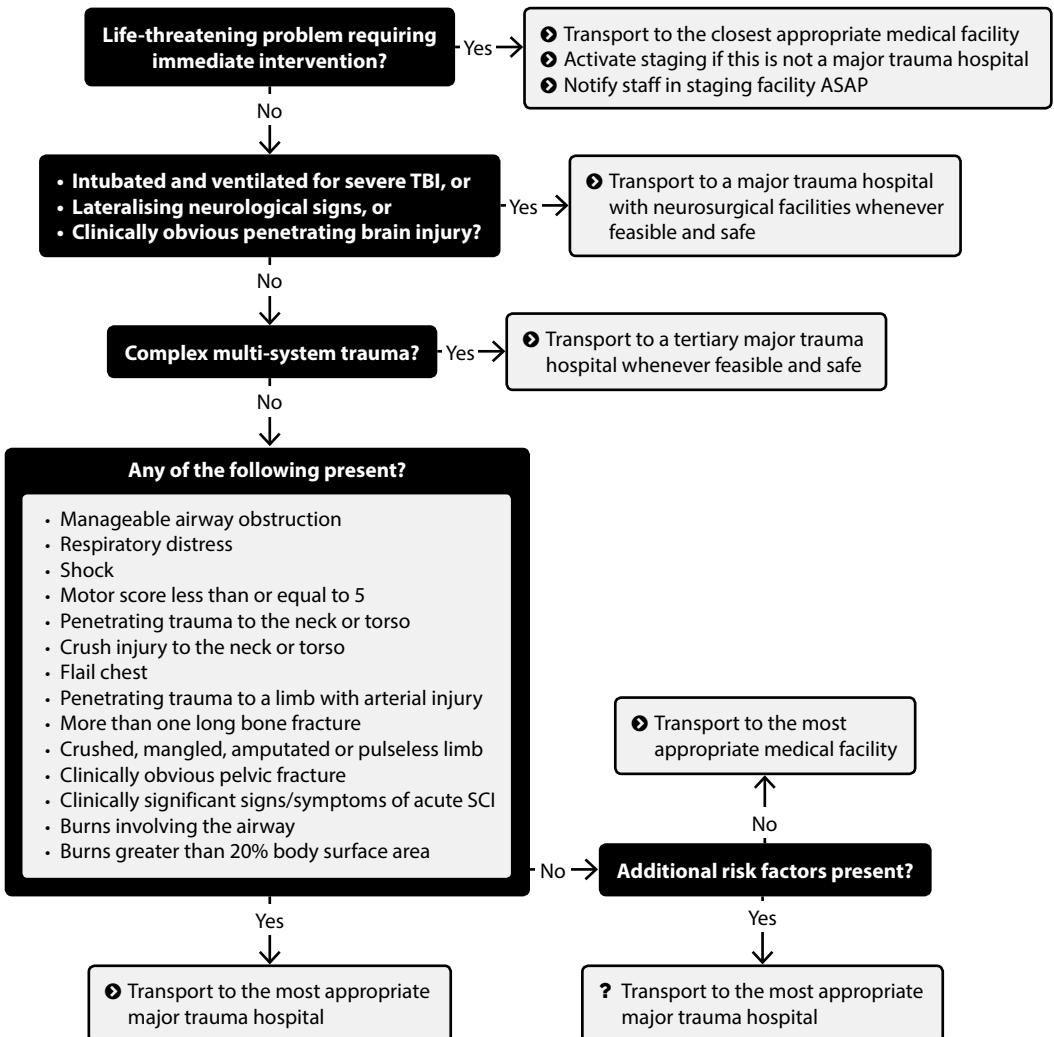
Note

- ⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children **pg79**.
- ⚠ Do not perform chest compressions.
- ⚠ IV medicines are not a priority.
- ⚠ It is usually inappropriate to resuscitate a trapped patient who is in cardiac arrest.

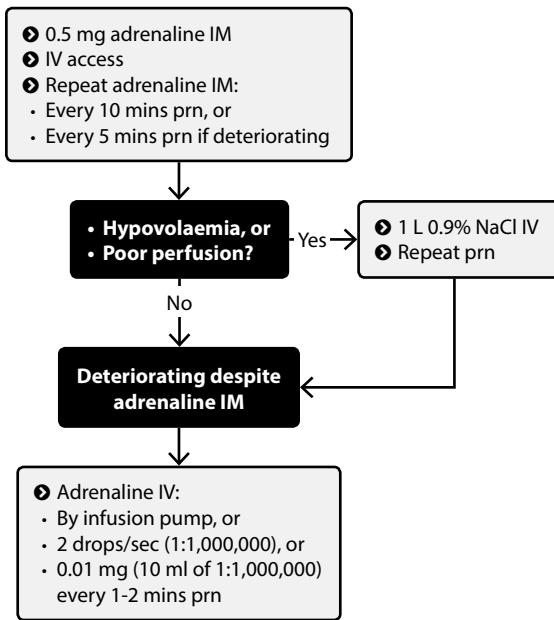
3.15 Treatment following return of spontaneous circulation



4.2 Major trauma triage



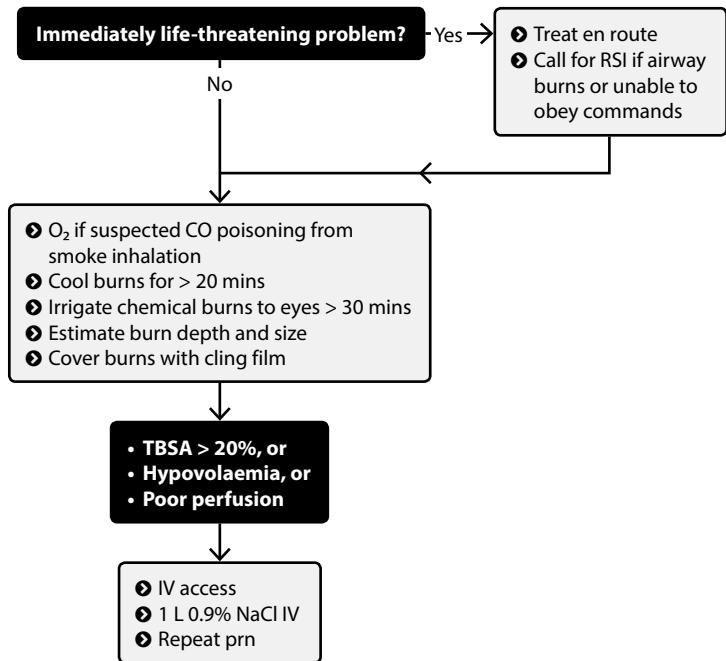
4.3 Anaphylaxis



Note

⚠️ All doses described are for adults only, refer to the paediatric drug dose tables for children **pg79**.

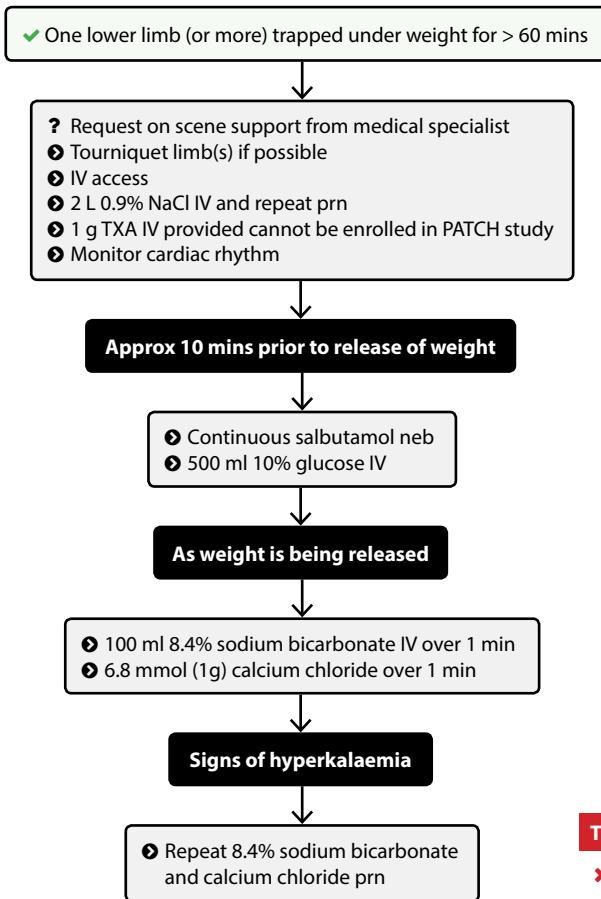
4.4 Burns



Note

- ⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.
- ⚠ Administer bronchodilators as per 'asthma' pg18 if bronchospasm is prominent.
- ⚠ Administer nebulised adrenaline if stridor is present.
- ⚠ Keep the patient warm.
- ⚠ Transport to a regional burn centre if TBSA > 20%, whenever feasible and safe.

4.5 Crush injury



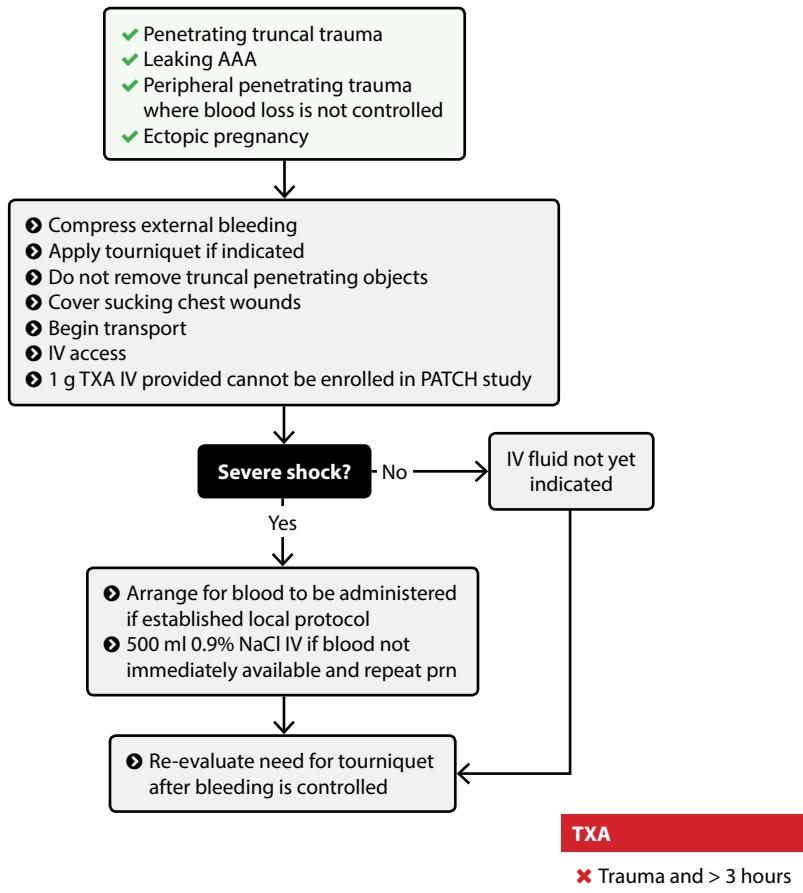
TXA

✗ Trauma and > 3 hours since injury

Note

- ⚠ All doses described are for adults only. Seek clinical advice if the patient is a child.
- ⚠ If significant risk of asphyxiation, release the weight as soon as possible.
- ⚠ If there is clinically significant risk of release syndrome, but no significant risk of asphyxiation, consider delaying release of the weight for up to 20 mins while preparation occurs.

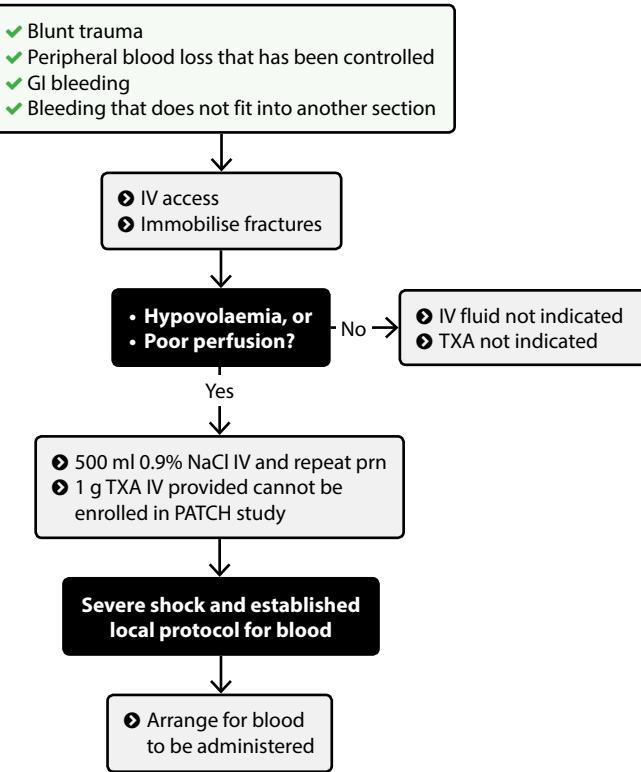
4.6 Hypovolaemia from uncontrolled bleeding



Note

- All doses described are for adults only. Seek clinical advice if the patient is a child.
 - Keep the patient warm.
 - Transport to a designated major trauma hospital if shock is secondary to trauma.
 - Provide as much notification prior to arrival as possible.

4.7 Hypovolaemia from controlled bleeding



TXA

✗ Trauma and > 3 hours since injury

Note

- ⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg 79.
- ⚠ Keep the patient warm.
- ⚠ Transport to a designated major trauma hospital if shock is secondary to trauma.

4.9 Concussion and minor traumatic brain injury

Assess the patient for symptoms and signs of concussion:

- a) Assess the patient's GCS.
- b) Assess for symptoms such as headache, nausea, amnesia or feeling hazy.
- c) Assess for signs such as vomiting, disorientation or reduced attention.
- d) Assess short term memory by asking 2-3 questions.
- e) Assess coordination by observing the patient walk and performing the finger-nose test.
- f) Assess balance by performing Romberg's test.



RED FLAGS - Must be seen by a doctor within two hours

- Loss of consciousness with the injury.
- Abnormal GCS.
- Seizure following the injury.
- Concussion is present and the patient is taking an anticoagulant or has a known bleeding disorder.
- Severe signs or symptoms of concussion are present.



ORANGE FLAGS - Should be seen in primary care within 48 hours

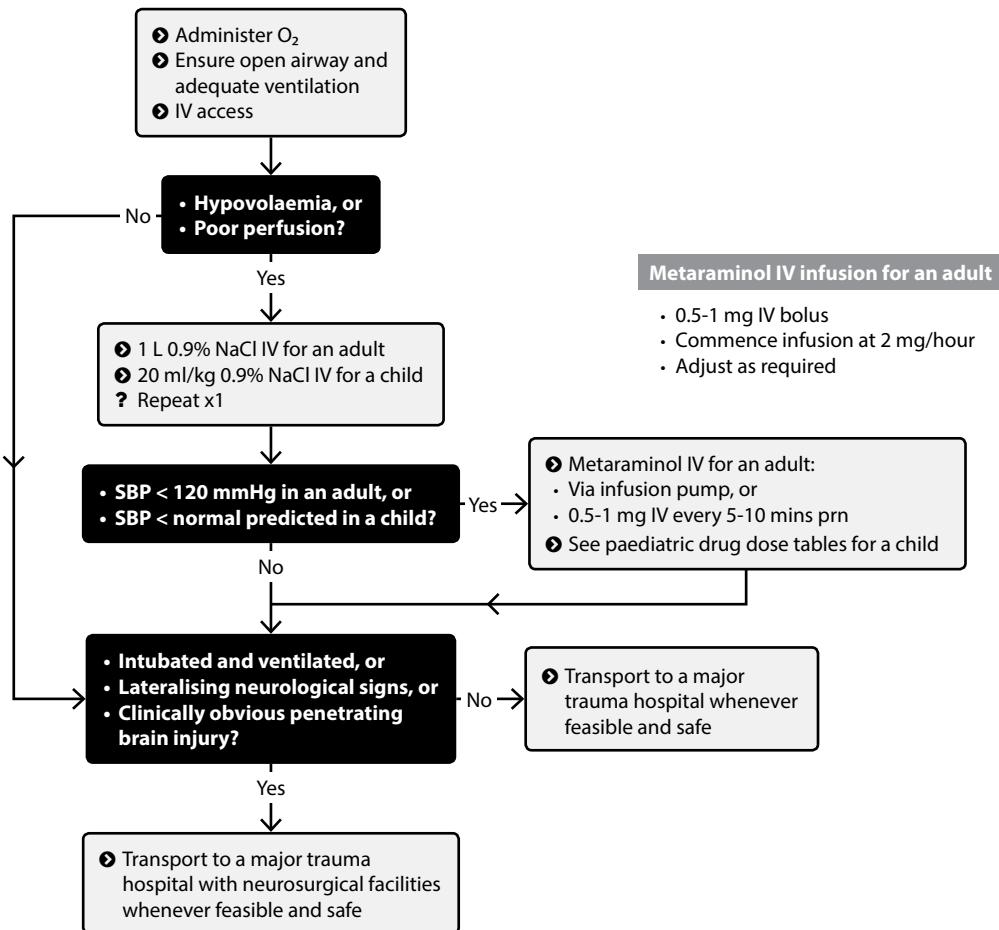
- Headache.
- Nausea or vomiting.
- Amnesia or abnormal short term memory.
- Feeling groggy or hazy.
- Disorientated or has reduced attention.
- Abnormal coordination.
- Abnormal balance.
- Recent concussion episode.



GREEN FLAGS - Usually suitable for self-care advice

- No symptoms or signs of concussion.

4.10 Severe traumatic brain injury



Note

- ⚠ Request backup for RSI if patient has a GCS ≤ 10 and clinically significant compromise of airway or ventilation.
- ⚠ Do not intubate without RSI unless patient has a GCS of 3 and ineffective breathing.

4.12-15 Limb injuries and/or dislocations

4.12 PATELLA DISLOCATION

- ? Inhaled analgesia
- ? IV access and fentanyl IV
- Grasp the patella and push it medially while simultaneously straightening the knee

4.13 SHOULDER DISLOCATION

Only attempt relocation if:

- ✓ Previous dislocation of the same joint, and
- ✓ Anterior dislocation, and
- ✓ No AC joint dislocation, and
- ✓ No fractured humerus, and
- ✓ Dislocation from malpositioning and/or minor force.

To attempt relocation:

- IV access and fentanyl IV
- ? Low dose midazolam IV
- ? Inhaled analgesia
- Stimson or modified Kocher's technique (max two attempts)

4.14 DIGIT DISLOCATION

- ? Ring block and/or inhaled analgesia
- Longitudinal traction

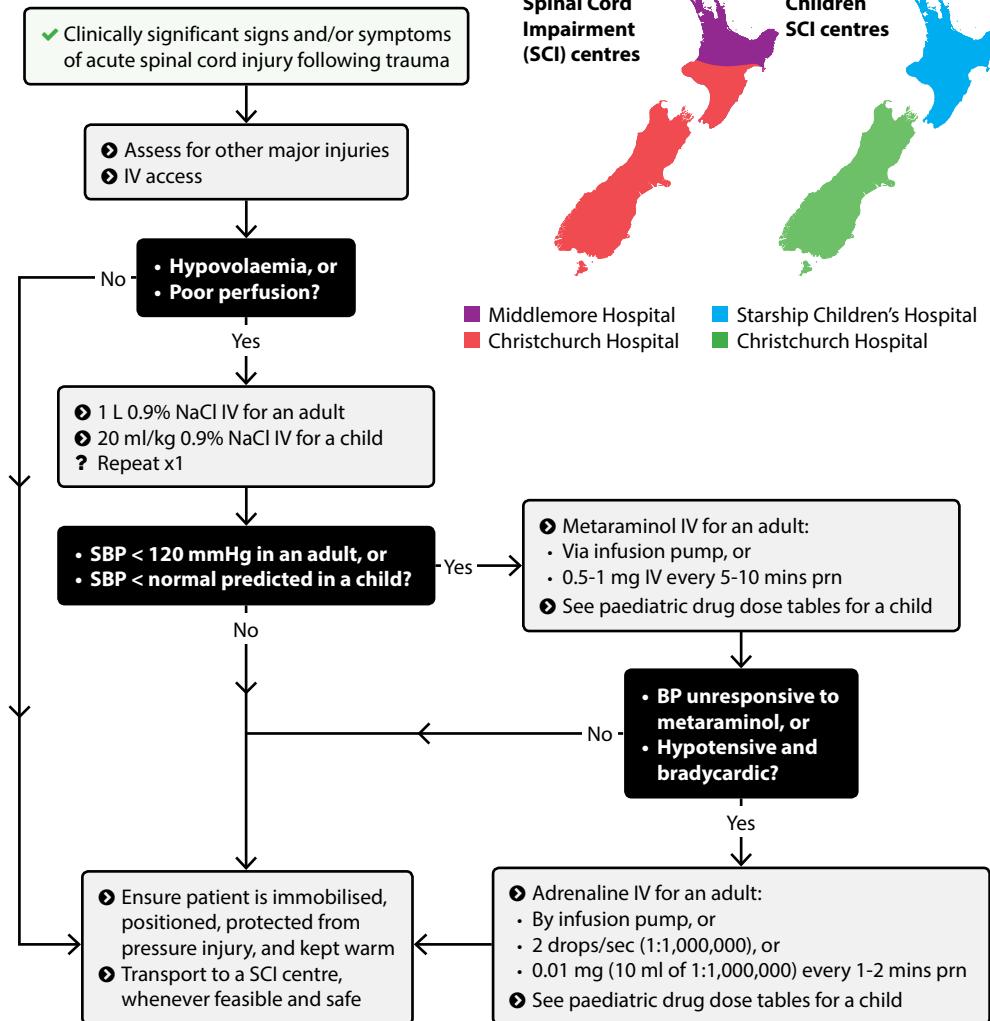
4.15 OTHER DISLOCATIONS (ELBOW, WRIST, HIP, KNEE, ANKLE)

Relocation should usually occur, particularly when there is impaired sensation or perfusion distal to the injury, unless transport time is less than 15 minutes.

