



# Ambulance Clinical Reference Book

Published 2022

Papua New Guinea Version

# Ambulance Protocols

To view the full St John Clinical Protocols – Scan here →  
[www.clinical.stjohn.org.pg](http://www.clinical.stjohn.org.pg)



## Get clinical advice

Unsure what to do next? Need authority to give a medicine?

Just want to check something you've forgotten?

**No worries. Call the Duty Clinical Advisor (ClinAdv).**

These experienced doctors and paramedics are more than willing to be woken up at 2am to give you help and friendly advice. No question is stupid. **Available 24hrs.**



# BASIC TREATMENT PROTOCOL

<b>Assess</b>	<p><b>Check for Danger:</b> to yourself, others and the patient. <b>Primary survey:</b> ABCDE <b>Call for backup:</b> call for clinician assistance and/or clinical advice if required <b>Vitals:</b> pulse, RR, SpO<sub>2</sub>, temp. <b>Secondary survey:</b> Complete head to toes assessment</p>
<b>Oxygen</b>	<p><b>Give</b> oxygen as indicated in the protocol to maintain SpO<sub>2</sub> ≥ 94%</p>
<b>Position</b>	<p><b>Unconscious:</b> put him lateral (recovery position) <b>Potential spinal injury:</b> support head/neck at all times in neutral position <b>Other problem:</b> allow him to get in most comfortable position</p>
<b>Reassure &amp; Respect</b>	<p><b>Reassure</b> the patient constantly. The best type of reassurance is calmly, confidently and competently performing your assessment and treatment. Give reassurance to the unconscious patient. Hold the patient's hand and look the patient in the eyes when talking to them.</p> <p><b>Treat</b> the patient and their family with respect, kindness, consideration, and maintain their privacy and confidentiality.</p>
<b>Monitor</b>	<p><b>Continuously monitor</b> and reassess your patient while you are with them. <b>Measure vital signs</b> every 20 minutes or more frequently.</p>

# PRIMARY SURVEY

Focus area	Vitals	Consider urgent interventions
<b>Airway</b>	Patency	<ul style="list-style-type: none"><li>- <b>Manual airway</b> manoeuvres: jaw thrust...</li><li>- <b>Airways:</b> OPA / NPA / LMA</li></ul>
<b>Breathing</b>	RR, auscultate, trachea, effort, SpO2	<ul style="list-style-type: none"><li>- BVM / O2 therapy</li><li>- Chest seal / <b>decompression</b></li></ul>
<b>Circulation</b>	Pulse rate, Capillary refill	<ul style="list-style-type: none"><li>- CPR / defibrillation</li><li>- Arterial tourniquet</li><li>- Wound packing</li><li>- Pelvic binder</li><li>- <b>IV / fluids (consider metaraminol / TXA)</b></li></ul>
<b>Disability</b>	GCS, pupils	<ul style="list-style-type: none"><li>- Immobilise spine / pelvis / femur fractures</li></ul>
<b>Exposure</b>	Temperature Look and feel	<ul style="list-style-type: none"><li>- Passively cool the patient if temperature <b>high</b>;</li><li>- Keep the patient warm and dry if temperature <b>low</b>.</li></ul>



# SECONDARY SURVEY

Focus area		Consider urgent interventions
Full set of vitals	RR, PR, SpO2, BP, BGL	- Repeat RR, PR, BP, SpO2 every 5 – 10 mins.
Give comfort measures	Analgesia, reassurance	- Paracetamol +/- ibuprofen +/- fentanyl
History		- Get a thorough history - SAMPLE, PQRST
Head to toes		- Check patient from head to toes

## Considerations

Management of a patient with a head injury or neurological illness depends on careful and ongoing assessment of the patient's general neurological function.

The first observations conducted pre-hospital provide the basis for monitoring changes in condition throughout the patient's care in hospital.

### Document all findings including important negative findings, for example:

- No neck pain or tenderness.
- Pupils equal and reactive to light (PERL, size 4mm)
- No abnormalities detected (NAD) to Colour / Warmth / Movement / Sensation (CWMS) to distal extremities

### Specific observations that could be helpful:

- **Respirations:** observe adequacy, depth, frequency, regularity and any abnormal breath sounds.
- **Face:** any drooping of facial muscles – which side? Can patient swallow?
- **Speech:** slurred or difficulty speaking?
- **Movement:** Observe whether all extremities move with equal precision and strength. Note any tremors.
- **Sensation:** Observe for absent, abnormal or normal sensation.

# SECONDARY AND CENTRAL NERVOUS SYSTEM (CNS) SURVEY

## Objective

A systematic head-to-toe survey used to detect problems that are not always obvious and do not necessarily pose an immediate threat to life but could become serious; uses precise responses to specific stimuli to assess presence and extent of damage to the central nervous system.

## Head

**Scalp:** Run fingers over scalp without applying excessive pressure, assess for any deformities/abnormalities, bleeding.

**Facial Structure:** Assess for deformity, asymmetry, swelling or bleeding and tenderness, check sensation to different areas of the face and record any irregularities.

**Eyes/nose/ears:** Assess for CSF or bleeding, check pupil size and ocular motor function. Check pupil reaction to light with a pupil torch. Enquire about any hearing disturbances or abnormalities.

## Abdomen

- Assess for injury, bruising, distension, rigidity, and deformity. Palpate abdomen while assessing for any indication of discomfort.
- Assess sensory function to touch, and get patient to verbally identify area being touched.