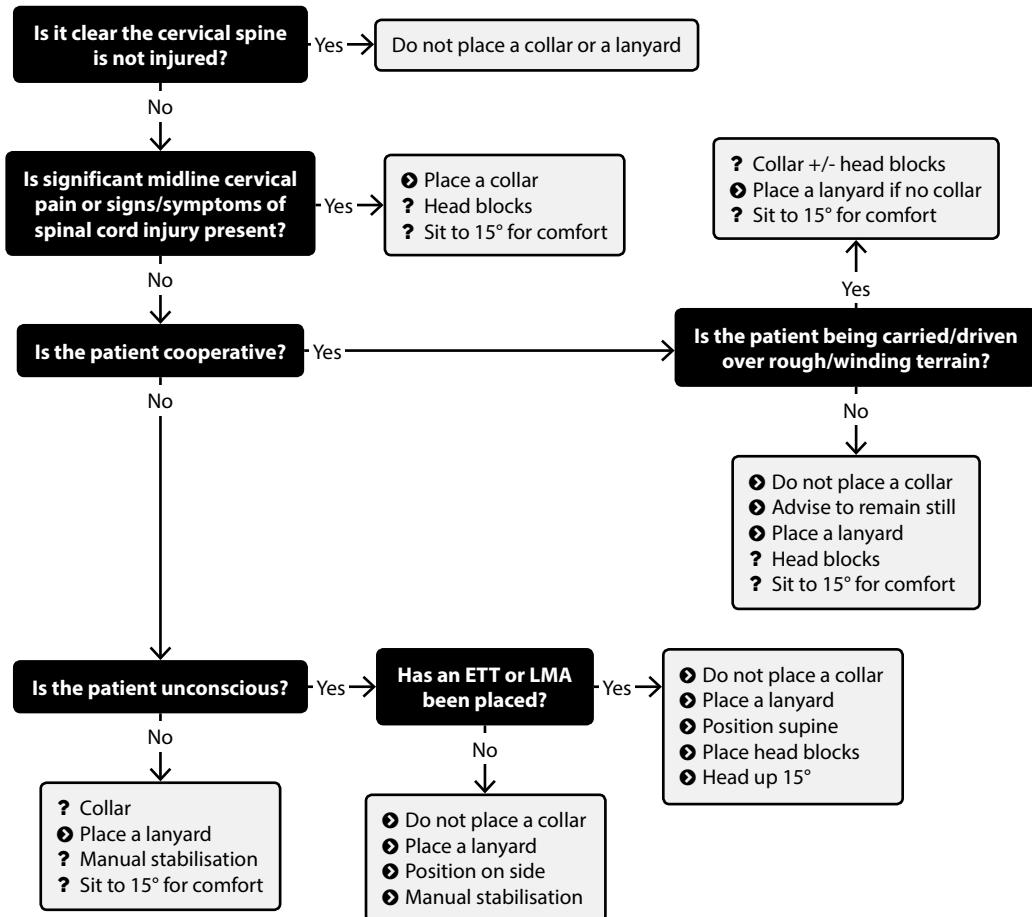
- IV access and administer fentanyl IV
- Ketamine IV for dissociation
- Longitudinal traction on limb with counter traction above the injury site

An attempt to relocate a dislocated hip must not occur without seeking clinical advice

4.16 Spinal cord injury



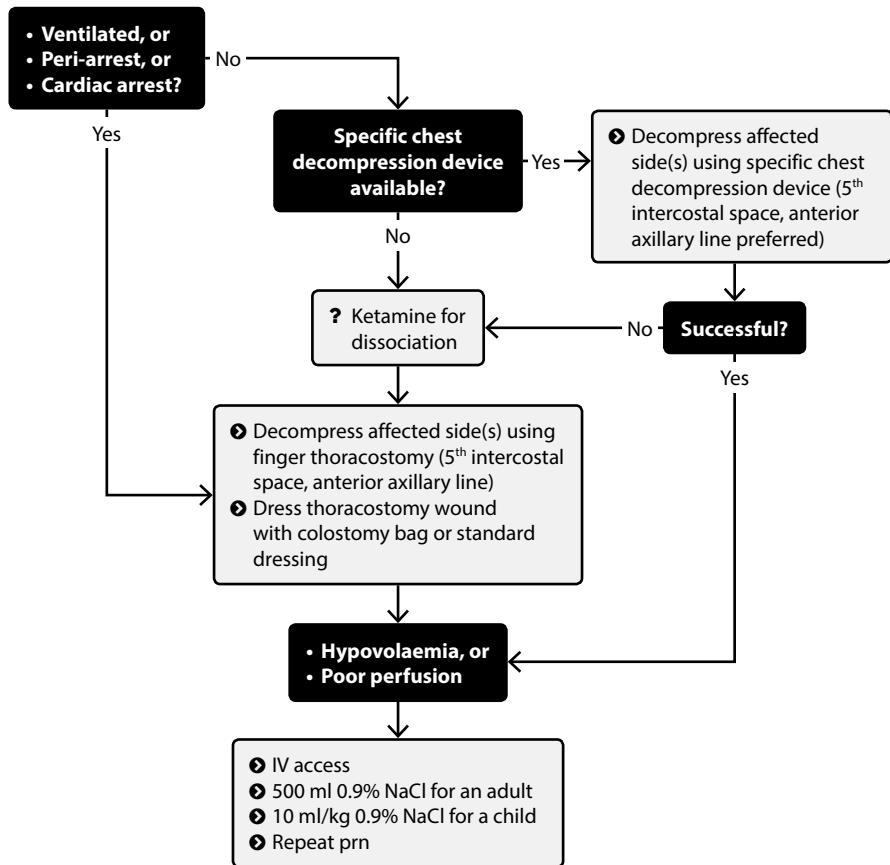
4.17 Cervical spine immobilisation



Note

⚠ If no access to head blocks, use rolled towels as an alternative.

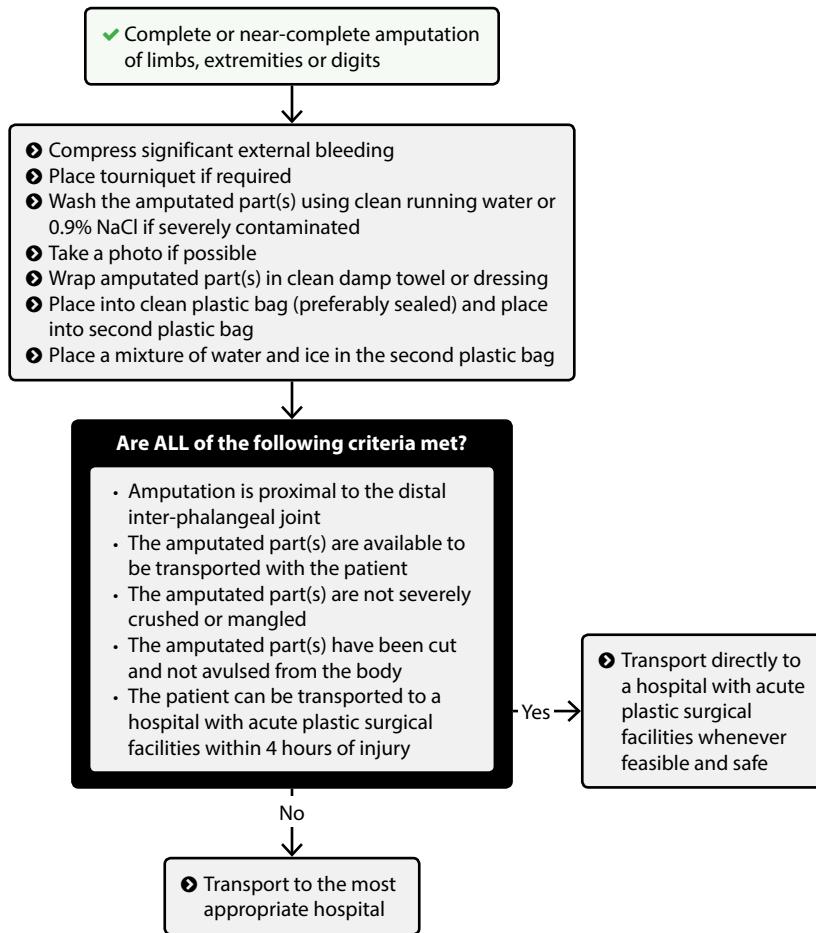
4.18 Tension pneumothorax



Note

- ⚠ Decompress in the 2nd intercostal space in the midclavicular line if the preferred site for chest decompression using a device is not feasible.
- ⚠ Transport (if feasible and safe) to a major trauma hospital if tension pneumothorax is secondary to trauma.

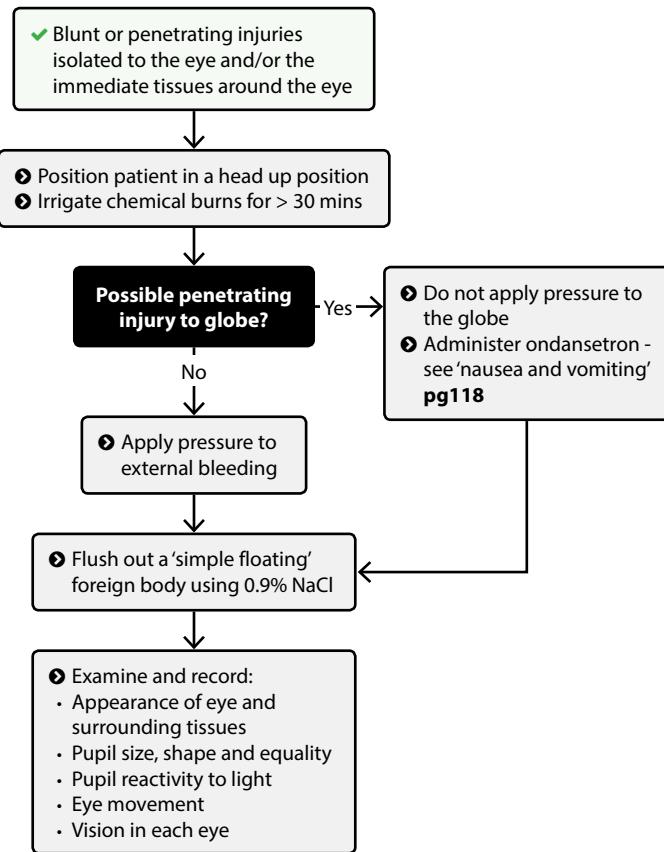
4.19 Amputation



Note

- ⚠ Do not allow the part(s) to come into direct contact with ice or prolonged direct contact with water.
 - ⚠ Provide as much notification prior to arrival as possible.
 - ⚠ Text or email the photo to receiving hospital staff, via the Clinical Desk if possible.

4.20 Eye injuries



4.20 Eye injuries



RED FLAGS - Must be seen in an ED

- Penetration or possible penetration of globe
- Lacerations of eyelid
- Deep and/or severe pain
- Hyphaema
- Retrobulbar haematoma
- Chemical injury
- New reduction in vision
- Abnormal pupillary light reflex
- Swelling of eyelids preventing full examination
- Reduced movement



ORANGE FLAGS - Must be seen in primary care or an ED

- Suspected foreign body
- Sensation of foreign body after removal
- Suspected corneal abrasion



GREEN FLAGS - Usually suitable for self-care advice

- Subconjunctival haemorrhage with otherwise normal findings
- Bruising of soft tissues around eye, with/without subconjunctival haemorrhage, with otherwise normal findings

5.1 Agitated delirium

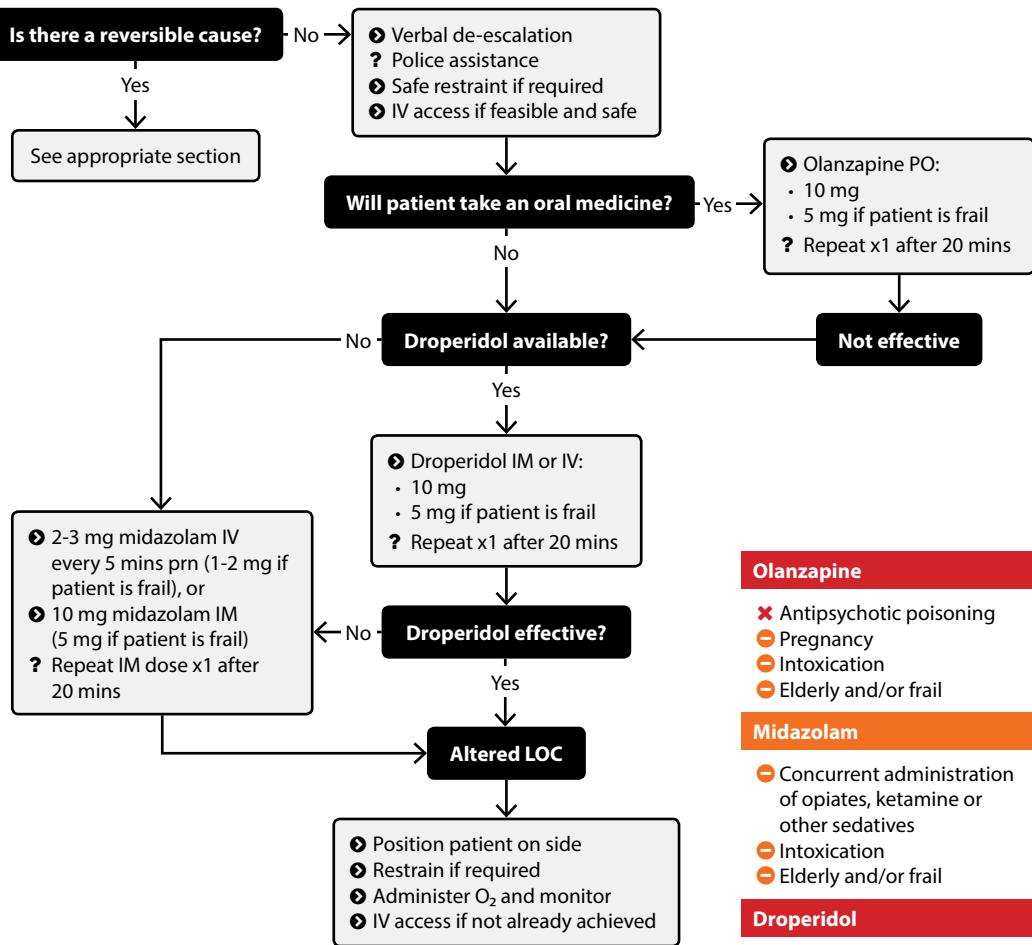
Determining the level of risk to safety requires clinical judgement that takes into account the risk to the patient and to personnel. This table should be used in conjunction with the 'agitated delirium' flow charts on the next pages.

Determining the level of risk to safety

MILD TO MODERATE	SEVERE TO LIFE-THREATENING
<p>Signs include, but are not limited to:</p> <ul style="list-style-type: none">• Verbally aggressive.• Actions not involving immediate risk of serious harm to personnel, for example pushing or grabbing.• Pulling at equipment.• Trying to climb off the stretcher.• Agitation preventing control of moderate external bleeding.	<p>Signs include, but are not limited to:</p> <ul style="list-style-type: none">• Dangerous physical aggression.• Wielding a weapon.• Actions involving immediate risk of serious harm to personnel, for example punching or kicking.• Destruction of physical surroundings.• Trying to get out of a moving ambulance.• Agitation preventing control of severe or life-threatening external bleeding.



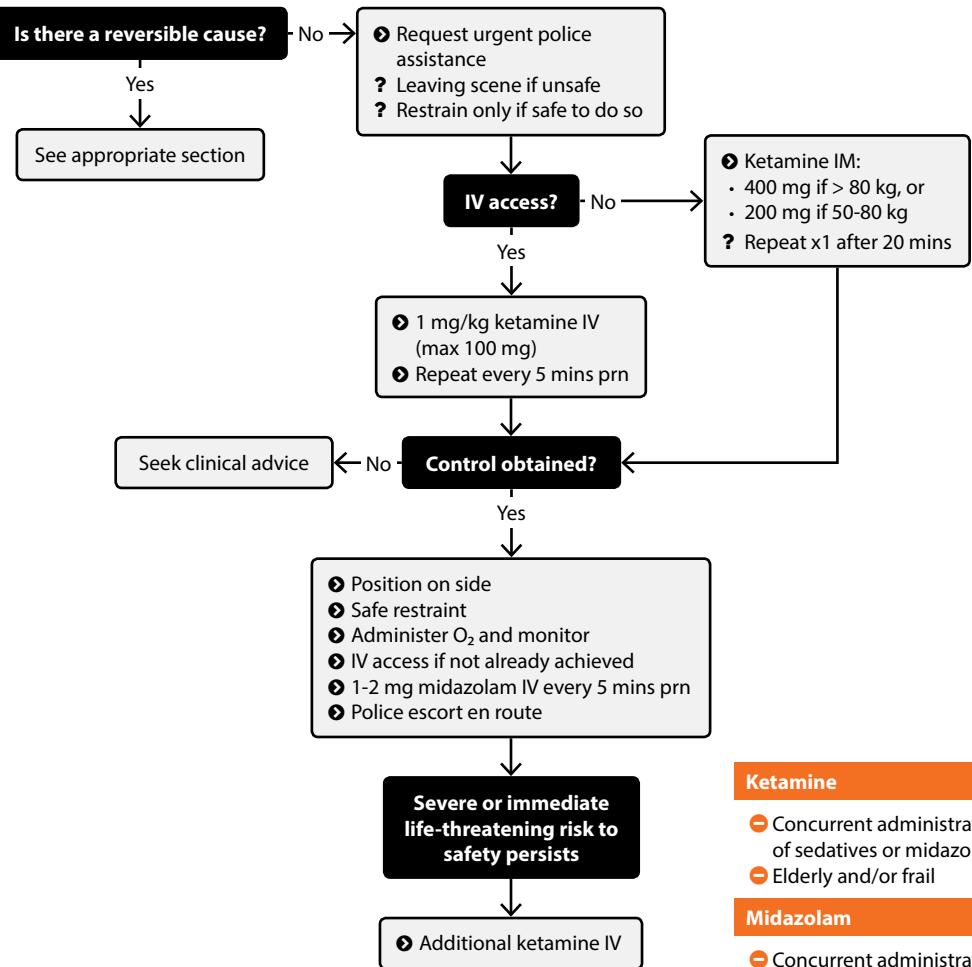
5.1 Agitated delirium - mild to moderate risk



Note

⚠ Seek clinical advice if the patient is aged less than 12 years.

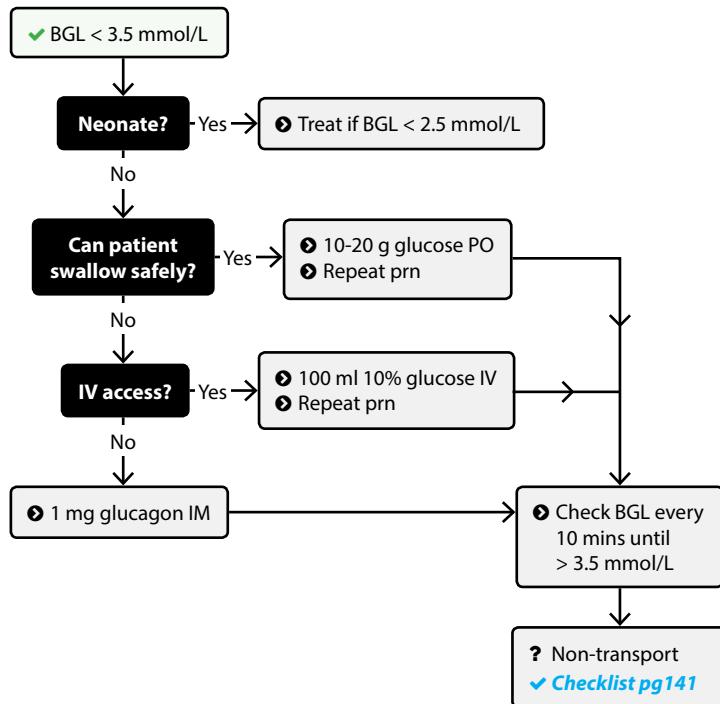
5.1 Agitated delirium - severe to immediately life-threatening risk



Note

⚠ Seek clinical advice if the patient is aged less than 12 years.

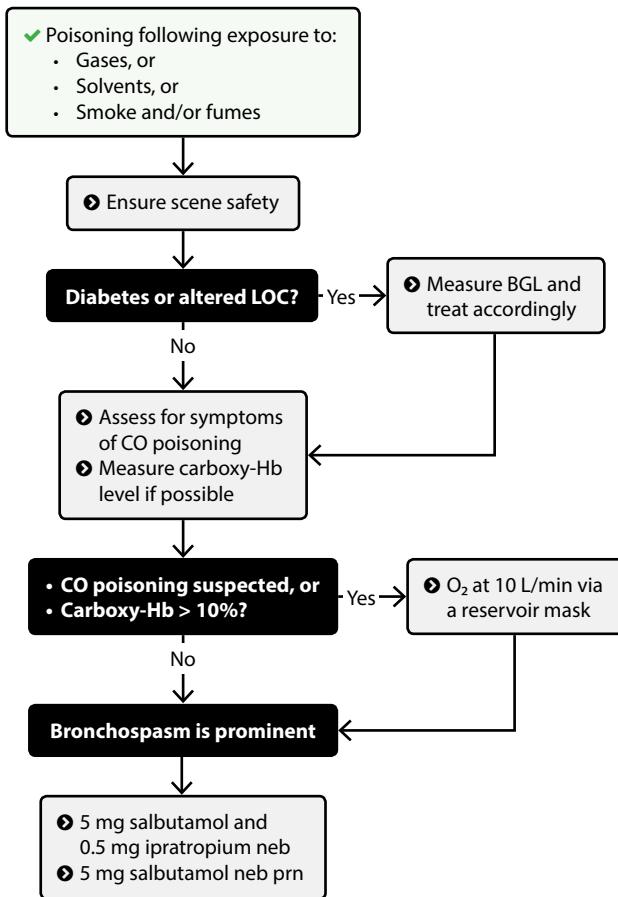
5.3 Hypoglycaemia



Note

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children **pg79**.

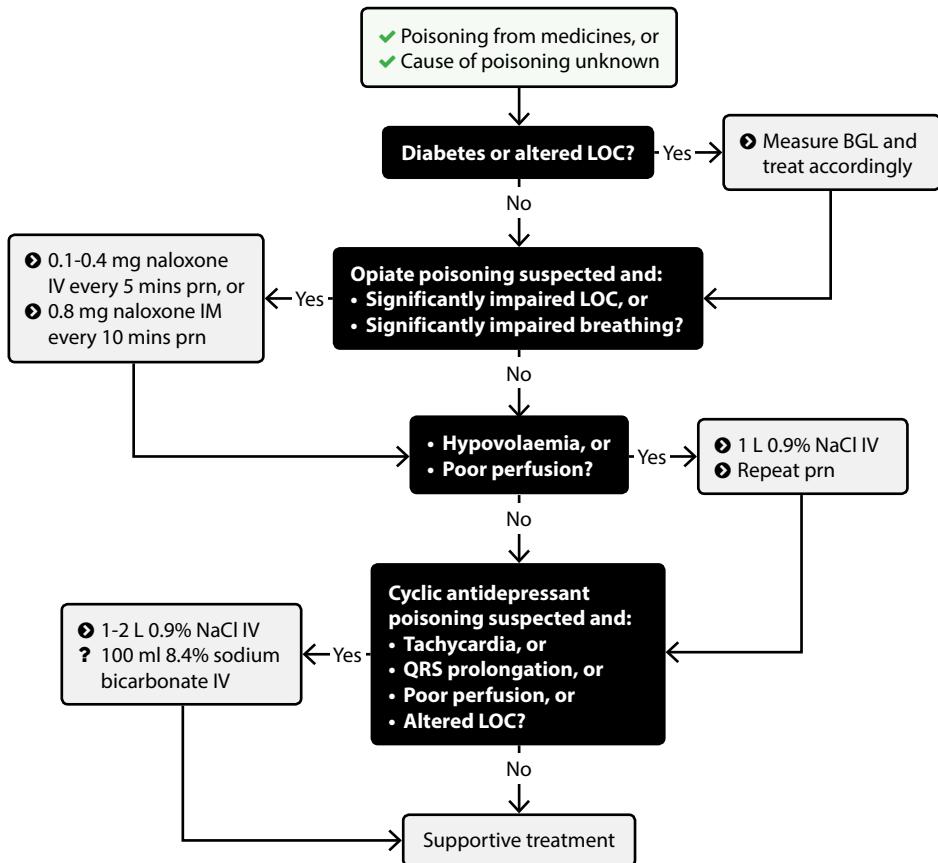
5.4 Poisoning from gases



Note

- ⚠ Request backup for RSI if the patient has a GCS < 10 with poor airway and/or poor breathing, or agitation causing a severe to immediately life-threatening risk to safety.
- ⚠ In the absence of suspected CO poisoning, most patients should not require transport.

5.5 Poisoning from medicines

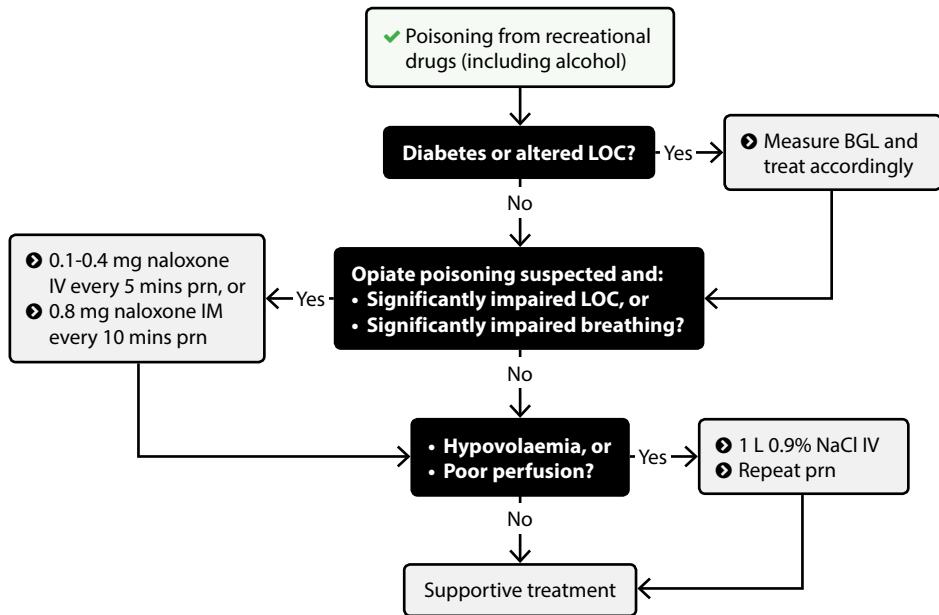


Note

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg 79.

⚠ Request backup for RSI if the patient has a GCS < 10 with poor airway and/or poor breathing, or agitation causing a severe to immediately life-threatening risk to safety.

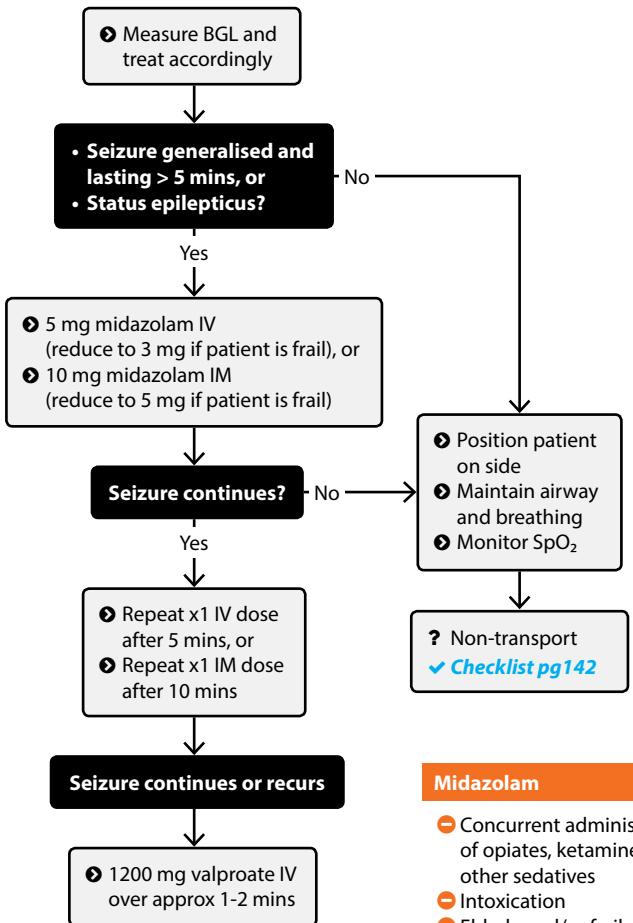
5.6 Poisoning from recreational drugs



Note

- ⚠️ All doses described are for adults only, refer to the paediatric drug dose tables for children **pg 79**.
- ⚠️ Request backup for RSI if the patient has a GCS < 10 with poor airway and/or poor breathing, or agitation causing a severe to immediately life-threatening risk to safety.

5.8 Seizures



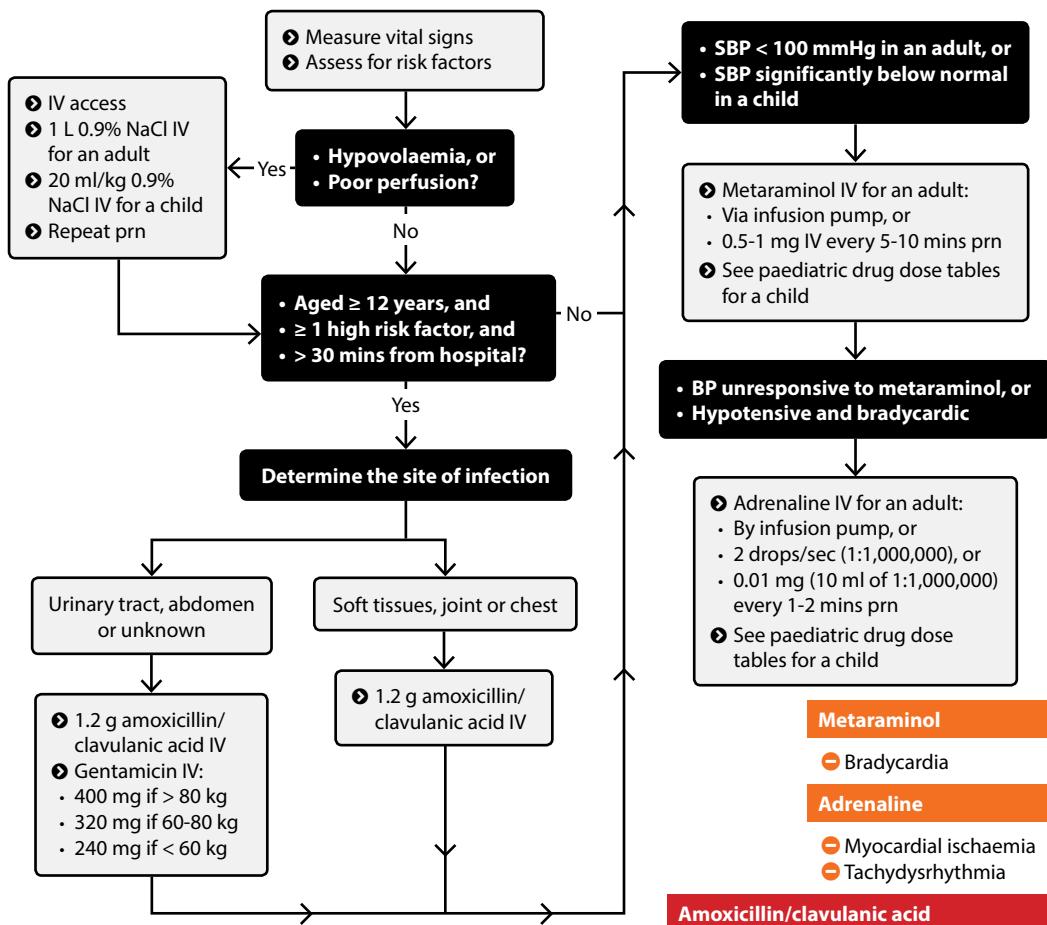
Note

- All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.
- Backup from an ICP must be requested if more than one dose of midazolam is administered.
- Request backup for RSI if the patient has severe airway obstruction or status epilepticus.

6.2 Sepsis risk factors for patients aged ≥ 12 years

HIGH RISK FACTORS		
<p>History or CNS examination</p> <ul style="list-style-type: none"> Objective evidence of new onset of altered mental status. Known neutropenia. <p>Skin</p> <ul style="list-style-type: none"> Mottled or ashen. Cyanosis of skin, lips, tongue. Petechiae or purpura. 	<p>Circulation and hydration</p> <ul style="list-style-type: none"> HR $> 130/\text{min}$. Not passed urine last 18 hrs. If catheterised, passing $< 0.5 \text{ ml/kg}$ of urine per hr. <p>Blood pressure</p> <ul style="list-style-type: none"> SBP $\leq 90 \text{ mmHg}$. SBP $> 40 \text{ mmHg}$ below known normal. 	<p>Respiratory</p> <ul style="list-style-type: none"> RR $\geq 25/\text{min}$. New need for oxygen via reservoir mask to maintain SpO₂ $> 92\%$ (or $> 88\%$ in known COPD).
MEDIUM RISK FACTORS		
<p>History or CNS examination</p> <ul style="list-style-type: none"> History from family/ caregivers of new onset of altered mental status. History of acute deterioration of functional ability. Impaired immune system (illness or drugs including oral steroids). Trauma, surgery or invasive procedures in last six weeks. 	<p>Circulation and hydration</p> <ul style="list-style-type: none"> HR 91-130/min New onset dysrhythmia. Not passed urine last 12-18 hrs. If catheterised, passing $0.5\text{-}1 \text{ ml/kg}$ of urine per hr. <p>Skin</p> <ul style="list-style-type: none"> Signs of potential infection, including redness, swelling or discharge at surgical site or breakdown of wound. 	<p>Respiratory</p> <ul style="list-style-type: none"> RR 21-24/min. <p>Blood pressure</p> <ul style="list-style-type: none"> SBP 91-100 mmHg. <p>Temperature</p> <ul style="list-style-type: none"> Tympanic temp $< 36^\circ\text{C}$.
LOW RISK FACTORS		
<p>History or CNS examination</p> <ul style="list-style-type: none"> Normal mental status. 	<p>Circulation and hydration</p> <ul style="list-style-type: none"> HR $\leq 90/\text{min}$. Passed urine last 12 hrs. If catheterised, passing $> 1 \text{ ml/kg}$ of urine per hr. 	<p>Respiratory</p> <ul style="list-style-type: none"> RR $\leq 20/\text{min}$. <p>Blood pressure</p> <ul style="list-style-type: none"> SBP $> 100 \text{ mmHg}$.

6.2 Sepsis



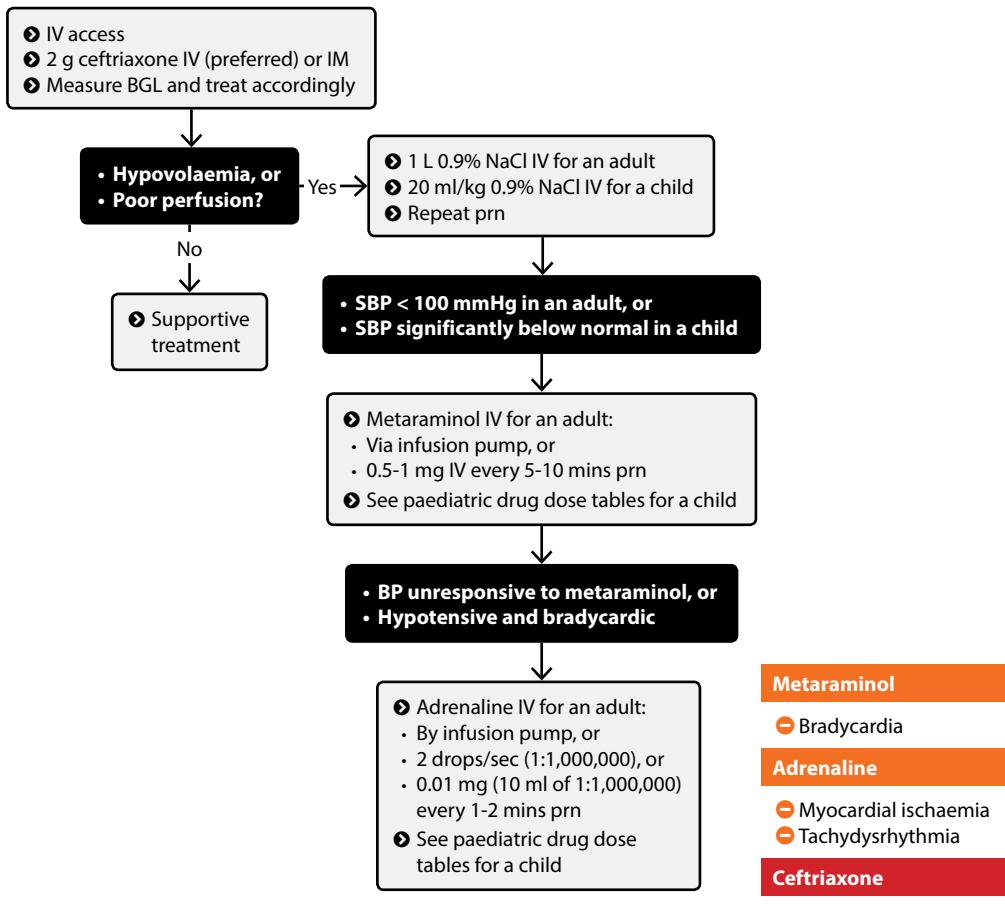
Amoxicillin/clavulanic acid

- ✗ Anaphylaxis to betalactam antibiotics
- ✗ Known severe allergy to penicillins

Gentamicin

- ✗ Pregnancy

6.3 Meningococcal septicaemia



Note

- ⚠ The ceftriaxone dose is for adults only, refer to the paediatric drug dose tables for children pg79.
- ⚠ Transport the patient to a hospital with intensive care facilities whenever feasible and safe.

6.4 Cellulitis



RED FLAGS

- Signs of shock.
- Severe pain, oedema or blistering.
- Skin necrosis.
- Inability to mobilise.
- Rigors.
- Neutropenia.
- Chemotherapy within the last four weeks.
- Temperature $> 40^{\circ}\text{C}$.
- An associated abscess.
- Involves $> 5\%$ of body surface area.
- Rapidly spreading.
- Involves the face, hands or genitals.
- Diabetes on insulin.
- Significant lymphangitis.
- A hot or painful joint.
- Associated with a bite wound.
- Frail, elderly or significant comorbidities.
- New onset of an altered mental status.

- If no red flags are present the patient should be given a clear recommendation to be seen in primary care (preferably by their own GP) within 12 hours.
- If the patient is not being directly referred or transported to a medical facility, consider administering a single dose of amoxicillin/clavulanic acid IV if it is possible there may be a delay in the patient seeing a doctor:
 - 1.2 g IV for an adult.
 - Wait a minimum of 20 minutes before leaving, to ensure there are no signs or symptoms of severe allergy.

Note

⚠ All doses described are for adults only. Seek clinical advice if the patient is a child.

6.5 Chest infection



RED FLAGS

- Signs of shock.
- Tachypnoea.
- New onset of an altered mental status.
- $\text{SpO}_2 < 94\%$ on air (unless normal for the patient).
- Inability to mobilise normally.
- Severe pleuritic chest pain.
- Rigors.
- Neutropenia.
- Chemotherapy within the last four weeks.
- Temperature $> 40^\circ\text{C}$.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- Temperature 38-40°C.
- Mild to moderate pleuritic chest pain.
- Aged ≥ 65 years.
- COPD.
- Purulent sputum.
- Immunocompromised (for example on steroids or immunotherapy).



GREEN FLAGS

- Temperature less than 38°C.
- Productive cough but sputum not purulent.
- Aged ≤ 64 years.
- Normal vital signs.
- Normal mobility.

6.6 Influenza



RED FLAGS

- Signs of shock.
- Tachypnoea.
- New onset of an altered mental status.
- $\text{SpO}_2 < 94\%$ on air (unless normal for the patient).
- Inability to mobilise normally.
- Severe pleuritic chest pain.
- Rigors.
- Neutropenia.
- Chemotherapy within the last four weeks.
- Temperature $> 40^\circ\text{C}$.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- Aged ≥ 65 years.
- Pregnant.
- Immunocompromised (for example on steroids or immunotherapy).
- Ischaemic heart disease.
- COPD.
- Diabetes.
- Severe obesity.
- Purulent sputum.



GREEN FLAGS

- Productive cough but sputum not purulent.
- Aged ≤ 64 years.
- Normal vital signs.
- Normal mobility.

6.7 Lower urinary tract infection (UTI)



RED FLAGS

- Signs of shock.
- Flank/loin pain.
- Severe pain.
- Significant haematuria.
- Urinary retention.
- Inability to mobilise normally.
- Rigors.
- Neutropenia.
- Chemotherapy within the last four weeks.
- Temperature $> 40^{\circ}\text{C}$.
- New onset of an altered mental status.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- Dysuria.
- Temperature 38-40°C.
- Moderate pain.
- Male.
- Aged < 15 years.
- Aged ≥ 65 years.
- Pregnancy.
- Immunocompromised (for example on steroids or immunotherapy).



GREEN FLAGS

- Aged 15-64 years.
- Normal vital signs.
- Normal mobility.
- Temperature $< 38^{\circ}\text{C}$.
- Mild pain.

6.8 Sore throat



RED FLAGS

- Signs of airway compromise.
- Signs of shock.
- Severe pain.
- Drooling or severe difficulty swallowing.
- Abnormal speech.
- Rigors.
- Neutropenia.
- Chemotherapy within the last four weeks.
- Temperature $> 40^{\circ}\text{C}$.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- Onset over less than a day.
- Temperature $38\text{--}40^{\circ}\text{C}$.
- Moderate pain.
- Aged < 15 years.
- Aged 16–45 years with any of the following features:
 - a) Māori or Pacific People, or
 - b) Live in a low socioeconomic area of the North Island, or
 - c) Have a past history, or family history of rheumatic fever.



GREEN FLAGS

- Mild pain.
- Temperature $< 38^{\circ}\text{C}$.

6.9 Infectious disease precautions

INFECTIOUS DISEASE	LEVEL OF PPE REQUIRED	LEVEL OF VEHICLE CLEANING REQUIRED
Chicken pox	Airborne	Additional
Clostridium difficile diarrhoea	Contact	Standard
ESBL	Contact	Additional
Gastroenteritis, type not specified	Contact	Standard
Hepatitis A	Contact	Standard
Hepatitis B	Standard	Standard
Hepatitis C	Standard	Standard
HIV	Standard	Standard
Influenza	Droplet	Standard
Measles	Airborne	Standard
Meningitis, type not specified	Standard	Standard
Meningococcal disease	Droplet	Standard
MRSA	Contact	Additional
MRO, type not specified	Contact	Additional
Mumps	Droplet	Standard
Norovirus with vomiting	Airborne	Additional
Norovirus without vomiting	Contact	Additional
Pneumonia, type not specified	Standard	Standard
Rotavirus	Contact	Standard
Rubella	Airborne	Standard
Tuberculosis	Airborne	Standard
VRE	Contact	Additional
Whooping cough	Droplet	Standard

6.9 PPE levels

LEVEL OF PPE	MINIMUM REQUIRED PPE AND ACTIONS
Standard	<ul style="list-style-type: none">• Gloves for anticipated contact with body fluids.• Change contaminated gloves as soon as possible.• Eye protection for anticipated body fluid splash.• Consider overalls/gown and/or an apron for significant body fluid exposure.• Hand washing and drying or alcohol hand rub, before and after patient contact.
Contact	<ul style="list-style-type: none">• Standard level PPE plus gloves and overalls/gown for direct contact with the patient or their immediate surroundings.
Droplet	<ul style="list-style-type: none">• Standard level PPE plus a surgical mask for the patient and personnel.• Consider overalls/gown if within two metres of the patient if the patient is coughing significantly and unable to wear a mask.• N95 mask for personnel within two metres of the patient during procedures that may aerosolise droplets. For example when nebulising medicines.
Airborne	<ul style="list-style-type: none">• Standard PPE plus an N95 mask for the patient and personnel.• Wear overalls/gown and/or an apron for direct contact if the patient has norovirus or chicken pox.