## Pelvis

- Check pelvis for stability, by applying gentle downward pressure.
- Check for bleeding, tenderness, deformity, and abnormal positioning of legs and hips.
- Check sensory function on opposite sides.

## Neck

Assess cervical spine for mid-line tenderness, pain or obvious deformity. Prevent movement when assessing the neck of the patient. Assess if swallowing action is present visually, by instructing patient to swallow.

## Shoulders

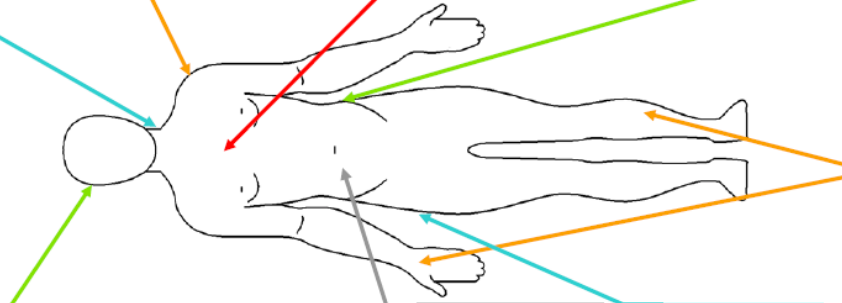
- Palpate the shoulders bony parts and assess for deformity, crepitus, bruising and swelling/pain.
- Apply gentle restraining force to the patient's shoulders, and instruct him/her to shrug shoulders, assessing strength and equality of muscle action.

## Chest

- Get the patient to inhale deeply.
- Assess for deformity, tenderness, bruising and paradoxical movement, look for open/sucking chest wounds, palpate the chest wall.
  - Auscultate all sites
  - Check for injuries/bruising
  - Check sensory reaction to touch, comparing left to right side, ask patient to verbally identify area being touched without visualising the action.

## Back

- Palpate the back of the patient, with minimal movement, assess for injury, tenderness, bleeding, deformity
- Assess sensory function



## Limbs

- Palpate limbs, assess for deformities, crepitus, swelling, bruising and needle marks.
- Test strength and motor functions by applying gentle restraining force while instructing the patient to push and/or pull against your hands.
- Assess range of movement.



# Pulse & Respiration

## Indication

- Measure and document patient's pulse and respiration
- To verify correlation with 'heart rate' displayed on pulse-oximeter or monitor

## Consideration

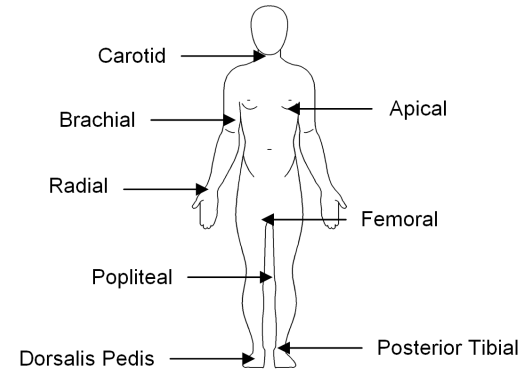
- Do NOT use your thumb to palpate the pulse
- Distract the patient's attention from respirations when measuring

## Procedure

- All relevant infection control methods to be utilised.
- Locate the pulse best suited for assessment on the patient's body.

## Pulse

- Explain the procedure to the patient.
- Palpate the site with the index and middle finger, ensuring not to apply too much pressure.
- Measure the pulse for a total of 15 seconds noting the rate, character and strength.
- The total obtained after 15 seconds is multiplied by 4 to obtain the pulse rate per minute.



## Respirations

- Explain the procedure to the patient.
- Visualise the chest rise and fall.
- Measure the respirations for a total of 30 seconds noting the rate, rhythm, effort, depth and any accessory muscle use.
- The total obtained after 30 seconds is multiplied by 2 to obtain the respiration rate per minute.

# Pulse Oximetry

## Indication

- To monitor peripheral arterial oxygen saturation (SpO<sub>2</sub>).

## Consideration

- Compare the heart rate reading on the unit to a palpable Pulse AND the reading on the cardiac monitor (if attached) to ensure accuracy.
- It may be necessary to swap fingers on occasion to ensure accuracy.
- False readings may occur with:
  - Excess ambient light
  - Abnormal haemoglobins, (e.g. carbon monoxide poisoning, anaemia)
  - Hypotension (poor peripheral perfusion)
  - Hypothermia (poor peripheral perfusion)
  - Nail polish, nicotine staining and dirt.
- Using the same arm simultaneously with blood pressure monitoring

## Procedure for pulse oximeter

- Apply the probe to the most appropriate finger.
- Pulse oximeter should turn on automatically (the pulse oximeter may also have a power button on the front of the unit)
- Wait for the device to sense perfusion and stabilise the readings



# Adult Vital Sign Reference Guide

<u>Vital</u>	Very low	Low	Normal	High	Very high
<b>Respiration</b>	<8	-	8 - 25	26+	35+
<b>SpO2</b>	<80	<94	95 - 100%		
<b>Pulse</b>	<40	<60	60 - 100	100+	130+
<b>BP Systolic</b>	<80	<90	90 - 135	135+	-
<b>BGL</b>	<2	<3.5	3.5 – 8	8+	17
<b>Temperature</b>	<32	34.0	34.1 – 37.4	37.5+	40+

**Red zone = potentially life threatening situation –**

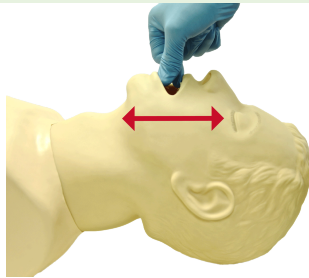
If red zone, you should call the authorised clinical advisor for clinical advice.