6.9 Vehicle cleaning and disinfection

LEVEL OF CLEANING AND DISINFECTION	MINIMUM ACTIONS
Standard	<ul style="list-style-type: none">• Open all vehicle doors for 10 minutes with nobody in the vehicle, if the infectious disease was airborne.• Wear gloves.• Decontaminate and disinfect surfaces contaminated with body fluid:<ol style="list-style-type: none">a) Decontaminate using a cleaning solution, removing all visible soiling.b) Wipe with a disinfectant and allow to dry.• Remove used linen.• Wipe down the stretcher and all surfaces touched by the patient with disinfectant and allow to dry.• Wipe down all surfaces in the back of the vehicle touched by personnel (such as the monitor) with an approved disinfectant wipe and allow to dry.• Clean the floor if visibly dirty.• Replace linen.• Wash and dry hands.• Once disinfected surfaces are dry, the vehicle may be used for other patients.
Additional	<ul style="list-style-type: none">• Standard level cleaning and disinfection plus:<ul style="list-style-type: none">• Wear gloves and overalls/gown and/or an apron.• Wipe down all interior surfaces (including in the front of the vehicle) that the patient or personnel may have touched, with disinfectant and allow to dry.• Clean the floor.• Once disinfected surfaces are dry, the vehicle may be used for other patients.



7.1 The paediatric assessment triangle

Activity

Movement, interaction, tone

Abnormal: Inactive, lethargic, abnormal or absent cry or speech, failure to interact with people or objects, floppy.

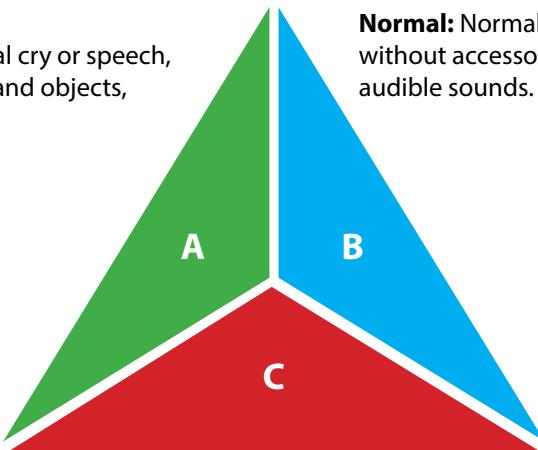
Normal: Active, normal cry or speech, interacts with people and objects, good muscle tone.

Breathing

Respiratory rate, work of breathing

Abnormal: Tachypnoea, nasal flaring, indrawing, use of accessory muscles, grunting.

Normal: Normal regular breathing without accessory muscle use or audible sounds.



Circulation

Heart rate, perfusion

Abnormal: Tachycardia, mottled skin, pale, cold, slow capillary refill time.

Normal: Normal heart rate, normal skin colour, warm, fast capillary refill time.

7.2 Paediatric equipment and drug doses

ESTIMATED WEIGHT (kg)

Under 1 year old	5
1-10 years	(Age in years + 4) x 2
11-14 years	Age in years x 3

CUFFED ENDOTRACHEAL TUBE (ETT) size (mm)

Newborn to 1 year	3 - 4
1 year and over	(Age in years ÷ 4) + 3.5

ENDOTRACHEAL TUBE LENGTH AT LIPS (cm)

Newborn	6 + weight in kg
Under 1 year	ETT size x 3
1 year and over	(Age in years ÷ 2) + 12

DEFIBRILLATION ENERGY

Initial and subsequent	5 J/kg
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Paediatric vital signs

AGE	HR	RR	BP (sys)
Newborn	120-180	30-60	60-90
1-11 months	100-160	30-50	90-105
1-4 years	80-110	24-40	95-105
5-12 years	65-100	18-30	100-110
> 12 years	60-90	12-16	110-130

Infant Glasgow Coma Scale

BEST EYE OPENING	
Spontaneously	4
To voice or touch	3
To pain or pressure	2
None	1

BEST VERBAL RESPONSE	
Smiles, babbles, coos	5
Cries normally	4
Cries only to pain or pressure	3
Moans or grunts	2
None	1

BEST MOTOR RESPONSE	
Normal spontaneous movement	6
Localises or has purposeful movement	5
Withdraws from pain or normal flexion	4
Abnormal (spastic) flexion	3
Extension or rigid	2
None	1

Drug dilution

1 ADRENALINE IV 1:10,000 (0.1 mg/ml)

- Draw up 1 ml of adrenaline from a 1 mg/ml ampoule.
- Dilute to a total volume of 10 ml using 0.9% sodium chloride.
- Administer the volume from the tables as an IV bolus.

2 ADRENALINE IV 1:1,000,000 (0.001 mg/ml)

- Use a 1 litre bag of 0.9% sodium chloride.
- Add 1 ml of adrenaline from a 1 mg/ml ampoule.
- Shake well and label.
- Administer the volume from the tables as an IV bolus.
- An IV infusion may be administered if aged 5 years or older.

3 CEFTRIAXONE IV 200 mg/ml

- Add approximately 4ml of 0.9% sodium chloride to a 2 g ampoule of ceftriaxone powder and shake until dissolved.
- Draw up the contents of the ampoule.
- Dilute to a total volume of 10 ml using 0.9% sodium chloride.
- Discard unrequired drug and administer the volume from the tables as a slow IV push over 1-2 minutes, preferably into a running line.

4 CEFTRIAXONE IM 400 mg/ml

- Add 4 ml of 0.9% sodium chloride to a 2 g ampoule of ceftriaxone powder and shake until dissolved. The total volume will be 5 ml.
- Draw up 2.5 ml in each of two syringes.
- Discard unrequired drug volume and administer one syringe into each lateral thigh. If this site is not suitable use each lateral upper arm.

5 FENTANYL IV 10 mcg/ml (weight rounded up to 30 kg or more)

- Draw up 2 ml of fentanyl from a 100 mcg/2 ml ampoule.
- Dilute to a total volume of 10 ml using 0.9% sodium chloride.
- Administer the volume from the tables as an IV bolus.

6 FENTANYL IV 1 mcg/ml (weight rounded up to 20 kg or less)

- Use a 100 ml bag of 5% glucose.
- Add 2 ml of fentanyl from a 100 mcg/2 ml ampoule.
- Shake well and label.
- Administer the volume from the tables as an IV bolus.

7 FENTANYL AND KETAMINE IV FOR POST INTUBATION SEDATION

- Draw up 200 mcg of fentanyl (two 100 mcg/2 ml ampoules) and 200 mg of ketamine (one 200 mg/2 ml ampoule), in the same syringe.
- Dilute to a total volume of 20 ml. This solution contains 10 mcg/ml of fentanyl and 10 mg/ml of ketamine.
- Administer the volume from the tables as an IV bolus.

8 FENTANYL AND MIDAZOLAM IV FOR POST INTUBATION SEDATION

- Draw up 100 mcg of fentanyl (one 100 mcg/2 ml ampoule) and 10 mg of midazolam (2 ml from a 15 mg/3 ml ampoule), in the same syringe.
- Dilute to total volume of 10 ml. This solution contains 10 mcg/ml of fentanyl and 1 mg/ml of midazolam.
- Administer the volume from the tables as an IV bolus.

9 KETAMINE IV FOR ANALGESIA 1 mg/ml

- Draw up 1 ml of ketamine from a 200 mg/2 ml ampoule.
- Place into a 100 ml bag of 5% glucose. This solution contains 1 mg/ml.
- Draw up the volume from the tables and dilute this further to a total volume of 20 ml using 0.9% sodium chloride.
- Administer IV over approximately 15 minutes.

10 KETAMINE IV FOR DISSOCIATION 10 mg/ml

- Draw up 1 ml of ketamine from a 200 mg/2 ml ampoule.
- Dilute to a total volume of 10 ml using 0.9% sodium chloride.
- Administer the volume from the tables as an IV bolus.

11

MAGNESIUM IV 1 mmol/ml

- Draw up 5 ml of magnesium from a 10 mmol/5 ml ampoule.
- Dilute to a total volume of 10 ml using 0.9% sodium chloride.
- Discard unrequired drug and administer the volume from the tables IV over approximately 15 minutes, preferably into a running line.

12

METARAMINOL IV 0.1 mg/ml

- Use a 100 ml bag of 5% glucose and withdraw 10 ml from the bag.
- Add 10 ml from a pre-filled syringe of 10 mg/10 ml metaraminol.
- Shake well and label.
- Administer the volume from the tables as an IV bolus.

13

MIDAZOLAM IV 1 mg/ml

- Draw up 1 ml of midazolam from a 15 mg/3 ml ampoule.
- Dilute to a total volume of 5 ml using 0.9% sodium chloride.
- Discard unrequired drug and administer the volume from the tables as an IV bolus.

14

NALOXONE IV 0.1 mg/ml

- Draw up 1 ml of naloxone from a 0.4 mg/ml ampoule.
- Dilute to a total volume of 4 ml using 0.9% sodium chloride.
- Administer the volume from the tables as an IV bolus.

15

VALPROATE IV 100 mg/ml

- Add 4 ml of 0.9% sodium chloride to each 400 mg ampoule of valproate powder and shake until dissolved. This will give a 100 mg/ml solution.
- Draw up the volume from the tables and dilute this further to a total volume of 10-20 ml using 0.9% sodium chloride.
- Administer as a slow IV push over 1-2 minutes, preferably into a running line.

5 kg / less than 1 year**DOSE****VOLUME****CARDIAC ARREST**

Adrenaline IV	0.05 mg	0.5 ml (1:10,000)	1
Amiodarone IV	25 mg	0.5 ml (undiluted)	
Manual defibrillation	25	Joules	
LMA	Size 1 (< 5 kg)	Cuff inflation 4 ml	
ETT (cuffed)	Size 3	9 cm length at lips	

OTHER DRUGS

Adrenaline IV (not cardiac arrest)	0.001 mg	1 ml (1:1,000,000)	2
Adrenaline IM	0.05 mg	0.5 ml (1:10,000)	1
Adrenaline IN (epistaxis)	-	-	
Ceftriaxone IV	300 mg	1.5 ml (200 mg/ml)	3
Ceftriaxone IM	300 mg	0.75 ml (400 mg/ml)	4
Fentanyl IV (analgesia)	1-5 mcg	1-5 ml (1 mcg/ml)	6
Fentanyl IM	5 mcg	0.1 ml (undiluted)	
Fentanyl IN (first dose)	10 mcg	0.2 ml (undiluted)	
Fentanyl IN (subsequent doses)	5 mcg	0.1 ml (undiluted)	
Fentanyl/ketamine IV (post intubation)	5 mcg/5 mg	0.5 ml	7
Fentanyl/midazolam IV (post intubation)	2.5 mcg/0.25 mg	0.25 ml	8
Glucagon IM	0.5 mg	0.5 ml (undiluted)	
10% glucose IV	2 ml/kg	10 ml	
Ibuprofen liquid PO	50 mg	2.5 ml (20 mg/ml)	
Ibuprofen tablet PO	-	-	

5 kg / less than 1 year



DOSE

VOLUME

Ketamine IV (analgesia)	-	-
Ketamine IV (dissociation)	-	-
Ketamine IM/PO (analgesia)	-	-
Ketamine IM (dissociation)	-	-
1% lignocaine IO	5 mg	0.5 ml (undiluted)
1% lignocaine SC	15 mg (max)	1.5 ml (max)
Loratadine PO	-	-
Magnesium IV	-	-
Metaraminol IV	0.05-0.1 mg	0.5-1 ml (0.1 mg/ml) ↳ 12
Midazolam IV (seizures)	0.5 mg	0.5 ml (1 mg/ml) ↳ 13
Midazolam IM (seizures)	1 mg	0.2 ml (undiluted)
Naloxone IV	0.05 mg	0.5 ml (0.1 mg/ml) ↳ 14
Naloxone IM	0.1 mg	0.25 ml (undiluted)
Ondansetron IV	-	-
Ondansetron IM	-	-
Paracetamol liquid PO	75 mg	1.5 ml (50 mg/ml)
Paracetamol tablet PO	-	-
Prednisolone PO	5 mg	1 ml (5 mg/ml)
Prednisone PO	-	-
Rocuronium IV	5 mg	0.5 ml (undiluted)
0.75% ropivacaine SC	11.25 mg (max)	1.5 ml (max)
0.9% sodium chloride IV	20 ml/kg	100 ml
Tranexamic acid IV	100 mg	1 ml (undiluted)
Valproate IV	150 mg	1.5 ml (100 mg/ml) ↳ 15

10 kg / 1 year**DOSE****VOLUME****CARDIAC ARREST**

Adrenaline IV	0.1 mg	1 ml (1:10,000)	1
Amiodarone IV	50 mg	1 ml (undiluted)	
Manual defibrillation	50	Joules	
LMA	Size 2 (10-20 kg)	Cuff inflation 10 ml	
ETT (cuffed)	Size 3 or 4	12 cm length at lips	

OTHER DRUGS

Adrenaline IV (not cardiac arrest)	0.002 mg	2 ml (1:1,000,000)	2
Adrenaline IM	0.1 mg	0.1 ml (undiluted)	
Adrenaline IN (epistaxis)	-	-	
Ceftriaxone IV	500 mg	2.5 ml (200 mg/ml)	3
Ceftriaxone IM	500 mg	1.25 ml (400 mg/ml)	4
Fentanyl IV (analgesia)	2-10 mcg	2-10 ml (1 mcg/ml)	6
Fentanyl IM	10 mcg	0.2 ml (undiluted)	
Fentanyl IN (first dose)	20 mcg	0.4 ml (undiluted)	
Fentanyl IN (subsequent doses)	10 mcg	0.2 ml (undiluted)	
Fentanyl/ketamine IV (post intubation)	10 mcg/10 mg	1 ml	7
Fentanyl/midazolam IV (post intubation)	5 mcg/0.5 mg	0.5 ml	8
Glucagon IM	0.5 mg	0.5 ml (undiluted)	
10% glucose IV	2 ml/kg	20 ml	
Ibuprofen liquid PO	100 mg	5 ml (20 mg/ml)	
Ibuprofen tablet PO	100 mg	½ tablet	

10 kg / 1 year



DOSE

VOLUME

Ketamine IV (analgesia)	2.5 mg	2.5 ml (1 mg/ml)	9
Ketamine IV (dissociation)	10 mg	1 ml (10 mg/ml)	10
Ketamine IM/PO (analgesia)	5 mg	0.05 ml (undiluted)	
Ketamine IM (dissociation)	20 mg	0.2 ml (undiluted)	
1% lignocaine IO	10 mg	1 ml (undiluted)	
1% lignocaine SC	30 mg (max)	3 ml (max)	
Loratadine PO	5 mg	½ tablet	
Magnesium IV	-	-	
Metaraminol IV	0.1-0.2 mg	1-2 ml (0.1 mg/ml)	12
Midazolam IV (seizures)	1 mg	1 ml (1 mg/ml)	13
Midazolam IM (seizures)	2 mg	0.4 ml (undiluted)	
Naloxone IV	0.1 mg	1 ml (0.1 mg/ml)	14
Naloxone IM	0.2 mg	0.5 ml (undiluted)	
Ondansetron IV	2 mg	1 ml (undiluted)	
Ondansetron IM	1 mg	0.5 ml (undiluted)	
Paracetamol liquid PO	150 mg	3 ml (50 mg/ml)	
Paracetamol tablet PO	-	-	
Prednisolone PO	10 mg	2 ml (5 mg/ml)	
Prednisone PO	10 mg	½ tablet	
Rocuronium IV	10 mg	1 ml (undiluted)	
0.75% ropivacaine SC	22.5 mg (max)	3 ml (max)	
0.9% sodium chloride IV	20 ml/kg	200 ml	
Tranexamic acid IV	200 mg	2 ml (undiluted)	
Valproate IV	300 mg	3 ml (100 mg/ml)	15

20 kg / 2-5 years**DOSE****VOLUME****CARDIAC ARREST**

Adrenaline IV	0.2 mg	2 ml (1:10,000)	1
Amiodarone IV	100 mg	2 ml (undiluted)	
Manual defibrillation	100	Joules	
LMA	Size 2 (10-20 kg)	Cuff inflation 10 ml	
ETT (cuffed)	Size 4 or 5	15 cm length at lips	

OTHER DRUGS

Adrenaline IV (not cardiac arrest)	0.004 mg	4 ml (1:1,000,000)	2
Adrenaline IM	0.2 mg	0.2 ml (undiluted)	
Adrenaline IN (epistaxis)	0.1 mg	1 ml (1:10,000)	1
Ceftriaxone IV	1 g	5 ml (200 mg/ml)	3
Ceftriaxone IM	1 g	2.5 ml (400 mg/ml)	4
Fentanyl IV (analgesia)	5-20 mcg	5-20 ml (1 mcg/ml)	6
Fentanyl IM	20 mcg	0.4 ml (undiluted)	
Fentanyl IN (first dose)	40 mcg	0.8 ml (undiluted)	
Fentanyl IN (subsequent doses)	20 mcg	0.4 ml (undiluted)	
Fentanyl/ketamine IV (post intubation)	20 mcg/20 mg	2 ml	7
Fentanyl/midazolam IV (post intubation)	10 mcg/1 mg	1 ml	8
Glucagon IM	1 mg	1 ml (undiluted)	
10% glucose IV	2 ml/kg	40 ml	
Ibuprofen liquid PO	150 mg	7.5 ml (20 mg/ml)	
Ibuprofen tablet PO	100 mg	½ tablet	

20 kg / 2-5 years

DOSE

VOLUME



Ketamine IV (analgesia)	5 mg	5 ml (1 mg/ml)	9
Ketamine IV (dissociation)	20 mg	2 ml (10 mg/ml)	10
Ketamine IM/PO (analgesia)	10 mg	0.1 ml (undiluted)	
Ketamine IM (dissociation)	40 mg	0.4 ml (undiluted)	
1% lignocaine IO	20 mg	2 ml (undiluted)	
1% lignocaine SC	60 mg (max)	6 ml (max)	
Loratadine PO	5 mg	½ tablet	
Magnesium IV	4 mmol	4 ml (1 mmol/ml)	11
Metaraminol IV	0.2-0.4 mg	2-4 ml (0.1 mg/ml)	12
Midazolam IV (seizures)	2 mg	2 ml (1 mg/ml)	13
Midazolam IM (seizures)	4 mg	0.8 ml (undiluted)	
Naloxone IV	0.1-0.2 mg	1-2 ml (0.1 mg/ml)	14
Naloxone IM	0.4 mg	1 ml (undiluted)	
Ondansetron IV	4 mg	2 ml (undiluted)	
Ondansetron IM	2 mg	1 ml (undiluted)	
Paracetamol liquid PO	250 mg	5 ml (50 mg/ml)	
Paracetamol tablet PO	250 mg	½ tablet	
Prednisolone PO	20 mg	4 ml (5 mg/ml)	
Prednisone PO	20 mg	1 tablet	
Rocuronium IV	20 mg	2 ml (undiluted)	
0.75% ropivacaine SC	45 mg (max)	6 ml (max)	
0.9% sodium chloride IV	20 ml/kg	400 ml	
Tranexamic acid IV	400 mg	4 ml (undiluted)	
Valproate IV	600 mg	6 ml (100 mg/ml)	15

30 kg / 6-10 years**DOSE****VOLUME****CARDIAC ARREST**

Adrenaline IV	0.3 mg	3 ml (1:10,000)	• 1
Amiodarone IV	150 mg	3 ml (undiluted)	
Manual defibrillation	150	Joules	
LMA	Size 3 (30-50 kg)	Cuff inflation 20 ml	
ETT (cuffed)	Size 5 or 6	17 cm length at lips	

OTHER DRUGS

Adrenaline IV (not cardiac arrest)	0.006 mg	6 ml (1:1,000,000)	• 2
Adrenaline IM	0.3 mg	0.3 ml (undiluted)	
Adrenaline IN (epistaxis)	0.1 mg	1 ml (1:10,000)	• 1
Ceftriaxone IV	1.5 g	7.5 ml (200 mg/ml)	• 3
Ceftriaxone IM	1.5 g	3.75 ml (400 mg/ml)	• 4
Fentanyl IV (analgesia)	10-30 mcg	1-3 ml (10 mcg/ml)	• 5
Fentanyl IM	30 mcg	0.6 ml (undiluted)	
Fentanyl IN (first dose)	60 mcg	1.2 ml (undiluted)	
Fentanyl IN (subsequent doses)	30 mcg	0.6 ml (undiluted)	
Fentanyl/ketamine IV (post intubation)	30 mcg/30 mg	3 ml	• 7
Fentanyl/midazolam IV (post intubation)	15 mcg/1.5 mg	1.5 ml	• 8
Glucagon IM	1 mg	1 ml (undiluted)	
10% glucose IV	2 ml/kg	60 ml	
Ibuprofen liquid PO	200 mg	10 ml (20 mg/ml)	
Ibuprofen tablet PO	200 mg	1 tablet	

30 kg / 6-10 years

DOSE

VOLUME



Ketamine IV (analgesia)	8 mg	8 ml (1 mg/ml)	9
Ketamine IV (dissociation)	30 mg	3 ml (10 mg/ml)	10
Ketamine IM/PO (analgesia)	15 mg	0.15 ml (undiluted)	
Ketamine IM (dissociation)	60 mg	0.6 ml (undiluted)	
1% lignocaine IO	30 mg	3 ml (undiluted)	
1% lignocaine SC	90 mg (max)	9 ml (max)	
Loratadine PO	5 mg	½ tablet	
Magnesium IV	6 mmol	6 ml (1 mmol/ml)	11
Metaraminol IV	0.3-0.6 mg	3-6 ml (0.1 mg/ml)	12
Midazolam IV (seizures)	3 mg	3 ml (1 mg/ml)	13
Midazolam IM (seizures)	6 mg	1.2 ml (undiluted)	
Naloxone IV	0.1- 0.3 mg	1- 3 ml (0.1 mg/ml)	14
Naloxone IM	0.6 mg	1.5 ml (undiluted)	
Ondansetron IV	6 mg	3 ml (undiluted)	
Ondansetron IM	3 mg	1.5 ml (undiluted)	
Paracetamol liquid PO	375 mg	7.5 ml (50 mg/ml)	
Paracetamol tablet PO	250 mg	½ tablet	
Prednisolone PO	30 mg	6 ml (5 mg/ml)	
Prednisone PO	30 mg	1 ½ tablets	
Rocuronium IV	30 mg	3 ml (undiluted)	
0.75% ropivacaine SC	67.5 mg (max)	9 ml (max)	
0.9% sodium chloride IV	20 ml/kg	600 ml	
Tranexamic acid IV	600 mg	6 ml (undiluted)	
Valproate IV	800 mg	8 ml (100 mg/ml)	15