# Basic Airway Management

## Indications

Basic techniques to open and maintain a patent airway in patients without reflexes.

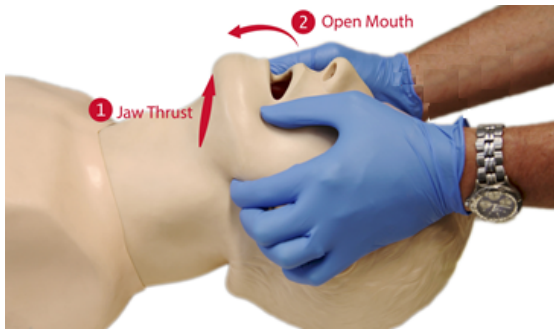
The **lateral position** is a form of basic airway management in the unconscious patient who is breathing adequately.



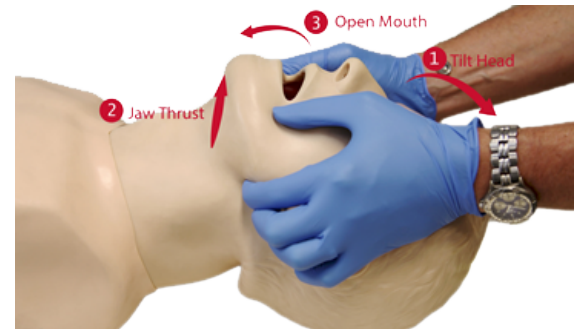
Cross-finger technique



Jaw thrust



Double-airway manoeuvre



Triple-airway manoeuvre

# Suction units

## Indications

To clear secretions in order to maintain a patent airway.



### NeVac Suction

- oxygen powered
- single use cannister.
- replace cannister every use
- no filter required



### EcoVac Suction

- oxygen powered
- reusable cannister
- change the filter every time



### Spencer Jet Suction

- battery powered
- reusable cannister
- clean between use
- keep battery recharged

**Never turn a cannister upside down when it has fluid in it.  
The fluid will damage the filters.**

# Bag Valve Mask Ventilation

## Success

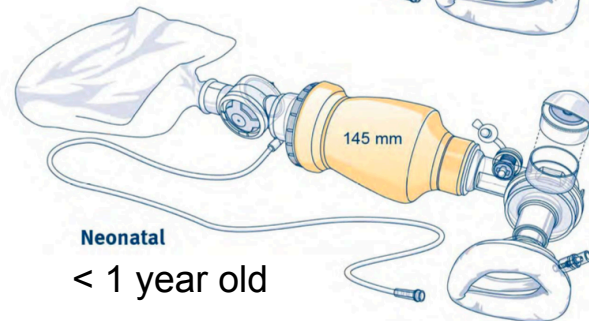
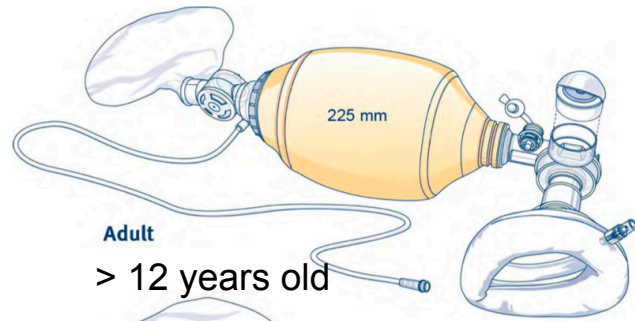
Successful ventilation of a patient can be confirmed by factors such as:

- Rise and fall of chest
- Auscultation of lung bases and apexes, with air movement throughout
- Rise in oxygen saturation ( $SpO_2$ )
- Reduction of cyanosis
- Waveform capnography

## Ventilation Rate

The following ventilation rates are a guide for normal respiration values. **DO NOT EXCEED.**

Age	Breaths per minute
Newborn	40 - 60
< 1 yr	30 - 40
1 - 2 yrs	25 - 35
2 - 5 yrs	25 - 30
6 - 12 yrs	20 - 25
> 12 yrs	15 - 20
Adult	10 - 12





# Giving Oxygen

## Management principles when giving oxygen

- Aim for target saturations of between 94 – 98%.
- If target saturations cannot be maintained with chosen mask, then consider a higher level mask, e.g. if nasal cannula not achieving desired result, move to Hudson mask or non-rebreather mask with higher flow.
- Remember that some conditions can affect SpO2 readings, e.g. carbon monoxide poisoning and cold fingers or bright light.

Mask	Fraction of inspired air (FiO2)	Flow rate
Nasal cannula	24 – 35%	1 – 4 litres per minute <b>(only for inter-hospital patient transfer)</b>
Hudson mask (simple face mask)	40 – 60%	5 - 15 litres per minute
Non-rebreather	60 – 80%	10 – 15 litres per minute
Bag-valve-mask (Ambu-bag)	100%	15 litres per minute

# Giving Oxygen

## Protocol for SJA staff giving oxygen – St John's Guideline

**\*\*NEW GUIDELINES\*\* 21 Dec 2022**

Mask	SpO2	Flow Rate (litres per minute)
Nasal cannula	For Clinician Use Only	Clinician decision
Hudson mask (simple face mask)	SpO2 <94%	6
	SpO2 <90%	8
	SpO2 <85%	10
	SpO2 <80%	15
Nebuliser	Not applicable	8
Non-rebreather	SpO2 <85%	10 or 15
Bag-valve-mask (Ambu-bag)	Patient in critical respiratory failure or respiratory arrest.	10 or 15

Notes: If you are unsure what flow rate to use call for clinical advice.

Face mask must always give more than 6Lpm. Non-rebreather must give more than 10Lpm.

# Relief of Pain

**Appropriate pain management is important for patient comfort and recovery.**

**Measure** vital signs before giving pain relief, and measure regularly to confirm effectiveness and checking for possible adverse effects.

**Ask** the patient for their pain score before and after giving pain relief to assess effectiveness.

Pain level	Medication	Dose	Route	Repeat	Max. dose	Conditions
Mild to moderate	Paracetamol	> 12 years: 1,000mg	PO	4 hrs	Not to exceed 4,000mg over 24hr period	<ul style="list-style-type: none"> <li>- Can be given for severe pain if no alternative available</li> <li>- Ibuprofen and paracetamol have better effect when given together</li> <li>- Check protocols for contraindications and cautions.</li> </ul>
	Ibuprofen	>12 years: 400mg	PO	4 hrs	Not to exceed 1,600mg over 24hr period	
Moderate to severe	Fentanyl	< 70 years: 100mcg > 70 years: 50mcg	IM	20 mins	--	Repeat doses only if required for analgesia. Consider paracetamol and ibuprofen in addition.
Moderate to severe	Fentanyl	< 70 years: 50mcg > 70 years: 25mcg	IV	5 mins	--	IV for HEO / Paramedic use only.
Severe	Ketamine	1mg/kg	IM	0.5mg/kg	--	For severe traumatic pain if unresponsive to IV fentanyl. Repeat as needed.
Severe	Ketamine	10-20mg	IV	10mg Every 5 mins	--	

# IM Medicines (Age >12 year)

**Authority:** SJA Intern RNs are endorsed by the SJA Chief Medical Officer to give certain **intramuscular** emergency medicines to patients aged over 12 years according to this chart.

Indication	Medicine	Dose	Route	Repeat <i>If indicated</i>	Max. dose	Presentation	Preparation
<b>PAIN</b> Moderate to severe	<b>Fentanyl</b>	<b>50 mcg</b> (1mL)	IM	<b>10 mins</b> up to <b>3x</b>	<b>200</b> mcg	<i>100mcg in 2mL</i>	<i>Draw up 50 mcg (1ml) in a 1ml syringe.</i>
<b>SEIZURES</b> >5 mins duration.	<b>Midazolam</b>	<b>5 mg</b> (1mL)	IM	<b>10 mins</b> up to <b>3x</b>	<b>20</b> mg	<i>5mg in 1mL</i>	<i>Draw up 5 mg (1ml) in a 1ml syringe.</i>
<b>ANAPHYLAXIS</b>	<b>Adrenaline</b>	<b>300 mcg</b> (0.3mL)	IM	<b>5 mins</b>	No max dose	<i>1,000mcg in 1ml</i>	<i>Draw up 300 mcg (0.3mL) in a 1ml syringe</i>
<b>POST PARTUM</b>	<b>Oxytocin</b>	<b>10 units</b> (1mL)	IM	<b>No repeat</b>	-	<i>10 units in 1mL</i>	<i>Draw up 10 units (1mL) in a 1mL syringe.</i>

## Notes:

### **Paediatric doses:**

Interns shall seek authority from duty doctor/paramedic for paediatric medicine administration.

### **Repeat dose:**

Repeat means repeat only if indicated, e.g. only if the patient is still in pain or having seizure.

### **Oral Medicines:**

For **oral** medicines see: [www.clinical.stjohn.org.pg](http://www.clinical.stjohn.org.pg)

### **Help:**

If clinician uncertain about patient care, seek help from the duty doctor/paramedic.

**Intern RNs are not permitted to perform IV cannulation, nor give intravenous medicines or fluids unless specifically authorised.**