40 kg / 11-13 years**DOSE****VOLUME****CARDIAC ARREST**

Adrenaline IV	0.4 mg	4 ml (1:10,000)	1
Amiodarone IV	200 mg	4 ml (undiluted)	
Manual defibrillation	200	Joules	
LMA	Size 3 (30-50 kg)	Cuff inflation 20 ml	
ETT (cuffed)	Size 6 or 7	19 cm length at lips	

OTHER DRUGS

Adrenaline IV (not cardiac arrest)	0.008 mg	8 ml (1:1,000,000)	2
Adrenaline IM	0.4 mg	0.4 ml (undiluted)	
Adrenaline IN (epistaxis)	0.2 mg	2 ml (1:10,000)	1
Ceftriaxone IV	2 g	10 ml (200 mg/ml)	3
Ceftriaxone IM	2 g	5 ml (400 mg/ml)	4
Fentanyl IV (analgesia)	10-40 mcg	1-4 ml (10 mcg/ml)	5
Fentanyl IM	40 mcg	0.8 ml (undiluted)	
Fentanyl IN (first dose)	80 mcg	1.6 ml (undiluted)	
Fentanyl IN (subsequent doses)	40 mcg	0.8 ml (undiluted)	
Fentanyl/ketamine IV (post intubation)	40 mcg/40 mg	4 ml	7
Fentanyl/midazolam IV (post intubation)	20 mcg/2 mg	2 ml	8
Glucagon IM	1 mg	1 ml (undiluted)	
10% glucose IV	2 ml/kg	80 ml	
Ibuprofen liquid PO	300 mg	15 ml (20 mg/ml)	
Ibuprofen tablet PO	300 mg	1 ½ tablets	

40 kg / 11-13 years

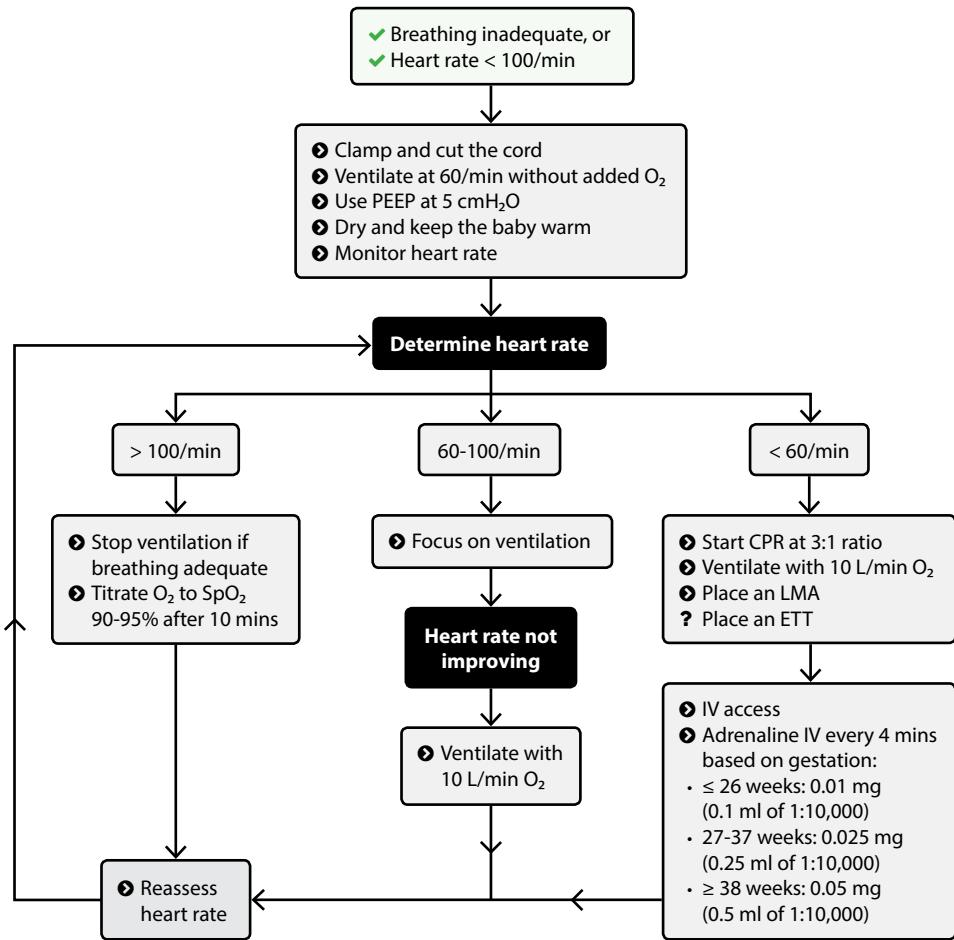
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VOLUME



Ketamine IV (analgesia)	10 mg	10 ml (1 mg/ml)	9
Ketamine IV (dissociation)	40 mg	4 ml (10 mg/ml)	10
Ketamine IM/PO (analgesia)	20 mg	0.2 ml (undiluted)	
Ketamine IM (dissociation)	80 mg	0.8 ml (undiluted)	
1% lignocaine IO	40 mg	4 ml (undiluted)	
1% lignocaine SC	120 mg (max)	12 ml (max)	
Loratadine PO	10 mg	1 tablet	
Magnesium IV	8 mmol	8 ml (1 mmol/ml)	11
Metaraminol IV	0.4-0.8 mg	4-8 ml (0.1 mg/ml)	12
Midazolam IV (seizures)	4 mg	4 ml (1 mg/ml)	13
Midazolam IM (seizures)	8 mg	1.6 ml (undiluted)	
Naloxone IV	0.1- 0.4 mg	1- 4 ml (0.1 mg/ml)	14
Naloxone IM	0.8 mg	2 ml (undiluted)	
Ondansetron IV	8 mg	4 ml (undiluted)	
Ondansetron IM	4 mg	2 ml (undiluted)	
Paracetamol liquid PO	500 mg	10 ml (50 mg/ml)	
Paracetamol tablet PO	500 mg	1 tablet	
Prednisolone PO	40 mg	8 ml (5 mg/ml)	
Prednisone PO	40 mg	2 tablets	
Rocuronium IV	40 mg	4 ml (undiluted)	
0.75% ropivacaine SC	90 mg (max)	12 ml (max)	
0.9% sodium chloride IV	20 ml/kg	800 ml	
Tranexamic acid IV	800 mg	8 ml (undiluted)	
Valproate IV	1200 mg	12 ml (100 mg/ml)	15

7.3 Neonatal resuscitation

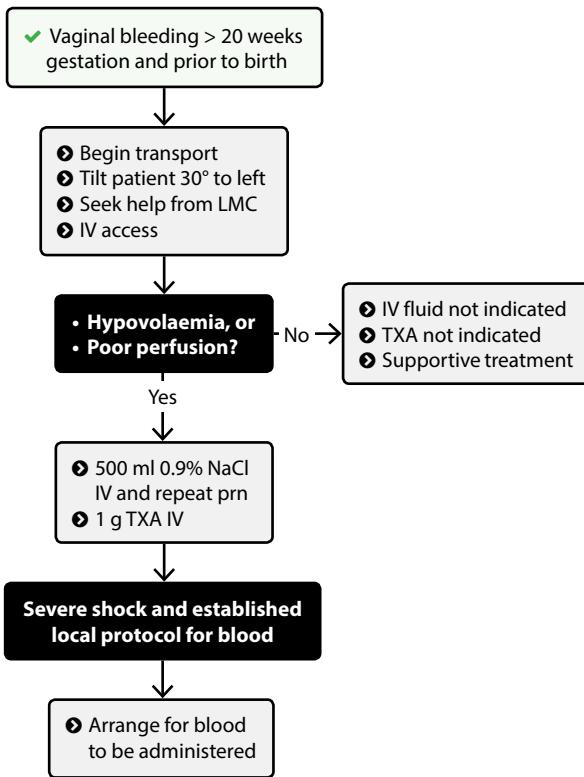


Note

⚠ Measure BGL if activity is abnormal. Neonatal hypoglycaemia is < 2.5 mmol/L.



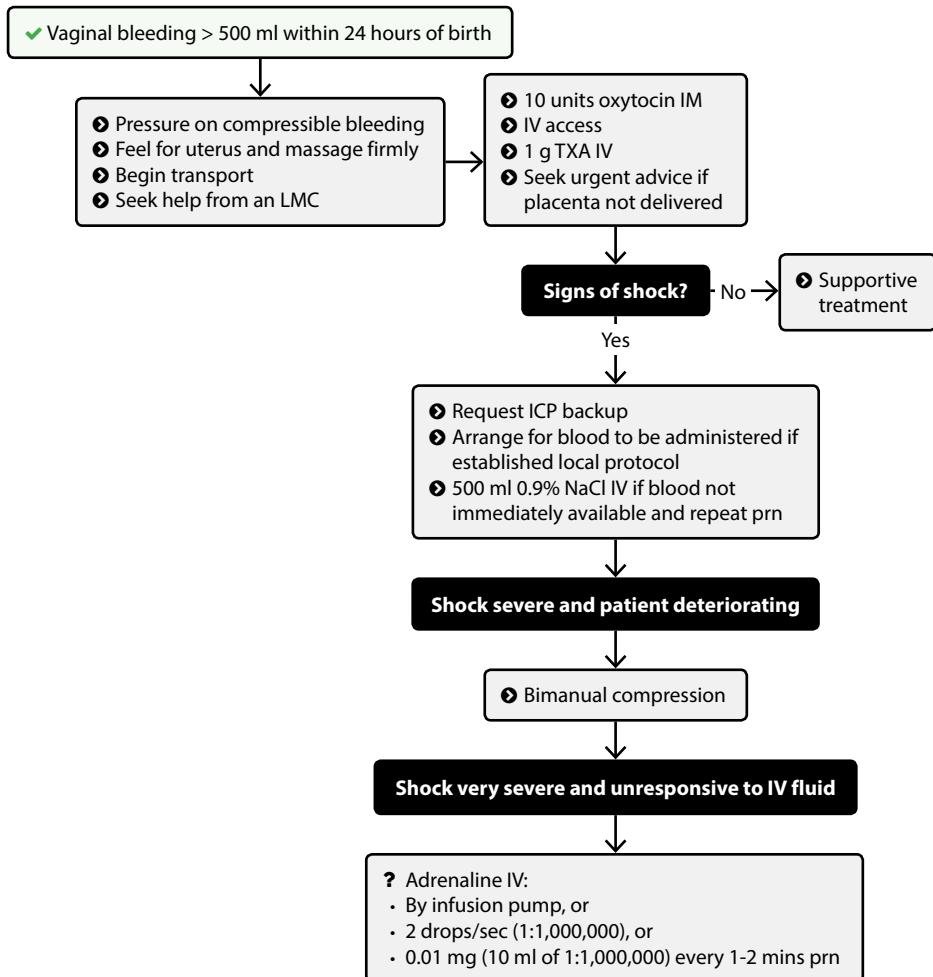
8.1 Antepartum haemorrhage



Note

- ⚠ Request backup from an ICP if shock is severe.
- ⚠ Transport direct to a hospital with obstetric facilities whenever feasible and safe, providing early notification if signs of hypovolaemia or poor perfusion are present.

8.2 Postpartum haemorrhage



Note

⚠ Transport direct to a hospital with obstetric facilities whenever feasible and safe, providing early notification.

8.3 Pregnancy and birth

SPONTANEOUS MISCARRIAGE

- Provide a clear recommendation to a patient with miscarriage in the first trimester that immediate referral or transport to hospital is not required unless:
 - Pain is severe, or
 - The nature or location of the pain is different to that of menstrual pain, or
 - Bleeding is clinically significant.
- If referral to hospital is not required and the LMC cannot be contacted, recommend the patient is reviewed by their LMC or GP within 24 hours.

PRE-LABOUR RUPTURE OF MEMBRANES

- Contact the LMC if possible.
- Exclude cord prolapse.
- If pregnancy < 37 weeks, clearly recommend assessment in an obstetric facility.
- If pregnancy > 37 weeks, clearly recommend the patient contacts their LMC.

PRE-TERM LABOUR

- Contact the LMC if possible.
- Provide a clear recommendation that transport to hospital with obstetric facilities is required by ambulance immediately.
- Be prepared to perform neonatal resuscitation.

BIRTH

- Support the baby's head and shoulders as they appear, without providing traction.
- Place the baby skin to skin with the mother, initiate drying and note the time of birth.
- Keep the baby skin to skin with the mother provided neither requires resuscitation.
Place a hat on the baby if available and cover mother and baby with a warm blanket.
Observe the baby's activity and breathing.
- Clamp and cut the cord 5 cm from the baby 2-3 minutes after birth, unless this is required earlier to facilitate resuscitation.
- Administer 10 units of oxytocin IM into the mother's lateral thigh.
- Allow the placenta to deliver spontaneously and place in a plastic bag.
- Following placenta delivery, feel for the uterus and massage until it feels firm.

SHOULDER DYSTOCIA

- Utilise the HELPERR mnemonic:
 - **Help.** Call for immediate help from an LMC, doctor or ICP.
 - **Evaluate the need for episiotomy.** Seek urgent clinical advice if episiotomy is thought to be required.
 - **Legs up.** Ask the patient to grab her knees, pull them to her chest and push as hard as she can with the next two contractions.
 - **Pressure.** With the legs still up, place the heel of your hand directly above the patient's pubic bone and push slowly but firmly straight back toward the patient's lower back.
 - **Enter manoeuvres.** Seek urgent clinical advice if these are thought to be required.
 - **Remove the posterior arm.** Place the fingers of your hand into the posterior aspect of the vagina (adjacent to the anus), feel for the posterior arm and manipulate it until the arm is able to be pulled through the vagina.
 - **Roll.** Ask the patient to move on to her hands and knees and push as hard as she can with the next two contractions.
- If the above actions fail, seek urgent clinical advice and transport urgently.

PROLAPSED UMBILICAL CORD AND/OR BREECH DELIVERY

- Seek help from an LMC.
- Instruct the patient not to push.
- Position the mother tilted to the left with pillows/blankets under her pelvis.
- Transport urgently to a hospital with obstetric facilities.
- Encourage delivery if the baby appears or the patient wants to push.

RETAINED PLACENTA

- Transport to a hospital with obstetric facilities without unnecessary delay and seek help from an LMC.
- Gain IV access and prepare to treat PPH.

9.3 Rapid sequence intubation (RSI)

- ✓ GCS ≤10, and
- ✓ Clinically significant compromise of airway or ventilation

- ⦿ Fentanyl IV over 1 min
- ✓ [RSI checklist pg100](#)
- ⦿ Metaraminol IV if signs of shock
- ⦿ Ketamine IV
- ⦿ Neuromuscular blockade IV
- ⌚ 5 ventilations prior to laryngoscopy

**ETT placement confirmed
with capnography**

- ⦿ Rocuronium IV if suxamethonium used

- ⦿ See 'post intubation' **pg102**
- ✓ [Post intubation checklist pg150](#)

Rapid sequence intubation

- ✗ No capnography
- ✗ No dedicated suitable assistant
- ⌚ Predicted difficult intubation
- ⌚ Transport to hospital < 15 minutes
- ⌚ Condition is likely to rapidly improve
- ⌚ Patient is aged < 5 years or > 75 years
- ⌚ Severe comorbidities

Suxamethonium

- ✗ History (or family history) of MH
- ✗ Pre-existing paraplegia or quadriplegia
- ✗ Long term weakness
- ✗ Hyperkalaemia strongly suspected

Rocuronium

- ⌚ Chronic muscle weakness

9.3 RSI doses

Adult RSI doses

Drug	< 70 kg	70-90 kg	> 90 kg
Fentanyl *	120 mcg	150 mcg	200 mcg
Ketamine	120 mg	150 mg	200 mg
Rocuronium	150 mg	150 mg	200 mg
Suxamethonium	150 mg	150 mg	200 mg

* Halve the dose of fentanyl if there are signs of shock or the patient is frail.

Paediatric RSI doses

Drug	10 kg	20 kg	30 kg	40 kg
Fentanyl *	20 mcg	40 mcg	60 mcg	80 mcg
Ketamine	20 mg	40 mg	60 mg	80 mg
Rocuronium	20 mg	40 mg	60 mg	80 mg
Suxamethonium	20 mg	40 mg	60 mg	80 mg

* Halve the dose of fentanyl if there are signs of shock.

9.4 RSI checklist

Flow chart on pg98

Ⓐ Roles assigned and team briefed:

- a) Airway.
- b) Airway assistant.
- c) Drugs and monitoring.

Ⓐ Patient prepared:

- a) Pre-oxygenation. Nasal prongs in place.
- b) Position optimised.
- c) IV access patent. Running line attached.
- d) 0.9% sodium chloride IV bolus if indicated.

Ⓐ Monitoring attached and visible:

- a) Baseline vital signs.
- b) Pulse oximetry and capnography.

Ⓐ Equipment checked and ready:

- a) Manual ventilation bag with PEEP valve set to minimum 5 cmH₂O.
- b) Oropharyngeal airway.
- c) Laryngoscope.
- d) ETT. Cuff checked. Syringe containing 5 ml of air.
- e) ETT holder in place.
- f) Suction checked and in position.
- g) Bougie.
- h) LMA and cricothyroidotomy equipment out.

Ⓐ Drugs drawn up and doses confirmed:

- a) Metaraminol.
- b) Fentanyl.
- c) Ketamine.
- d) Neuromuscular blocker.
- e) Post intubation sedation.
- f) Rocuronium.
- g) Consider atropine

Ⓐ Failed intubation plan communicated.

9.5 Failed intubation drill

- ✓ Unable to intubate within 30 secs, or
- ✓ Severe desaturation during laryngoscopy, or
- ✓ Oesophageal intubation

- ➊ Cease attempts to intubate
- ➋ Place OPA and/or NPA
- ➌ Manually ventilate with O_2
- ➍ Two-person technique

Able to adequately oxygenate and ventilate?

- Yes

- ➊ Place LMA and manually ventilate with O_2

Able to adequately oxygenate and ventilate?

- Yes →

- ➊ Optimise position
- ➋ Maximise oxygenation
- ➌ One retry with bougie
- ➍ Different blade
- ➎ Anterior laryngeal manipulation

ETT placed and $ETCO_2 > 5 \text{ mmHg}$ after 4-6 breaths?

- Yes →

- ➊ See 'post intubation' pg102
- ➋ Post intubation checklist pg150

- ➊ Place LMA or OPA/NPA and manually ventilate with O_2

Able to adequately oxygenate and ventilate?

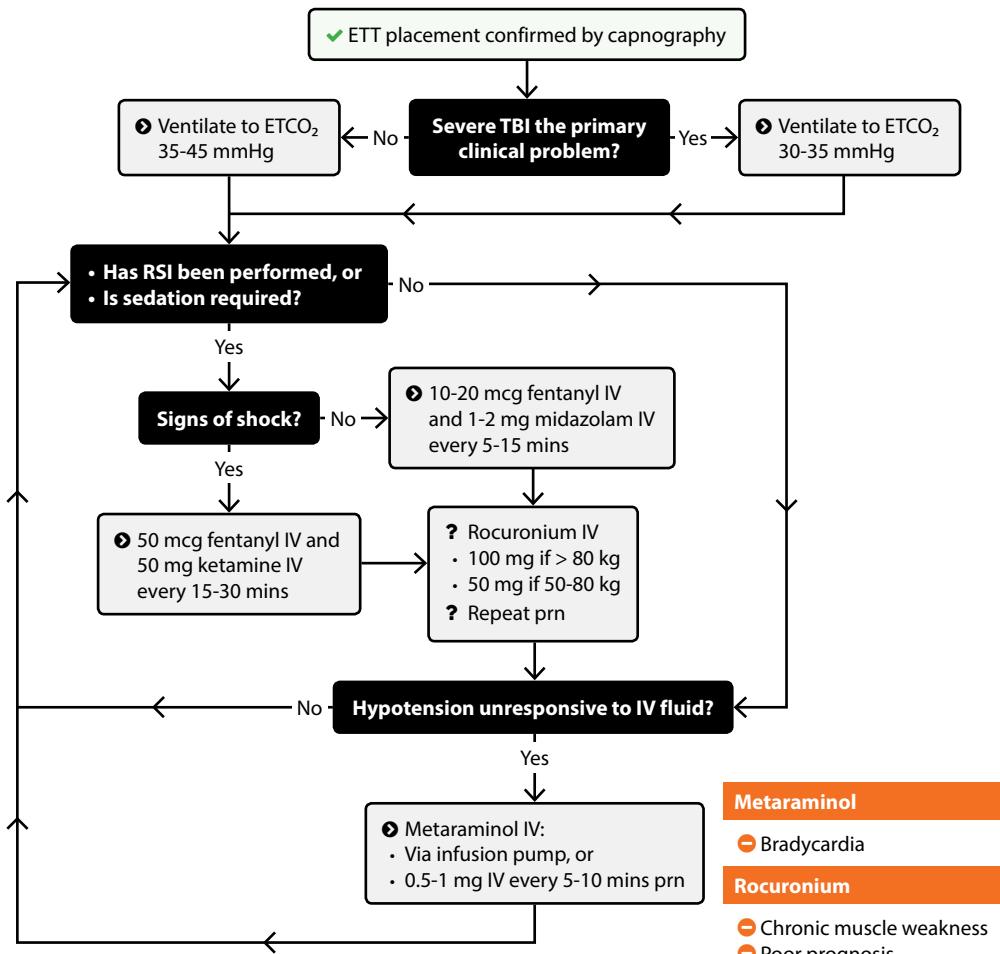
- Yes →

- ➊ Continue with airway management

- ➊ Surgical airway

- No -

9.6 Post intubation



Note

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.

⚠ If the patient has been intubated during cardiac arrest use this section only if sustained ROSC occurs.

9.7 Mechanical ventilation troubleshooting

D Displacement of ETT:

- Check ETCO₂ level and waveform.
- Examine the chest for endobronchial intubation.
- Adjust ETT length at lips if required.

O Obstruction of ETT/circuit/tubing:

- Check ETT/circuit/tubing not kinked.
- Check patient not biting.
- Check ETT not blocked.

P Pneumothorax:

- Examine for pneumothorax.
- Check for high PIP.
- Decompress if required, preferably by finger thoracostomy.
- Consider other causes of abnormal lung function.

E Equipment:

- Check ventilator settings/circuit/tubing.
- Check oxygen and power supply.