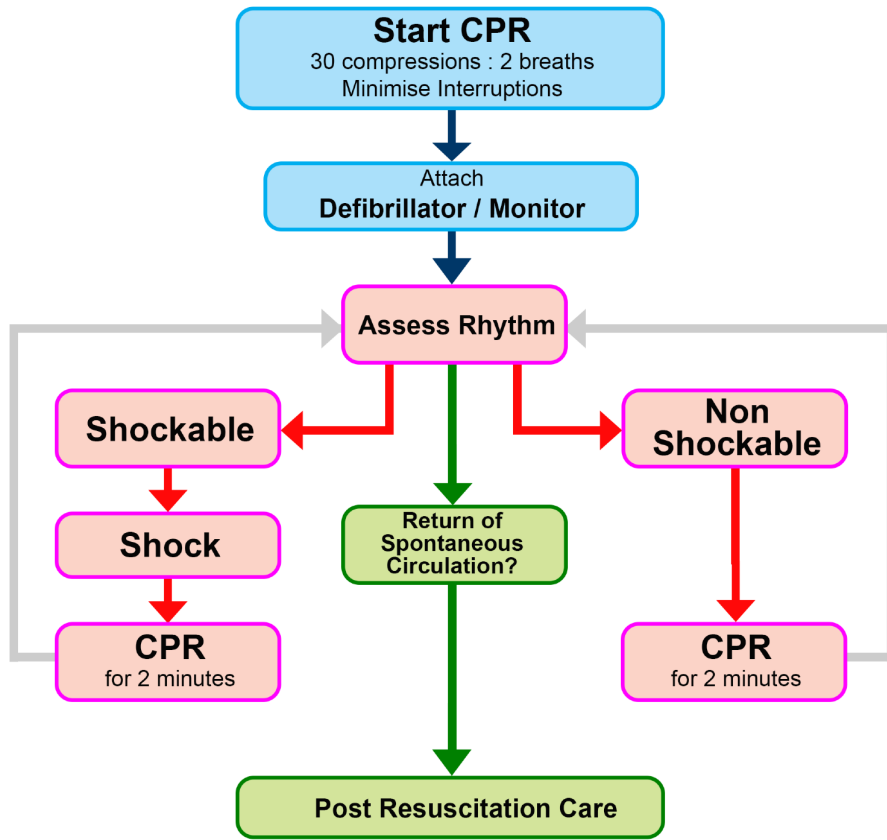
# MAJOR TRAUMA PRIORITIES

<b>M</b>	<b>Massive haemorrhage</b> <ul style="list-style-type: none"><li>- Stop massive bleeding</li><li>- blood sweep</li></ul>
<b>A</b>	<b>Airway</b> <ul style="list-style-type: none"><li>- Maintain open airway</li><li>- OPA / NPA</li></ul>
<b>R</b>	<b>Respiration</b> <ul style="list-style-type: none"><li>- O2</li><li>- Chest seal / decompress</li></ul>
<b>C</b>	<b>Circulation</b> <ul style="list-style-type: none"><li>- IV*</li><li>- TXA</li></ul>
<b>H</b>	<b>Head / Hypothermia</b> <ul style="list-style-type: none"><li>- Keep warm and dry</li></ul>

\*ALS take note: **PERMISSIVE HYPOTENSION IN TRAUMA**

1. Bleeding trauma patients need blood, not normal saline (N/S).
2. Only setup IV fluids (e.g. N/S) if **radial pulse can not** be felt.
3. If giving fluids, only give to maintain palpable radial pulse.
4. Once radial pulse is palpable, slow fluids to TKVO rate.

# Advanced Life Support for Adults



## During CPR

Airway adjuncts (LMA / ETT)  
 Oxygen  
 Waveform capnography  
 IV / IO access  
 Plan actions before interrupting compressions  
 (e.g. charge manual defibrillator)

## Drugs

### Shockable

- \* Adrenaline 1 mg after 2nd shock (then every 2nd loop)
- \* Amiodarone 300mg after 3 shocks

### Non Shockable

- \* Adrenaline 1 mg immediately (then every 2nd loop)

## Consider and Correct

Hypoxia  
 Hypovolaemia  
 Hyper / hypokalaemia / metabolic disorders  
 Hypothermia / hyperthermia  
 Tension pneumothorax  
 Tamponade  
 Toxins  
 Thrombosis (pulmonary / coronary)

## Post Resuscitation Care

Re-evaluate ABCDE  
 12 lead ECG  
 Treat precipitating causes  
 Aim for: SpO2 94-98%, normocapnia and normoglycaemia  
 Targeted temperature management



# Giving IV Fluids

[updated 04 JUN 2022]



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Papua New Guinea

IV Fluids are an important part of rehydration and resuscitation, but must be given carefully and only when required. Oral fluids are preferred to IV fluids when the patient can tolerate oral rehydration.

Indication	Conditions	Volume
<b>To Keep Vein Open (KVO)</b>	Used for critically ill patient that has (or at risk of) <b>significant deterioration</b> .	20 drops per minute (20 drops = 1ml) <div style="border: 1px solid black; padding: 5px; display: inline-block;">For the latest protocol go to <a href="http://clinical.stjohn.org.pg">clinical.stjohn.org.pg</a></div>
<b>Shock states and DKA</b>	E.g. <b>sepsis</b> , dehydration, anaphylaxis, neurogenic, DKA	<b>Adult:</b> 250ml boluses to a maximum of 2,000ml <b>Paediatric:</b> 10ml/kg over 5 – 10 minutes. Repeat once.
<b>Cardiac arrest</b>	If <b>hypovolaemia</b> is <b>believed</b> to be the <b>cause</b> of the cardiac arrest	<b>Adult/Paediatric:</b> 20ml/kg <b>Neonate:</b> 10ml/kg
<b>Post ROSC</b>	Reassess between each bolus dose	<b>Adult:</b> 250ml boluses to a maximum of 500ml <b>Paediatric:</b> 10ml/kg once, reassess between infusions
<b>Burns</b>	<b>Adult:</b> TBSA >25% <b>Paediatric:</b> TBSA >10%	<b>Adult:</b> 1 litre stat, followed by 1 litre over 1 hour <b>Paediatric:</b> 10ml/kg over 1 hr
<b>Haemorrhage (Trauma)</b>	- To maintain a <b>palpable radial pulse</b> <b>or</b> to maintain <b>Systolic BP &gt;70mmHg</b> . - Reassess between each bolus dose.	<b>Adult:</b> 250ml boluses (max. 2,000ml) <b>Paediatric:</b> 10ml/kg (max. 250ml bolus)
<b>Crush Injury</b>	Patient remains trapped	20ml/kg bolus doses titrated to effect. (max. 60mL/kg/hr)



# CARDIAC ARREST PREHOSPITAL ALS PRIORITIES

Always refer to ALS algorithm.  
Do ABCDE Assessment as indicated.

## 1. Compressions

Continuous, about 1/3 chest depth  
Aim for 100 – 120 compressions / min

## 2. Defibrillation

Check & charge every 2 minutes.  
Shock when shockable rhythm and indicated in ALS algorithm.

## 3. Airway

Use manual or OPA / NPA or LMA

## 4. Ventilation

**Manual/OPA/NPA:** give 2 ventilations every 30 compressions.  
**LMA:** give 1 ventilation every 15 compressions  
*(do not stop compressions to give ventilations when LMA in situ)*

## 5. IV Access

Obtain IV access when possible.  
*(Do not compromise compressions / defibrillation to obtain IV.)*

## 6. Adrenaline IV

Give as early as you possible, according to the ALS algorithm.

## 7. Reversible causes

Treat reversible causes where indicated and within your scope.



# ASTHMA

[updated 04 JUN 2022]



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Action	Description
<b>Primary Survey</b>	- Do <b>ABCDE</b> . Treat as you go. - Call for <b>Backup</b> if severe or life-threatening
<b>Airway</b>	RR, auscultate, effort, trachea, SpO <sub>2</sub> , – listen for wheezes
<b>Position</b>	- Position patient appropriately (sitting upright or position of comfort)
<b>Consider oxygen</b>	- Titrate SpO <sub>2</sub> to target (92 – 95% adult) (>95% children)
<b>Consider salbutamol if bronchospasm and SOB associated with wheeze</b>	<b>Salbutamol (nebulised with 6 – 8L/min oxygen)</b>  <b><u>Adult/Child &gt;6yo:</u></b> 5mg in 2.5ml, repeat a every 5 minutes as clinically required.  <b><u>Paediatric &lt;6yo:</u></b> 2.5mg in 2.5ml, repeat every 5 minutes as clinically required.
<b>Transport to hospital</b>	Urgent transport if serious or life-threatening.

# ASTHMA: NOTES OF CAUTION



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<b>Caution</b>	<b>Description</b>
<b>Contraindications for salbutamol</b>	Do not give salbutamol if <ol style="list-style-type: none"><li>1. you suspect patient has cardiogenic pulmonary oedema</li><li>2. the patient is less than 12 months old</li></ol>
<b>Use of a puffer</b>	The metered-dose inhaler (puffer) is equally as effective as nebulisation, in all asthma situations, where the patient is still able to adequately inhale.
<b>When to use Nebuliser</b>	Nebuliser is recommended where the patient loses the ability to inhale adequately.
<b>Be very careful leaving patients at home</b>	Always recommend asthma patient be transported to hospital for observation. Some patient may experience rebound asthma after receiving salbutamol. This means the patient feels better after the first salbutamol dose. After a while effects of the first salbutamol wears off and the patient has another exacerbation of asthma. This can happen after the ambulance leaves.

# ASTHMA SEVERITY ASSESSMENT

Parameter	Mild/moderate	Severe	Life-threatening
Body position	Sits upright	Sits hunched forwards	Sits hunched forwards
Speech	Talks in phrases	Talks in words	Talks in words
Level of consciousness	Normal	Agitated	Drowsy / confused
Respiratory rate	Increased but <30 breaths/min	> 30 breaths/min	>30 breaths/min
Accessory muscle use	No	Yes	Paradoxical breathing
Heart rate	100 – 120 bpm	>120 bpm	> 120 bpm or bradycardia
SpO <sub>2</sub>			


Source: Asthma exacerbation severity assessment criteria according to the Global Initiative for Asthma 2018

# CHEST PAIN / ACUTE CORONARY SYNDROME



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[updated 04 JUN 2022]

Action	Description
 <b>Primary Survey</b>	<ul style="list-style-type: none"><li>- Basic Treatment Protocol</li><li>- Do <b>ABCDE</b>. Treat as you go.</li><li>- Call for <b>Backup</b> if suspected acute myocardial infarction</li></ul>
<b>Reassurance</b>	Patient may feel very scared and need you to comfort them.
<b>Limit exertion</b>	By carrying the patient to reduce his/her cardiac workload
<b>Give Aspirin</b>	<i>Give 300mg aspirin as indicated (only if patient <math>\geq</math> 12YO)</i>
<b>Consider Oxygen</b>	Titrate oxygen to achieve SpO2 of $\geq$ 94%
<b>Obtain IV Access</b>	
<b>Consider Analgesia</b>	<ul style="list-style-type: none"><li>- Paracetamol</li><li>- <b>Fentanyl</b></li></ul>
<b>Transport</b> to hospital	Urgent transport.




# HYPOGLYCAEMIA

[updated 04 JUN 2022]

Action	Description (always refer to latest protocols online)
Primary Survey	<ul style="list-style-type: none"><li>- Basic Treatment Protocol</li><li>- Do <b>ABCDE</b>. Treat as you go.</li><li>- Call for <b>Backup if hypoglycaemic</b></li></ul>
Check vital signs	- <b>Check</b> BGL, temperature & SpO2
Consider glucose if BGL $\leq$ 3.5 mmol/L	<p><b>First preference:</b> Oral glucose if patient can swallow and obey commands. <i>Glucose gel PO 15g.</i></p> <p><b>Second preference:</b> IV glucose if patient cannot swallow and obey commands. <i>IV Glucose 10% - 150ml undiluted in normal saline as per protocols</i></p>
Notes:	<ol style="list-style-type: none"><li>1. Oral glucose is preferred if possible as it is better tolerated and less invasive.</li><li>2. Only give IV glucose if you measured BGL &lt;3.5mmol/L</li></ol>
<b>Transport</b> to hospital	Urgent transport. Code 3 to hospital if seizures continue.