S Stacked breaths:

- Check for air trapping.
- Consider disconnecting ventilator for 20-30 seconds.

TROUBLESHOOTING: FALLING ETCO₂

- Reduce ventilation rate and adjust every 5-10 minutes.
- Consider the possibility of a falling cardiac output.

TROUBLESHOOTING: RISING ETCO₂

- Increase ventilation rate and adjust every 5-10 minutes.
- If remains high despite 20-30 breaths per minute, do not increase ventilation further.

TROUBLESHOOTING: FALLING SpO₂

- Increase FiO₂.
- Check ventilator settings/circuit/tubing.
- Increase PEEP.
- Examine for endobronchial intubation and pneumothorax.
- Consider the possibility of a monitoring error.

TROUBLESHOOTING: HIGH AIRWAY PRESSURES

- Ensure adequate sedation and neuromuscular blockade.
- Examine for endobronchial intubation and bronchospasm.
- Check ETT/circuit/tubing for obstruction.
- Reduce tidal volume.
- Increase relief airway pressure to 45 cmH₂O.

10.2 Assessing mental status

The BATOMI mnemonic should be used when assessing a patient's mental status.

B Behaviour:

- Assess for signs of abnormal behaviour (for example, lack of eye contact, abnormal body language/posture, or abnormal movement).

A Affect, appearance and mood:

- Assess the patient's affect.
- Assess the patient's appearance (for example, if they are dressed appropriately and if they maintain appropriate personal hygiene).
- Assess for signs of abnormal mood.

T Thought and talk:

- Assess the patient's thoughts and expression of their thoughts.
- Assess the tone, flow, rate, volume and content of the patient's speech.
- Assess for the presence of hallucinations.

O Orientation:

- Assess orientation to person, place and time.

M Memory:

- Assess short and long-term memory.

I Intellect and insight:

- Assess intellect by noting cognitive ability and comprehension of information.
- Assess insight by noting whether they understand their situation and act appropriately.

10.5 Psychological wellness

Use the MANERS psychological first aid tool to help proactively support staff mental health and wellness.

M Minimise exposure:

- Minimise exposure to distressing situations.
- Move to a place of calm and safety if distressed.

A Acknowledge the event:

- Acknowledge if an incident was potentially distressing.
- Ask if they are OK and allow them to talk about how they have been affected.
- Ensure conversations are sensitive, respectful and confidential.

N Normalise reactions:

- Reassure and recognise that individuals are affected differently and this is normal.
- Acknowledge feelings without being judgemental.

E Educate as required:

- Talk about what helps you.
- Encourage techniques that promote psychological wellness.
- Ensure they know support services are available.

R Review, restore or refer:

- Arrange a follow-up phone call or visit to check on how they are doing.
- Refer to support services if required.

S Self-care:

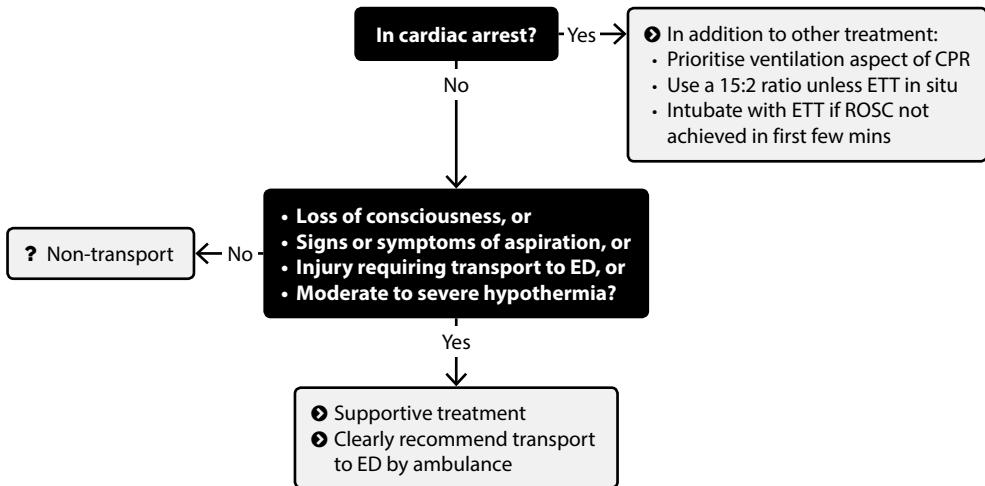
- Maintain a healthy lifestyle ensuring adequate sleep, exercise, nutrition and activity.
- Encourage a culture of openly talking about how we are feeling.
- Develop skills that improve communication and help deal with conflict.

At the end of each shift pause briefly and think about or discuss:

- ✓ What was the best thing we did for a patient or family today?
- ✓ What is something we did today that we could do better next time?
- ✓ What are we going to do when we get home to help maintain our psychological wellness?



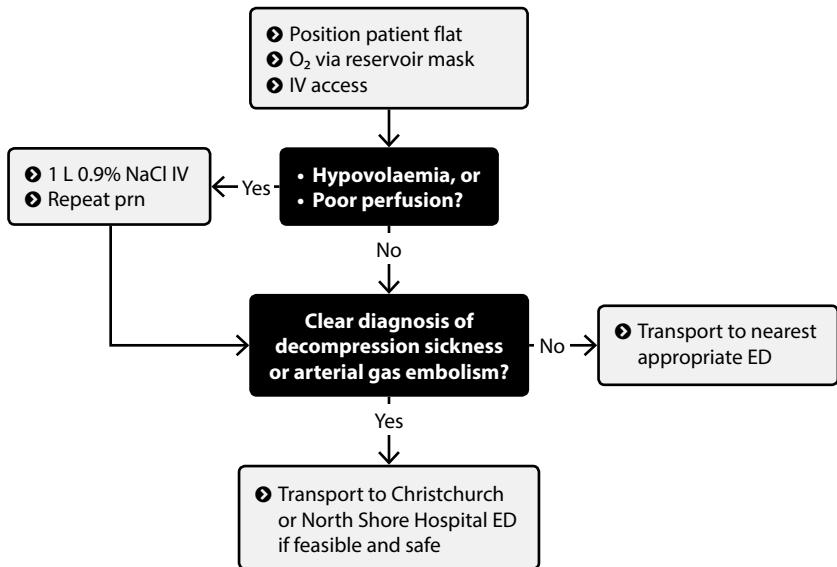
11.1 Drowning



Note

⚠️ If the patient is not transported to an ED, clearly recommend they seek medical advice at an ED if respiratory symptoms develop within the next few days.

11.2 SCUBA diving emergencies



Note

- ⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.
- ⚠ Avoid transporting the patient higher than 300 m above sea level if feasible and safe.
- ⚠ Do not transport direct to a recompression facility.
- ⚠ Transport the patient's dive computer with them if available.

11.3 Hyperthermia

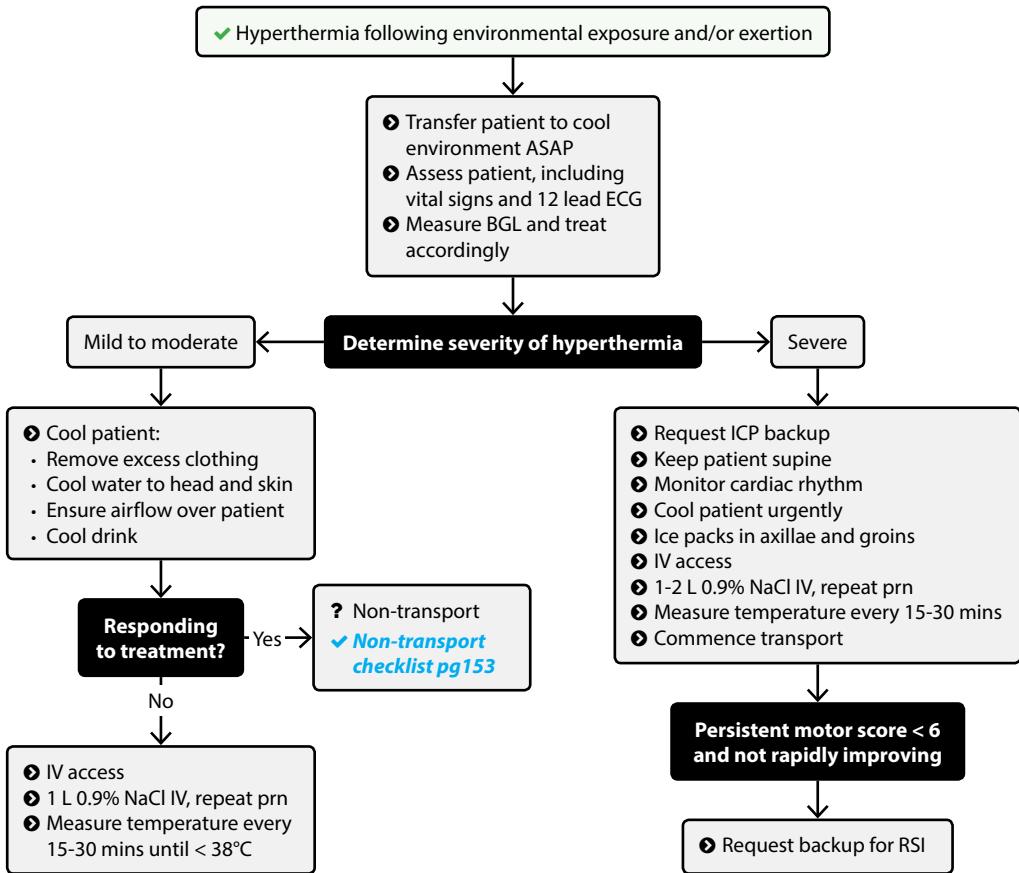
This table should be used in conjunction with the 'hyperthermia' flow chart.

Determining the severity of hyperthermia (not all clinical features need to be present)

MILD	MODERATE	SEVERE
<ul style="list-style-type: none">• 38-39°C• Sweating• Tachycardia• Tachypnoea	<ul style="list-style-type: none">• 39-40°C• Sweating• Tachycardia• Tachypnoea• Lethargy• Feeling faint• Nausea and vomiting• Muscle cramping• Disorientation• Headache	<ul style="list-style-type: none">• > 40°C• Altered level of consciousness• Confusion• Absence of sweating• Dry and hot skin• Signs of shock• Dysrhythmias• Seizures



11.3 Hyperthermia



Note

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.
⚠ Treat seizures as per the 'seizures' section pg63.

11.4 Hypothermia

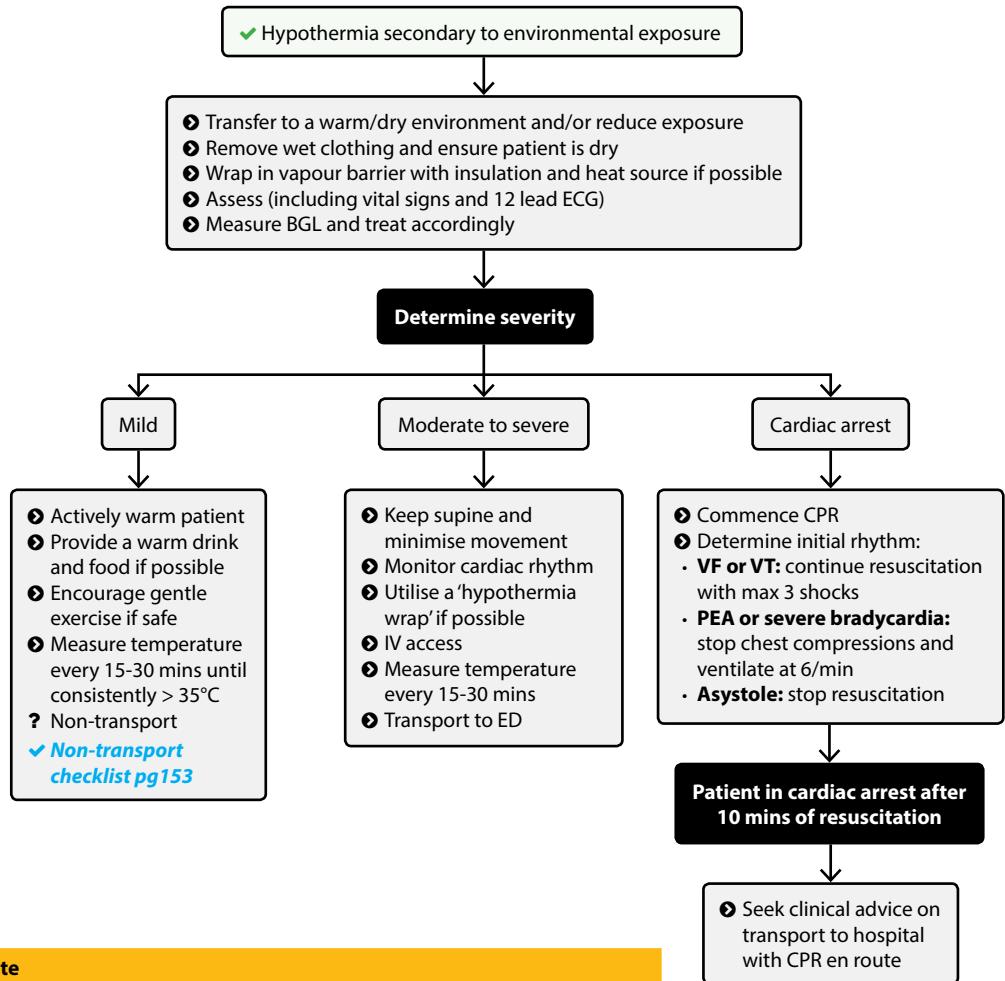
This table should be used in conjunction with the 'hypothermia' flow chart.

Determining the severity of hypothermia (not all clinical features need to be present)

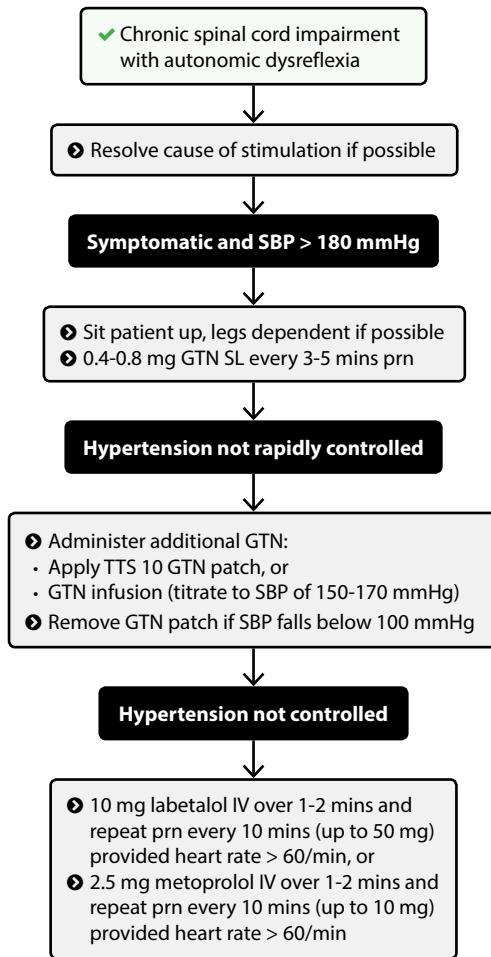
MILD	MODERATE	SEVERE
<ul style="list-style-type: none">• 32-35°C• Shivering• Increased muscle tone• Tachycardia• Hypertension• Tachypnoea• Poor coordination• Lethargy• Confusion	<ul style="list-style-type: none">• 28-32°C• Absence of shivering• Muscle rigidity• Altered level of consciousness• Bradycardia• Hypotension• Bradypnoea	<ul style="list-style-type: none">• < 28°C• Unconscious• Severe bradycardia• Severe bradypnoea• Severe shock• Unreactive pupils• Cardiac arrest



11.4 Hypothermia



12.1 Autonomic dysreflexia



GTN spray and GTN patch

- ✖ SBP < 100 mmHg
- ✖ HR < 40/min or > 150/min
- ✖ VT
- STEMI
- Small, frail or physiologically unstable
- Poor perfusion
- Dysrhythmia
- Erectile dysfunction medicine
- Aortic or mitral stenosis

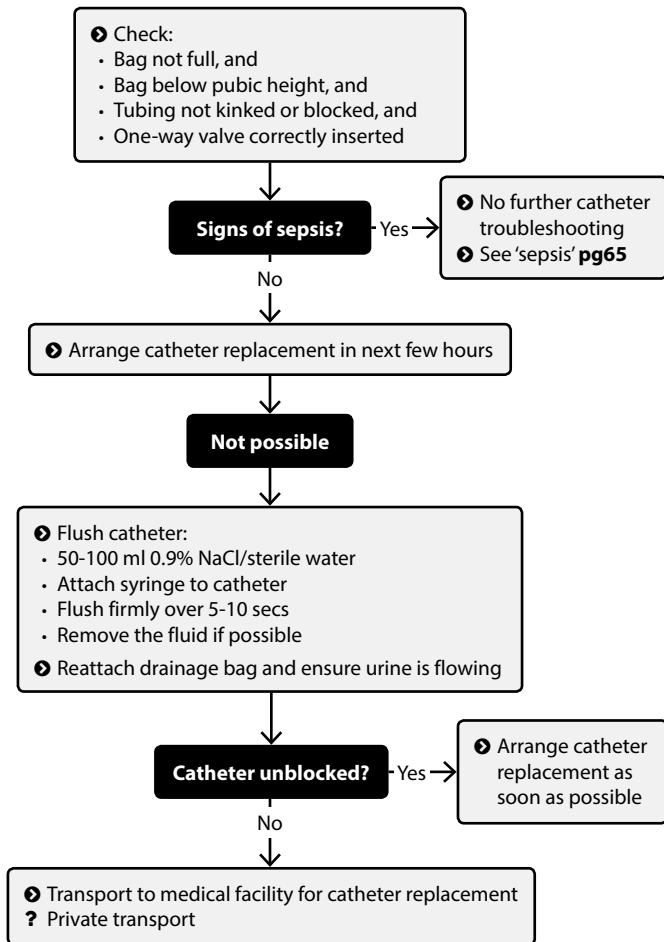
Labetalol and metoprolol

- ✖ Bradycardia
- ✖ Hypotension
- 1st degree heart block
- Known sick sinus syndrome
- Previous 2nd or 3rd degree heart block
- Asthma or COPD
- Heart failure

Note

⚠ Seek clinical advice if the blood pressure is difficult to control.

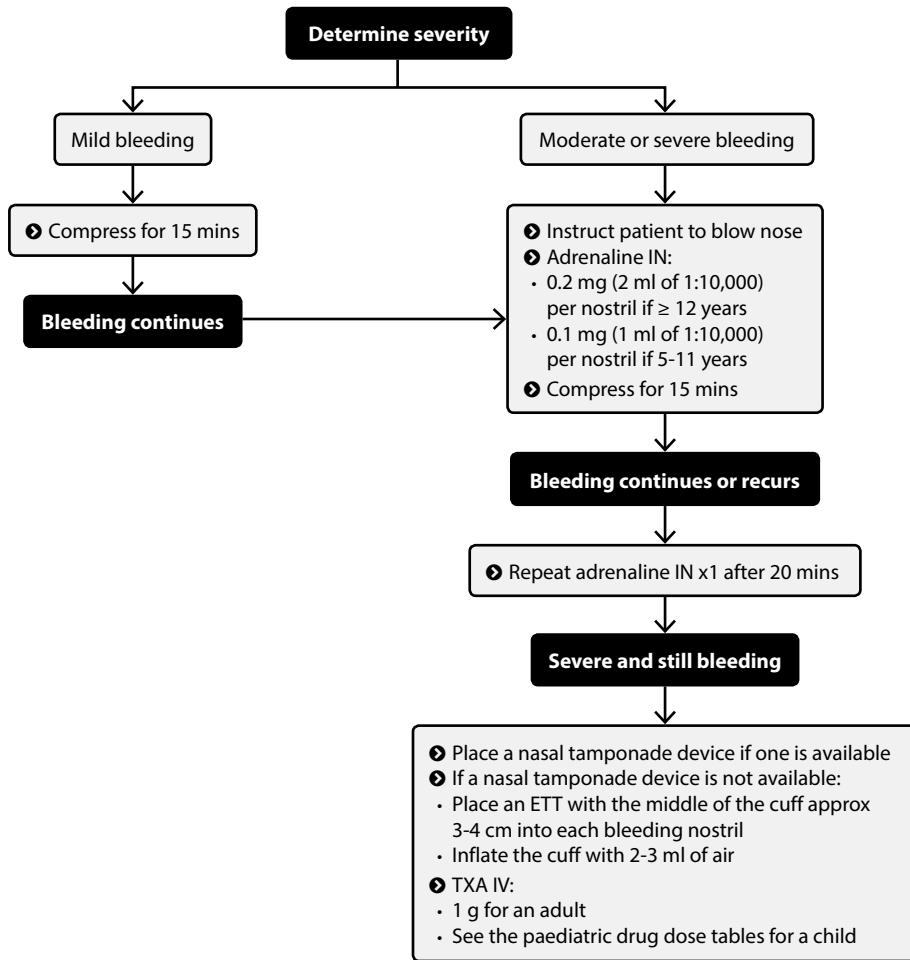
12.2 Blocked urinary catheter



Note

⚠️ If the patient has had surgery on their renal tract or prostate in the last 4 weeks do not use this section and transport to hospital.

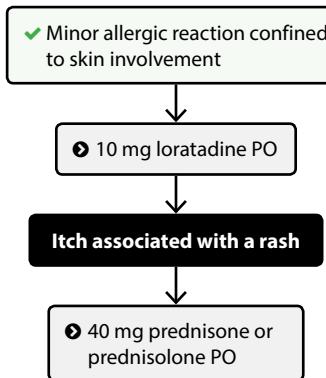
12.3 Epistaxis



Note

⚠️ Call for ICP backup if bleeding requires an ETT to be placed. Seek clinical advice if ICP backup is unavailable.

12.4 Minor allergy



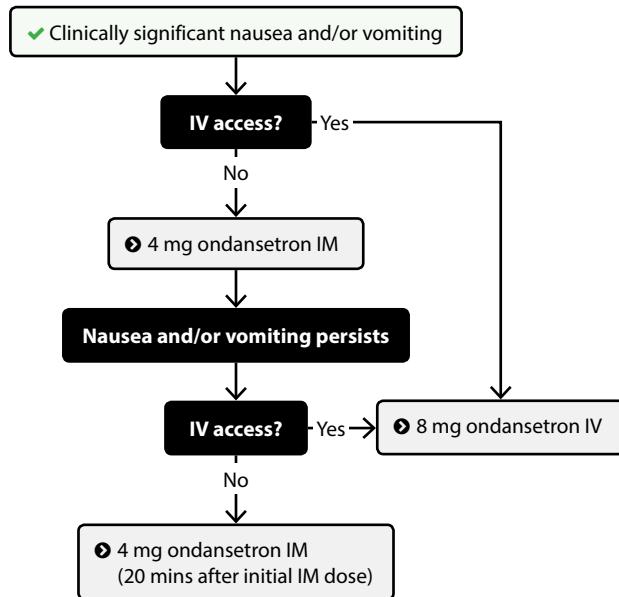
Loratadine

- ✖ < 1 year of age
- ✖ Pregnancy

Note

⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children **pg79**.

12.5 Nausea and/or vomiting



Ondansetron

✗ < 1 year of age

Note

- ⚠ All doses described are for adults only, refer to the paediatric drug dose tables for children pg79.
- ⚠ If an EMT is present there is usually no role for backup to be requested solely for ondansetron IV.

12.6 Stroke

This table should be used in conjunction with the 'stroke' flow chart.

The FAST test

F Face:

Look for new onset of unilateral facial weakness. Ask the patient to smile and show all of their teeth/gums.

A Arm:

Look for new onset of unilateral arm weakness. Ask the patient to raise their arms to 90 degrees from the body, with their palms facing upward, close their eyes and keep their arms raised. Look for inability to raise one arm or for one arm that drifts downward.

S Speech:

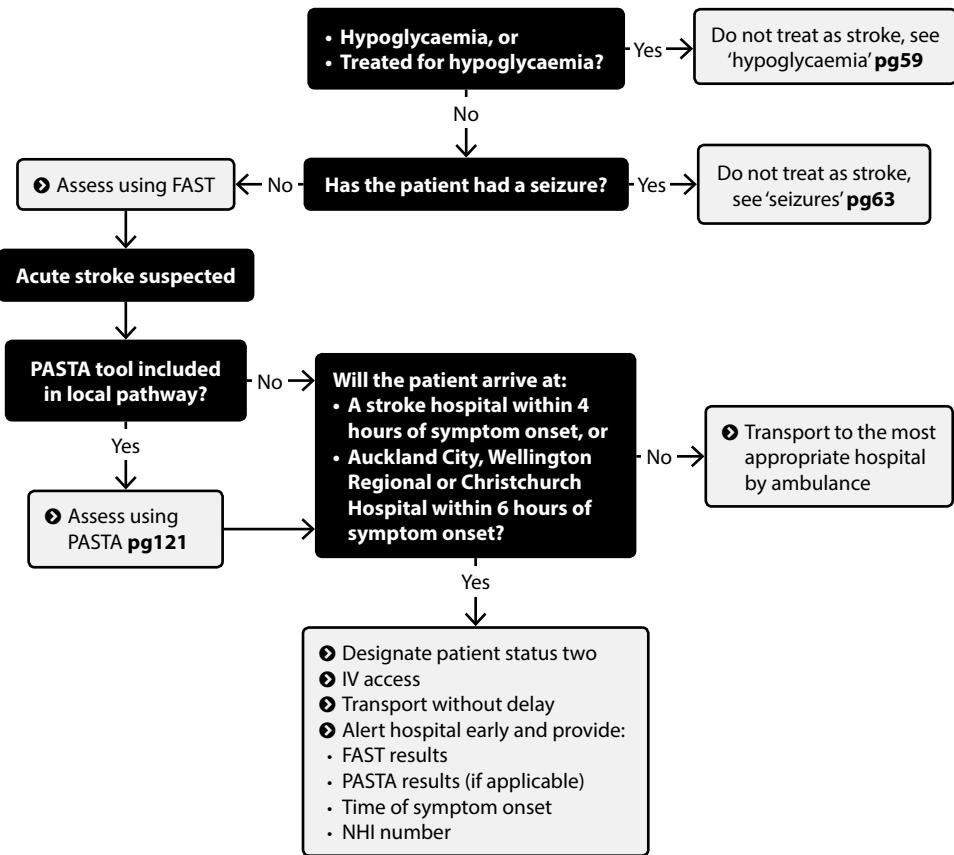
Look for new onset of abnormal speech. Ask the patient to repeat a sentence and listen for slurring of words. Ask the patient to name several common objects shown to them and observe any difficulty or inability to name them.

T Time:

Note the time of onset. This is normally recorded as the time that the patient was last seen or known to be symptom-free. If the patient has woken up with the symptoms, record the time that the patient was last seen or known to be awake and symptom-free, as well as the time of waking.

A patient is having a stroke until proven otherwise if there are new abnormalities as detected by the FAST test.

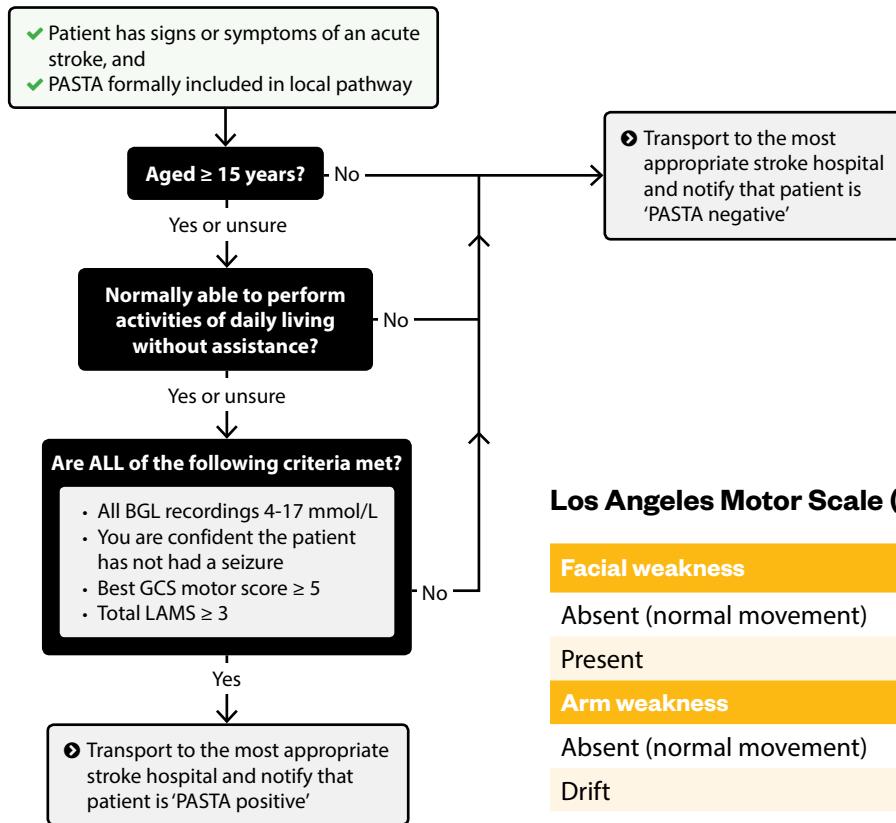
12.6 Stroke



Note

- ⚠ Transport a relative with the patient whenever feasible and safe as the relative may be required to help with consent for reperfusion therapy.
- ⚠ Consider providing the handover while the patient is on the ambulance stretcher and convey the patient direct to the CT scanner if asked to do so, provided this is not associated with significant delay.

12.6 Pre-hospital acute stroke triage and assessment (PASTA)



Los Angeles Motor Scale (LAMS)

Facial weakness

Absent (normal movement)	0
--------------------------	---

Present	1
---------	---

Arm weakness

Absent (normal movement)	0
--------------------------	---

Drift	1
-------	---

Falls rapidly or no arm movement	2
----------------------------------	---

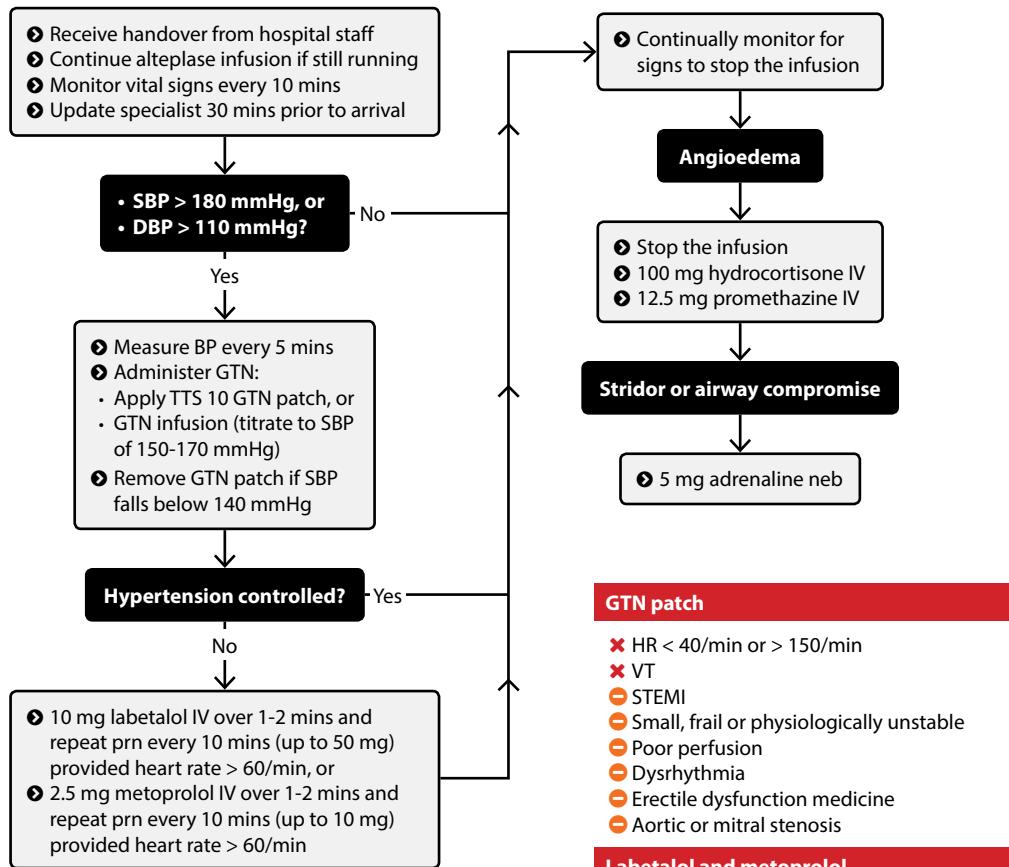
Grip strength

Normal	0
--------	---

Weak	1
------	---

No grip	2
---------	---

12.8 Inter-hospital transfer for stroke clot retrieval (SCR)



Note

⚠ Seek clinical advice if the blood pressure is difficult to control.

⚠ Signs to stop the alteplase infusion:

- SBP > 200 mmHg or DBP > 120 mmHg, or
- Signs of intracranial haemorrhage or severe bleeding, or
- Angioedema.

Labetalol and metoprolol

- ✗ Bradycardia
- ✗ Hypotension
- ✗ 1st degree heart block
- ✗ Known sick sinus syndrome
- ✗ Previous 2nd or 3rd degree heart block
- ✗ Asthma or COPD
- ✗ Heart failure

13.1 Making recommendations using the flag tables

Use this section with relevant flag tables to make referral and transport recommendations.

- Assess the patient, including an assessment of the features contained within the relevant flag tables:
 - a) If one or more red flags are present the patient must be given a clear recommendation to be assessed by a doctor within two hours, and should usually be given a clear recommendation to be transported to ED by ambulance.
 - b) If any orange flags are present (and no red flags) the patient should be given a clear recommendation to be seen in primary care (preferably by their own GP) within the timeframe specified in the relevant section.
 - c) If green flags are present (and no orange or red flags) the patient is usually suitable to be given a clear recommendation to remain in the community with self-care. Advise that the patient is seen in primary care (preferably by their own GP) if their symptoms fail to improve. The patient may be administered paracetamol and/or ibuprofen if indicated.
- Follow a local pathway if one is in place.

Referral and transport

- Clinical judgement is required when determining whether a patient with one or more red flags is given a recommendation to be transported to ED by ambulance, or to be seen in primary care.
 - Most patients should receive a recommendation to be transported to an ED by ambulance, particularly if the patient is living independently.
 - Being seen in primary care may be the best option if the patient is in an aged residential care facility, is very frail or has dementia.
- If the patient has one or more red flags and is being referred to primary care:
 - The patient's anticipated clinical needs must be able to be safely met in primary care, and
 - A nurse or doctor within primary care must be contacted directly by ambulance personnel, and
 - A nurse or doctor must agree to see the patient, and
 - Safe transport (if required) must be available.
- The timeframes for the patient to be seen/assessed in each section are a maximum. Clinical judgement is required and patients may need to be seen earlier than described.

13.2 Abdominal pain



RED FLAGS

- Severe pain.
- Abnormal vital signs.
- Pain radiating to the back.
- Loin or flank pain.
- Temperature $> 40^{\circ}\text{C}$.
- Rigors.
- Female aged 14-50 years and last menstrual period (LMP) more than four weeks ago.
- Pregnant.
- Abdominal tenderness on palpation.
- Pain made worse by movement.
- Indigestion or epigastric pain.
- Persistent or recurrent vomiting.
- Aged < 5 years.
- Aged ≥ 65 years.
- Immunocompromised (for example on steroids or immunotherapy).



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 12 HOURS

- Dysuria.
- Frequency or urgency of urination.
- Recent unplanned weight loss.
- Haematuria.
- Temperature $38\text{-}40^{\circ}\text{C}$ but other vital signs normal.
- New onset of constipation in the elderly.



GREEN FLAGS

- Diarrhoea and vomiting with normal vital signs.
- Pain associated with menstruation.
- Recurrent constipation.

13.3 Falls



RED FLAGS

- Clinically significant injury.
- Clinically significant pain.
- Abnormal vital signs.
- Signs of stroke.
- Seizure without a history of epilepsy.
- Headache.
- New onset of visual disturbance.
- Unable to mobilise.
- Unstable medical condition contributing to the fall.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- More than one fall in the last week.
- Postural hypotension.
- Seizure with a history of epilepsy.
- Recent change in medication.
- Minor injury requiring non-urgent treatment.
- New reduction in mobility but able to weight bear.



GREEN FLAGS

- Minor soft tissue injury not requiring medical treatment.
- Able to mobilise in a manner that is normal for the patient.

13.4 Fever in patients aged under five years



RED FLAGS

- **Colour:**
 - Pale or ashen.
 - Mottled.
 - Cyanosed.
- **Activity:**
 - No response to social cues.
 - Difficult to rouse or does not stay awake when roused.
 - Weak cry.
 - Exhaustion.
- **Respiratory:**
 - Grunting.
 - Respiratory rate > 50/minute.
 - Moderate or severe chest indrawing.
 - $\text{SpO}_2 < 94\%$ on air.
- **Circulation and hydration:**
 - Reduced skin turgor.
 - Severe tachycardia.
 - Peripheral capillary refill time > three seconds.
 - Bradycardia (an extremely late sign).
- **Other:**
 - Temperature > 40°C.
 - Neutropenia.
 - Chemotherapy within the last four weeks.
 - Pain in a single joint or a single muscle area.
 - Rigors.
 - Petechiae or purpura.
 - Neck stiffness.
 - Focal neurological signs.
 - Significant concern regarding neglect or non-accidental injury.



ORANGE AND GREEN FLAGS

Continued on next page



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 6 HOURS

- **Colour:** pallor reported by caregiver (but not seen by personnel).
- **Activity:**
 - Not responding to social cues normally.
 - Wakes only after physical stimulation.
 - Decreased activity.
 - Poor feeding.
- **Circulation and hydration:**
 - Dry mucous membranes.
 - Tachycardia.
 - Peripheral capillary refill time 2-3 seconds.
 - Reduced urinary output or frequency.
- **Respiratory:**
 - Nasal flaring.
 - Respiratory rate 40-50/minute.
 - Mild indrawing.
 - Crackles audible on auscultation.
 - SpO₂ 94-95% on air.
- **Other:**
 - Sore throat.
 - Illness for longer than five days.
 - Non-weight bearing or not mobilising appropriately.
 - Immunocompromised (for example on steroids).
 - Help from a healthcare provider has been sought more than once within 24 hours.



GREEN FLAGS

- **Colour:** normal colour of skin, lips and tongue.
- **Activity:**
 - Responds normally to social cues.
 - Wakes easily and stays awake.
 - Strong/normal cry or not crying.
- **Respiratory:**
 - Normal respiratory rate.
 - No signs of indrawing.
 - SpO₂ ≥ 96% on air.
- **Circulation and hydration:**
 - Normal skin and eyes.
 - Moist mucous membranes.
 - Normal heart rate.
 - Peripheral capillary refill time < two seconds.

13.5 Fever in patients aged five years and over



RED FLAGS

- Significantly abnormal vital signs.
- Pain or tenderness in the flank or back.
- Rigors.
- Neutropenia.
- Chemotherapy within four weeks.
- Abdominal pain with tenderness on palpation.
- Pain in a single joint or a single muscle area.
- Severe muscle tenderness.
- Temperature $> 40^{\circ}\text{C}$.
- Drowsiness.
- Severe or worsening headache.
- Neck stiffness.
- Petechiae or purpura.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 12 HOURS

- Cellulitis.
- Immunocompromised (for example on steroids or immunotherapy).
- Frequency or urgency of urination.
- Sore throat.
- Cough productive of purulent sputum.
- Pleuritic chest pain.
- Help from a healthcare provider has been sought more than once within 24 hours.



GREEN FLAGS

- Influenza with normal vital signs and normal mobility.

13.6 Headache



RED FLAGS

- Headache or neck pain following neck manipulation.
- Neck pain or neck stiffness.
- Sudden onset of severe headache.
- Temperature $> 38^{\circ}\text{C}$ (in the absence of influenza symptoms).
- Persistent vomiting.
- Focal neurological signs.
- Altered level of consciousness, including a history of altered level of consciousness with the onset of the headache.
- New onset of an altered mental status.
- Worsening headache following recent trauma to the head.
- Taking an anticoagulant or has a known bleeding disorder.
- Signs of temporal arteritis.
- Hypertension during pregnancy.
- Previous history of intracranial bleeding.
- Family history of cerebral vascular abnormalities.
- Onset during sexual activity or exercise.
- Headache associated with seizure.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 12 HOURS

- Symptoms associated with sinusitis.
- Migraine with symptoms different to usual.



GREEN FLAGS

- Symptoms associated with influenza.
- Known migraine with usual symptoms.
- Normal vital signs, normal assessment using the FAST test and able to walk normally.

13.7 Non-traumatic lumbar back pain



RED FLAGS

- Loss of bladder or bowel control.
- Temperature $> 38^{\circ}\text{C}$.
- Rigors.
- Abnormal vital signs.
- Pain in the thoracic spine or chest.
- Abdominal pain or tenderness.
- Altered sensation in the saddle area.
- Altered sensation and/or power in both legs.
- Unable to mobilise.
- Signs or symptoms of generalised illness.
- Pain radiating down both legs.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- A history of cancer (other than skin cancer).
- Immunocompromised (for example on steroids or immunotherapy).
- Worsening pain, especially when lying down or at night.
- Recent unplanned weight loss.
- Pain radiating down one leg.
- Altered sensation or power in one leg.
- Osteoporosis.
- IV drug use.



GREEN FLAGS

- Pain and/or muscle spasm isolated to the lumbar area.
- Able to walk.

13.8 Syncope



RED FLAGS

- Abnormal vital signs.
- Failure to recover to normal.
- Chest pain.
- Abnormal 12 lead ECG with abnormalities of concern.
- New or unexplained shortness of breath.
- Clinically significant injury.
- Occurred during exertion.
- Pregnancy.
- Headache.
- Known valvular or congenital heart disease.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- Aged < 15 years.
- Aged ≥ 75 years.
- Postural hypotension.
- Abnormal 12 lead ECG but no abnormalities of concern.
- Palpitations.
- Family history of sudden death.
- History of heart failure.



GREEN FLAGS

- Clearly benign. Factors associated with benign syncope include:
 - Posture, for example prolonged standing.
 - Provoking factors, for example pain or a procedure.
 - Prodromal symptoms, for example sweating or feeling hot.

13.9 Vertigo



RED FLAGS

- Signs of stroke.
- Headache.
- Unable to walk unaided.
- Neck pain.
- Visual disturbance.
- Abnormal coordination during the finger-nose test.
- Nystagmus that persists for more than 10 seconds with the head still.
- Altered level of consciousness.
- Abnormal vital signs.
- History of recent trauma, especially head or neck injury.
- Symptoms that do not improve when the head is still.



ORANGE FLAGS – SHOULD BE SEEN IN PRIMARY CARE WITHIN 24 HOURS

- First episode of vertigo.
- Symptoms worsened by changes in head position.
- Symptoms improve, but do not completely settle when the head is kept still.
- Tinnitus or loss of hearing.



GREEN FLAGS

- Symptoms totally resolve within 60 seconds when the head is kept still.
- Symptoms totally resolve following an Epley manoeuvre.

14.1 Medicine contraindications and cautions

Known severe allergy is a universal contraindication.