# SEIZURES



Action	Description
 Primary Survey	<ul style="list-style-type: none"><li>- Basic Treatment Protocol</li><li>- Do <b>ABCDE</b>. Treat as you go.</li><li>- Call for <b>Backup</b></li></ul>
 Airway	<ul style="list-style-type: none"><li>- <b>Remove</b> all foreign objects from the patient's airway</li><li>- <b>Consider</b> nasopharyngeal airway (NPA)</li></ul>
 Check vital signs	<ul style="list-style-type: none"><li>- <b>Check</b> BGL, temperature &amp; SpO2</li></ul>
Consider sedation if seizures greater than <u>10min</u>	<ul style="list-style-type: none"><li>- <b>Adult:</b> <i>Midazolam 5mg IM repeat <u>once</u> after 10 mins.</i></li><li>- <b>Paediatric:</b> <i>Midazolam 0.2mg/kg (max 5mg), repeat <u>once</u> after 10 mins.</i></li></ul>
Consider <b>treatable</b> causes of seizure	<ul style="list-style-type: none"><li>- hypoglycaemia, eclampsia, hyperthermia...</li><li>- <b>treat</b> as appropriate</li></ul>
<b>Transport</b> to hospital	Urgent transport. Code 3 to hospital if seizures continue.

# SEPSIS



Ambulance Service  
Papua New Guinea

Sepsis needs rapid intervention

Priorities	More information	Scope
Give O2	If SpO2 <94%	Basic
<b>Start transport to hospital urgent</b>		
Obtain <b>IV access</b>		Advanced RN / HEO
Consider <b>IV fluid therapy</b>	Check SJA PNG Clinical Protocols if indicated	
Give <b>antibiotics</b>		
Urinary tract, abdomen, post-partum, <u>or</u> unknown	<ul style="list-style-type: none"> <li>• <b>1.2g amoxicillin + clavulanic acid IV,</b> <b>AND</b></li> <li>• <b>Gentamycin IV (do NOT give Gentamycin if pregnant)</b> <ul style="list-style-type: none"> <li>• 400 mg if &gt; 80kg</li> <li>• 320 mg if 60 – 80kg</li> <li>• 240 mg if &lt;60 kg</li> </ul> </li> </ul>	
Chest <u>or</u> suspected meningococcal septicaemia	• <b>2g ceftriaxone IV</b>	
Pregnant sepsis	• <b>1.2g amoxicillin + clavulanic acid IV</b>	

# SEPSIS

Sepsis is a life-threatening condition caused by the body's immune system responding to a bacterial infection.

**How can you identify sepsis?** An adult with sepsis may present with **one** or more of the following:




Criteria	Amber flags	Red flags
<b>Mental state</b>	Family concerned about mental status	New altered mental state
<b>Systolic BP</b>	<90mmHg (or drop of >40 from normal)	91 – 100mmHg
<b>Heart rate</b>	>91 per minute	>130 per minute
<b>Temperature</b>	35.1 – 36°C or >38°C	<35°C
<b>Respiratory rate</b>	21 – 24 per minute	>25 per minute
<b>SpO2</b>	Needs O2 to keep SpO2 >94%	Non-blanching rash
<b>Other</b>	Acute deterioration in functional ability	Not passed urine in 18hrs
	Trauma / surgery / procedure last 8 weeks	Lactate >2mmoL/L (if available)
	Immunosuppressed	
	Clinical signs of wound infection	



# MENTAL HEALTH EMERGENCIES



Ambulance Service  
Papua New Guinea

Action	Description
 Primary Survey	Do <b>ABCDE</b> . Treat as you go.
Use Situational Awareness	- Is the patient suicidal? - Does patient have dangerous objects?
 Call for backup	1. Police 2. Clinical Support
Check Vital Signs	- Check BGL & pulse oximetry
 Address organic causes (medical reasons)	Consider medical causes for behavioural disturbance, e.g., sepsis, malaria, meningitis, encephalitis
Transport to hospital	Use police assistance if required.

[updated 04 JUN 2022]

# Child Birth

[updated 04 JUN 2022]

Action	Advanced actions
Primary Survey	Basic Treatment Protocol
Measure vital signs	IV Access + cardiac monitoring
Give Oxygen if needed	Not routinely required unless indicated
<b>BIRTH IMMINENT &gt;&gt;</b>	<ul style="list-style-type: none"><li>• Refer to Childbirth Clinical Skills</li><li>• Do NOT pull on umbilical cord</li><li>• Prepare for Newborn Resuscitation</li></ul>
<b>BIRTH NOT IMMINENT &gt;&gt;</b>	<ul style="list-style-type: none"><li>• Monitor closely</li><li>• Document observations<ul style="list-style-type: none"><li>• Stable: do observations every 10 mins</li><li>• Time Critical: do observations every 5 minutes</li></ul></li></ul>
<b>AFTER BIRTH &gt;&gt;</b>	<b>TRANSPORT TO HOSPITAL &lt;IF BLEEDING&gt;</b> <ul style="list-style-type: none"><li>• Apply direct pressure</li><li>• Encourage baby to breast-feed + skin-to-skin contact</li><li>• Consider fundus massage</li><li>• Consider NASG</li></ul>