ADENOSINE

- ✗ Sick sinus syndrome without internal pacemaker
- ✗ Previous 2nd or 3rd degree heart block without internal pacemaker
- ✗ Heart transplantation without internal pacemaker

- ➡ Asthma or COPD
- ➡ WPW syndrome with a rhythm that could be fast AF

ADRENALINE

- ✗ None

- ➡ Myocardial ischaemia
- ➡ Tachydyssrhythmia

AMIODARONE

- ✗ Known severe allergy to iodine
- ✗ VT secondary to cyclic antidepressant poisoning

- ➡ None if the patient is in cardiac arrest
- ➡ Poor perfusion/signs of low cardiac output
- ➡ Hypotension
- ➡ AF associated with sepsis
- ➡ Sick sinus syndrome without internal pacemaker
- ➡ Previous 2nd or 3rd degree heart block without internal pacemaker
- ➡ Pregnancy

AMOXICILLIN/CLAVULANIC ACID

- ✗ Known severe allergy to penicillins
- ✗ Anaphylaxis to any beta-lactam antibiotic

- ➡ None

ASPIRIN

- ✗ Third trimester of pregnancy

- ➡ Known bleeding disorder
- ➡ Clinically significant bleeding
- ➡ Known worsening of bronchospasm with NSAIDs

ATROPINE

- ✗ None

- ➡ Myocardial ischaemia

CALCIUM CHLORIDE

- ✗ None

- ➡ None

CEFTRIAXONE

- ✗ Anaphylaxis to cephalosporins

- ➡ None

CLOPIDOGREL

- ✗ None
- ⊖ Clinically significant bleeding
 - ⊖ At risk of bleeding
 - ⊖ Pregnancy

DROPERIDOL

- ✗ None
- ⊖ Parkinson's disease
 - ⊖ Concurrent administration of other sedatives
 - ⊖ Intoxication
 - ⊖ Elderly and/or frail

ENOXAPARIN

- ✗ None
- ⊖ Clinically significant bleeding
 - ⊖ At risk of bleeding
 - ⊖ Pregnancy

FENTANYL

- ✗ Unable to obey commands (exceptions: administration for RSI, end of life care and post intubation)
- ✗ Respiratory depression
- ⊖ Aged < 1 year
 - ⊖ At high risk of respiratory depression
 - ⊖ Labour
 - ⊖ Concurrent administration of other opiates, ketamine or midazolam
 - ⊖ Elderly and/or frail
 - ⊖ Signs of shock

GENTAMICIN

- ✗ Pregnancy
- ⊖ None

GLUCAGON

- ✗ None
- ⊖ None

GLUCOSE (ORAL)

- ✗ None
- ⊖ None

GTN (SPRAY AND PATCH)

- ✗ SBP < 100 mmHg
- ✗ HR < 40/minute
- ✗ HR > 150/minute
- ✗ VT
- ⊖ STEMI
 - ⊖ Small, frail or physiologically unstable
 - ⊖ Poor perfusion
 - ⊖ Dysrhythmia
 - ⊖ Erectile dysfunction medicine used in the last 24 hours
 - ⊖ Aortic or mitral stenosis

HEPARIN

- ✗ Aged ≥ 75 years
- ⊖ Clinically significant bleeding
 - ⊖ At risk of bleeding
 - ⊖ Pregnancy

HYDROCORTISONE

- ✗ None
- ⊖ None

IBUPROFEN

- ✗ Third trimester of pregnancy
- ⊖ Ibuprofen in the last 4 hours
 - ⊖ Abdominal pain, particularly if unwell or vomiting
 - ⊖ Aged ≥ 75 years
 - ⊖ Dehydration or shock
 - ⊖ Known renal impairment
 - ⊖ Known bleeding disorder
 - ⊖ Clinically significant bleeding
 - ⊖ Known worsening of bronchospasm with NSAIDs
 - ⊖ Taking warfarin
 - ⊖ Pregnancy

IPRATROPIUM

- ✗ None
- ⊖ None

KETAMINE

- ✗ Aged < 1 year
- ⊖ Unable to obey commands
 - ⊖ Active psychosis
 - ⊖ Hypertension
 - ⊖ Current myocardial ischaemia
 - ⊖ Conditions worsened by hypertension
 - ⊖ Concurrent administration of sedatives or midazolam
 - ⊖ Elderly and/or frail

LABETALOL

- ✗ Bradycardia
- ✗ Hypotension
- ⊖ 1st degree heart block
 - ⊖ Sick sinus syndrome without internal pacemaker
 - ⊖ Previous 2nd or 3rd degree heart block without internal pacemaker
 - ⊖ Asthma or COPD
 - ⊖ Heart failure

1% LIGNOCAINE

- ✗ Local infection in area of injection
- ⊖ Taking an anticoagulant (ring blocks)

LORATADINE

- ✖ Aged < 1 year — Pregnancy

MAGNESIUM

- None Hypotension

METARAMINOL

- None Bradycardia

METHOXYFLURANE

- | | |
|---|--|
| <ul style="list-style-type: none">✗ Personal or family history of malignant hyperthermia✗ Unable to obey commands✗ Known renal impairment✗ Methoxyflurane in last week | <ul style="list-style-type: none">✗ Aged ≥ 75 years✗ Pre-eclampsia✗ Confined space |
|---|--|

METOPROLOL

- ✗ Bradycardia
 - ✗ Hypotension
 - 1st degree heart block
 - Sick sinus syndrome without an internal pacemaker
 - Previous 2nd or 3rd degree heart block without an internal pacemaker
 - Asthma or COPD
 - Heart failure

MIDAZOLAM

- ✗ None
 - Concurrent administration of opiates, ketamine or other sedatives
 - Intoxication
 - Elderly and/or frail

NALOXONE

- None Chronic opiate use

OLANZAPINE

- ✖ Poisoning with an antipsychotic, for example quetiapine or risperidone
 - ➊ Pregnancy
 - ➋ Intoxication
 - ➌ Elderly and/or frail

ONDANSETRON

- ✖ Aged < 1 year - None

OXYTOCIN

- None None

PARACETAMOL

✗ None

- ⊖ Taken paracetamol in last 4 hours
- ⊖ Abdominal pain, particularly if unwell or vomiting
- ⊖ Known severe liver disease

PREDNISONE AND PREDNISOLONE

✗ None

- ⊖ Aged < 5 years with asthma

PROMETHAZINE

✗ None

- ⊖ Reduced level of consciousness
- ⊖ Elderly
- ⊖ Confusion
- ⊖ Hypotension

ROCURONIUM

✗ ETT placement not confirmed by capnography
(does not apply if indication is for RSI)

- ⊖ Predicted difficult intubation (only applies if indication is for RSI)
- ⊖ If rocuronium indicated following ETT intubation:
 - Chronic muscle weakness
 - Adult with poor prognosis

ROPIVACAINE

✗ Local infection at site of injection

- ⊖ Taking an anticoagulant

SALBUTAMOL

✗ None

- ⊖ None

8.4% SODIUM BICARBONATE

✗ None

- ⊖ IV access via a small vein

SUXAMETHONIUM

✗ Personal or family history of malignant hyperthermia

✗ Pre-existing paraplegia or quadriplegia

✗ Muscle disorder with long term weakness

✗ Hyperkalaemia strongly suspected

- ⊖ Predicted difficult intubation

TENECTEPLASE

- ✗ Suspected aortic dissection
- ✗ Major surgery, major trauma or severe brain injury in last 6 weeks
- ✗ Intracranial surgery in last 6 months
- ✗ Ischaemic stroke in last 6 months
- ✗ Previous intracerebral haemorrhage
- ✗ Known cerebral aneurysm, AVM or tumour

- ⊖ Clinically significant bleeding
- ⊖ > 10 mins of CPR
- ⊖ Non-compressible vascular puncture in last 24 hours
- ⊖ Internal bleeding in last 6 weeks
- ⊖ Lumbar puncture or epidural insertion in last 6 weeks
- ⊖ TIA in last 3 months
- ⊖ Known bleeding disorder
- ⊖ Taking an anticoagulant
- ⊖ SBP > 180 mmHg or DBP > 110 mmHg
- ⊖ Pregnant or less than 2 weeks postpartum
- ⊖ Time of symptom onset > 12 hours ago
- ⊖ Dependent on others for ADL
- ⊖ Other disease significantly shortening life expectancy
- ⊖ Very frail

TRAMADOL

- ✗ Aged < 12 years

- ⊖ Tramadol taken in last 4 hours
- ⊖ Abdominal pain, particularly if unwell or vomiting
- ⊖ Aged ≥ 75 years
- ⊖ Confusion
- ⊖ Pregnancy

TRANEXAMIC ACID

- ✗ Trauma when tranexamic acid will be administered more than 3 hours after the time of injury
- ⊖ None

VALPROATE

- ✗ None
- ⊖ None

Asthma non-transport checklist

► Flow chart on pg18

EMTs may recommend that a patient aged greater than or equal to 12 years with mild to moderate asthma is not transported to a medical facility by ambulance, provided the patient has clearly improved with bronchodilators via an MDI, no bronchodilators have been administered by nebuliser and all the non-transport criteria (see below) are met.

Paramedics and ICPs may recommend that a patient aged greater than or equal to 12 years with mild to moderate asthma is not transported to a medical facility by ambulance, provided the patient has clearly improved with bronchodilators via an MDI or a maximum of one administration of nebulised bronchodilators, and all the non-transport criteria (see below) are met.

All the following criteria must be met:

- Known asthma.
- Talking in full sentences.
- An $\text{SpO}_2 \geq 94\%$ when breathing air.
- Observed by ambulance personnel for a minimum of 20 minutes following completion of the last bronchodilator administration.
- Observed to mobilise normally.
- A PEFR $> 70\%$ of their normal PEFR (do not use this if the patient does not normally use a PEFR meter).
- Able to see a doctor (preferably their own GP) within two days.
- Provided with a prednisone pack (if appropriate), an information sheet and the information within it is explained to them and to any carers.

If the patient has signs of a chest infection (for example fever or purulent sputum), the patient should be seen by a doctor within 12 hours. This should usually be in primary care (preferably by their own GP) if all of the other non-transport criteria are met.

COPD non-transport checklist

► Flow chart on pg19

EMTs may recommend that a patient with mild to moderate COPD is not transported to a medical facility by ambulance, provided the patient has clearly improved with bronchodilators via an MDI, no bronchodilators have been administered by nebuliser and all the non-transport criteria (see below) are met.

Paramedics and ICPs may recommend that a patient with mild to moderate COPD is not transported to a medical facility by ambulance, provided the patient has clearly improved with bronchodilators via an MDI or a maximum of one administration of nebulised bronchodilators, and all the non-transport criteria (see below) are met.

All the following criteria must be met:

- Known COPD.
- Improves to their usual respiratory state.
- An $\text{SpO}_2 \geq 88\%$ when breathing air.
- Observed by ambulance personnel for a minimum of 20 minutes following completion of the last bronchodilator administration.
- Observed to mobilise in a way that is normal for the patient.
- Able to see a doctor (preferably by their own GP) within two days.
- Provided with a prednisone pack (if appropriate), an information sheet and the information within it is explained to them and to any carers.

If the patient has signs of a chest infection (for example fever or purulent sputum), the patient should be seen by a doctor within 12 hours. This should usually be in primary care (preferably by their own GP) if all of the other non-transport criteria are met.

Hypoglycaemia non-transport checklist

► Flow chart on pg59

The patient may receive treatment for hypoglycaemia and be given a clear recommendation that transport by ambulance to a medical facility is not required, provided all of the following criteria are met.

All the following criteria must be met:

- It is an isolated single episode.
- It is not due to overdose (including accidental) of insulin or oral hypoglycaemics.
- It is not complicated by seizure or clinically significant injury.
- The patient recovers fully and can mobilise normally.
- The blood glucose concentration is > 3.5 mmol/litre, ten (or more) minutes after glucagon or the last glucose administration.
- A competent adult can stay with the patient for the next four hours.
- The patient eats a meal (preferably with complex carbohydrates).
- The patient is given the hypoglycaemia information sheet, which is explained to them and the accompanying adult.

The patient must be given a clear recommendation to have their treatment reviewed (for example by their GP or diabetes service personnel). If the patient is aged less than or equal to 18 years or has been recently diagnosed with diabetes, this review must occur within 24 hours.

Seizures non-transport checklist

► Flow chart on pg63

The patient must receive a clear recommendation to be transported to an ED by ambulance if this is the first time they have had a seizure, unless the cause is clearly recreational drug use and the patient has recovered to be able to mobilise safely.

The patient may receive a clear recommendation not to be transported to a medical facility by ambulance, even if midazolam has been administered, provided all of the following criteria are met.

All the following criteria must be met:

- Ⓐ Has known epilepsy with no significant change in their usual pattern of seizures, or has recreational drug poisoning.
- Ⓐ Has not been injured.
- Ⓐ Has recovered to a safe postictal state.
- Ⓐ Can be left in the care of a competent adult.
- Ⓐ Has received a maximum of one dose of parenteral midazolam by ambulance personnel.
- Ⓐ Is instructed to see their GP within 72 hours for a review of their treatment.

Cardioversion checklist

- Ⓐ Place pads in either the apex/sternum (recommended) or anterior/posterior position, in addition to ECG electrodes.
- Ⓐ Ensure the defibrillator is in manual mode.
- Ⓐ Select a lead with a visible R wave and ensure that artefact is minimised.
- Ⓐ Select synchronised mode.
- Ⓐ Confirm there are detection symbols with most QRS complexes.
- Ⓐ Ensure the patient has received adequate sedation if indicated.
- Ⓐ Select maximum joules, charge the defibrillator and confirm everyone is clear.
- Ⓐ Press and hold the shock button until the shock is delivered.
- Ⓐ Determine the rhythm and reassess vital signs.
- Ⓐ If administering a second cardioversion, confirm the defibrillator is still in synchronised mode and the patient is adequately sedated.

Pacing checklist

► Flow chart on pg36

- ✓ Place the pads in either the anterior/posterior (recommended) or apex/sternum position in addition to ECG electrodes.
- ✓ Select a lead with a visible R wave and ensure artefact is minimised.
- ✓ Select pacing.
- ✓ Confirm there are detection symbols with most QRS complexes.
- ✓ Confirm pacing is in demand mode (not applicable to all models).
- ✓ Set the pacing rate to 70/minute.
- ✓ Select current and increase this until pacing capture occurs. Confirm there is a pacing spike before each QRS complex.
- ✓ Increase the current 10 mA above the capture threshold.
- ✓ Administer fentanyl IV and add ketamine IV if required.
- ✓ Confirm there is mechanical capture with a palpable pulse, an improvement in the SpO₂ waveform or other signs of increased cardiac output.
- ✓ Increase the pacing rate to 80/minute if there is electrical capture, but no signs of increased cardiac output.
- ✓ Change to fixed or non-demand mode (not applicable to all models) if pacing is ineffective due to artefact.

Fibrinolytic therapy/PCI checklist

► Flow chart on pg28

Does the patient have any absolute contraindications to fibrinolytic therapy?

- Suspected aortic dissection.
- Major surgery, major trauma or severe brain injury within the last six weeks.
- Intracranial surgery within the last six months.
- Ischaemic stroke within the last six months.
- Previous intracerebral haemorrhage.
- Known cerebral aneurysm, arteriovenous malformation or tumour.

Does the patient have any cautions to fibrinolytic therapy?

- More than 10 minutes of CPR.
- Non-compressible vascular puncture (including organ biopsy) within the last 24 hours.
- Internal bleeding within the last six weeks.
- Lumbar puncture or epidural insertion within the last six weeks.
- TIA within the last three months.
- Known bleeding disorder.
- Taking an anticoagulant. If taking warfarin document last known INR result if possible.
- Systolic BP > 180 mmHg or diastolic BP > 110 mmHg.
- Known to be pregnant or < two weeks postpartum.
- The time of onset of symptoms was greater than 12 hours ago.
- The patient is dependent on others for their activities of daily living.
- The patient has another disease that significantly shortens their life expectancy.
- The patient is very frail.

Commencing mechanical ventilation checklist

- ✓ Ensure adequate sedation and neuromuscular blockade.
- ✓ Connect oxygen source to ventilator and check supply.
- ✓ Connect ventilator to electrical supply if required.
- ✓ Connect ventilator circuit/tubing if not already in place.
- ✓ Test ventilator and circuit/tubing.
- ✓ Select ventilation mode.
- ✓ Set initial tidal volume:
 - 600 ml for a tall adult.
 - 500 ml for an adult of average height.
 - 7 ml/kg (rounded off to the nearest 10 kg) for a child.
- ✓ Set initial ventilation rate:
 - 14/minute for an adult.
 - 16/minute for a child \geq 30 kg.
 - 20/minute for a child $<$ 30 kg.
- ✓ Set maximum inspiratory pressure alarm to 40 cmH₂O.
- ✓ Set I:E ratio to 1:2.
- ✓ Set FiO₂, usually commencing on 1.0 (100% oxygen).
- ✓ Set PEEP.
- ✓ Turn ventilator on and connect circuit/tubing to the patient.
- ✓ Check ventilation, oxygenation, monitoring and vital signs.
- ✓ Ensure tubing is secured.

Defibrillator failure checklist

Use this checklist if a defibrillator fails and there is not another defibrillator (including an AED) immediately available. At each defibrillator intervention, pause briefly to determine if the problem has been fixed.

- ☒ Task specific personnel to focus on resuscitating the patient.
- ☒ Task specific personnel to focus on troubleshooting the defibrillator.
- ☒ Call Comms and ensure another vehicle is responding.
- ☒ Ensure the pads are attached and connected.
- ☒ Ensure the ECG leads are attached.
- ☒ Change the lead shown on the screen so that the rhythm is visible.
- ☒ Turn the defibrillator off for 30 seconds and turn it back on again.
- ☒ Remove and replace the batteries, utilising spare batteries if possible.
- ☒ Attach and connect a new set of pads.
- ☒ Switch to automatic mode if in manual mode.
- ☒ Turn the defibrillator off for 30 seconds and turn it back on again.

Log a reportable event if you reach the point of turning the defibrillator off for 30 seconds.

Preparation for RSI checklist

This checklist is to be used by personnel to aid preparing a patient for RSI, when waiting for an appropriate ICP to arrive.

- ✓ Keep the patient warm.
- ✓ Attach nasal prongs without oxygen.
- ✓ Pre-oxygenate by mask.
- ✓ Attach monitor.
- ✓ Prepare capnography.
- ✓ Gain IV access, preferably in two sites.
- ✓ Prepare a running line of 0.9% sodium chloride.
- ✓ Position the patient for optimal airway control.
- ✓ Place an ETT holder under the patient's head.
- ✓ Ensure suction is working and turn it off.
- ✓ Prepare a manual ventilation bag with PEEP valve.
- ✓ Obtain vital signs.
- ✓ Update the responding ICP.
- ✓ Maximise space and clear away unnecessary equipment.
- ✓ Consider travelling toward backup.

RSI checklist

Flow chart on pg98

Ⓐ Roles assigned and team briefed:

- a) Airway.
- b) Airway assistant.
- c) Drugs and monitoring.

Ⓐ Patient prepared:

- a) Pre-oxygenation. Nasal prongs in place.
- b) Position optimised.
- c) IV access patent. Running line attached.
- d) 0.9% sodium chloride IV bolus if indicated.

Ⓐ Monitoring attached and visible:

- a) Baseline vital signs.
- b) Pulse oximetry and capnography.

Ⓐ Equipment checked and ready:

- a) Manual ventilation bag with PEEP valve set to minimum 5 cmH₂O.
- b) Oropharyngeal airway.
- c) Laryngoscope.
- d) ETT. Cuff checked. Syringe containing 5 ml of air.
- e) ETT holder in place.
- f) Suction checked and in position.
- g) Bougie.
- h) LMA and cricothyroidotomy equipment out.

Ⓐ Drugs drawn up and doses confirmed:

- a) Metaraminol.
- b) Fentanyl.
- c) Ketamine.
- d) Neuromuscular blocker.
- e) Post intubation sedation.
- f) Rocuronium.
- g) Consider atropine

Ⓐ Failed intubation plan communicated.

Post intubation checklist Flow chart on pg102

- ✓ Confirm placement with capnography. Note the ETCO₂ level and waveform.
- ✓ Examine for signs of bronchial intubation and adjust the ETT depth if required.
- ✓ Secure the ETT and note the length at lips.
- ✓ Measure vital signs.
- ✓ Administer sedation and analgesia in combination with neuromuscular blockade if required.
- ✓ Check the oxygen supply.
- ✓ Check the ETT cuff. Ensure the minimum amount of air required to provide a seal.
- ✓ Ensure a manual ventilation bag is immediately available if a mechanical ventilator is being used.

Cardiac arrest checklist

► Flow chart on pg38

Identify a team leader. The team leader must ensure:

- ✓ Roles allocated and confirmed.
- ✓ Space maximised and layout functional.
- ✓ Two minute cycles, timer on if available.
- ✓ CPR feedback device on if available.
- ✓ Metronome on if available.
- ✓ Defibrillator screen visible to the team leader.
- ✓ Airway adjunct or ETT in place and ventilation adequate.
- ✓ Suction positioned at the head of the patient.
- ✓ ETCO₂ attached and waveform visible if LMA or ETT placed.
- ✓ Oxygen flow and supply adequate.
- ✓ IV/IO access secure, two sites if possible.
- ✓ Consider underlying and reversible causes.
- ✓ Initiate documentation.
- ✓ Communication with family/bystanders.
- ✓ Extrication plan if ROSC occurs.

Post cardiac arrest checklist

► Flow chart on pg40

- ☑ Airway and ventilation are adequate/secure.
- ☑ Backup for RSI called for if indicated.
- ☑ ETCO₂ 35-45 mmHg if ventilated.
- ☑ Sedation, analgesia and neuromuscular blockade if indicated.
- ☑ 12 lead ECG.
- ☑ SpO₂ 94-97% and oxygen flow adjusted if indicated.
- ☑ IV access secure.
- ☑ BP above target if not obeying commands.
- ☑ Cover with single sheet if not obeying commands.
- ☑ Transmit cardiac arrest data if possible.

Non-transport pause and checklist

If a patient is being given a recommendation by ambulance personnel that transport to a medical facility by ambulance is not required, the crew must pause briefly to go through the non-transport checklist (below) and agree that non-transport is the right decision. If consensus is unable to be easily achieved, personnel should have a low threshold for seeking clinical advice or recommending the patient is transported.

The following non-transport checklist must be completed prior to leaving the scene:

- The patient has been fully assessed including a set of vital signs and appropriate investigations.
- No vital signs (excluding temperature) are significantly abnormal.
- Serious illness or injury has been reasonably excluded.
- No red flags requiring transport to ED are present.
- The patient is seen to mobilise (when able to normally do so), noting that if the patient is unable to mobilise there must be a minor or long-standing condition preventing this.
- The patient and/or caregivers have been given a verbal and written explanation of when to seek further clinical advice.



Handover

- I** Identification of the patient.
- M** Mechanism of injury or medical complaint.
- I** Injuries identified or information related to the medical complaint.
- S** Signs and symptoms.
- T** Treatment provided and trends.
- A** Allergies.
- M** Medicines.
- B** Background including previous medical history.
- O** Other (including information on family and social situation).

Major incident sitrep

- M** Major incident declaration.
- E** Exact location of incident.
- T** Type of incident.
- H** Hazards (significant) identified.
- A** Access and egress.
- N** Number (estimated) of patients.
- E** Emergency services already present and extra resources required.



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Here for Life

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