# Radio information

Talk Group	Position	LTE	UHF	VHF
<b>National1</b> (command & AME)	1	Yes		
<b>NCD</b>	2	Yes		Yes
<b>Hospital - PMGH</b>	3	Yes		
<b>Regional</b>	4	Yes		
<b>Clinical Support</b>	5	Yes		
<b>Administration</b>	7	Yes	Yes	
<b>Event</b>	8	Yes		
<b>Major Incident</b>	9	Yes		

Code	Meaning
<b>Code 1</b>	SJA member in immediate danger. Need police and security urgently
<b>Code 2</b>	Cardiac arrest
<b>Code 3</b>	Transporting critical patient to hospital
<b>Code 4</b>	Patient deceased

Location	Talk Group	Position	Location prefix
<b>NCD</b>	NCD/Southern	2	<i>POM</i>
<b>Central</b>	NCD/Southern	2	<i>Central</i>
<b>Gulf</b>	NCD/Southern	2	<i>Gulf</i>
<b>ENB</b>	Regional	4	<i>Rabaul</i>
<b>Morobe</b>	Regional	4	<i>Lae</i>
<b>Simbu</b>	Regional	4	<i>Simbu</i>
<b>Goroka</b>	Regional	4	<i>Goroka</i>
<b>Mt Hagen</b>	Regional	4	<i>Hagen</i>

# Your responsibilities at start of shift

## Driver

### Check the ambulance is safe

- tyres (pressure and wear/tear)
- oil
- fuel
- seatbelts

### Radio check and sign-on to NACC

- do this 1 minute before shift start time

### Clean the ambulance interior

- wipe surfaces, then mop floor.
- front to back
- ceiling to floor

## Treating officer

### Get ready / sign-out

- radio/s and tablet
- medicines and kits
- pulse oximeter/thermometer, BGL

### Check ambulance kits using checklist.

### Check the stretcher

- chest harness
- waist belt
- clean stretcher from top to bottom

# Your responsibilities during the shift

<b>Driver</b>	<b>Treating officer</b>
<b>Drive the ambulance</b>	<b>Assess the patient</b> - measure vital signs, pulse, respiration rate
<b>Keep the ambulance interior clean</b>	<b>Give patient care</b> and reassurance
<b>Listen to the radio at all times</b>	<b>Ensure seatbelts worn by patient</b>
<b>Operate the stretcher</b> - make sure all occupants wearing seatbelt	<b>Document care given</b> - ensure <b>case times</b> are accurate: scene, depart, destination, treatment times
<b>Give very brief scene report</b> - pt serious / not serious / mild injuries - pt's key problems - any abnormal vital signs	<b>Handover to hospital</b> - handover to receiving doctor / nurse
<b>Restock &amp; clean between patients</b> - change linen - clean equipment - restock	<b>Seek clinical support</b> - contact the duty authorised clinical advisor for medical support

# Your responsibilities at end of shift

## Driver

### Check the ambulance

- report any defects to [fleet@stjohn.org.pg](mailto:fleet@stjohn.org.pg)

### Sign-off over the radio to NACC

### Thoroughly clean the ambulance interior

- wipe surfaces, then mop floor.
- front to back
- ceiling to floor

### Wipe patient care equipment

- pulse oximeter, BP, stethoscope

## Treating officer

### Complete documentation

- ensure AMII tablet synchronised to cloud
- ensure case times are right for each case

### Sign back

- radio/s and tablet
- medicines and kits
- pulse oximeter/thermometer, BGL

### Restock ambulance kits

### Clean the stretcher

- clean the stretcher mattress and seatbelts

# Ambulance Urgent Duty Rules



- Activate **red/blue** lights when on urgent duty.
- Activate **siren** when travelling above the normal speed limit for road you on which you are situated (day and night)
- Urgent response **speed limit** is: **100kmph**
- Intersection **speed limit** is: **20kmph**  
When approaching red light / intersection, slow to **below** 20kmph
- Transporting patient **speed limit** is: **70kmph**

# How to clean your ambulance

Area	Cleaning product	When
<b>Front compartment</b>	<b>Detergent</b> wipes	Shift start and finish
<b>Surfaces:</b> <i>draws, handles, knobs, walls, seatbelts</i>	<b>Detergent</b> wipes	Shift start, <b>AND</b> whenever contaminated
<b>Floor</b>	<b>Mop</b> with diluted detergent	Shift finish, <b>AND</b> whenever contaminated
<b>General equipment</b> <i>e.g., radio, pager, tablet</i>	<b>Detergent</b> wipes (or, alcohol wipes)	Regularly
<b>Medical equipment</b> <i>including mattress cover</i>	<u>Preferred:</u> <b><i>Clinell</i></b> wipes <u>Secondary:</u> alcohol wipes	Shift start and finish, <b>AND</b> whenever contaminated
<b>Fabrics</b> <i>e.g., ceiling and seats</i>	<b>Spray-vacuum</b> with approved detergent liquid	Every Monday, and as needed



# What is the right cleaning product?

## Area

## Product

### General areas

- passenger seatbelt
- radio, pager, tablet
- general surfaces
- medical kits

Best: **Detergent wipes**



(Second best: Alcohol wipes)

### Patient equipment

- medical devices  
(e.g. SpO2 probe; BP; stethoscope)
- stretcher seatbelts

Best: **Clinell** wipes



(Second best: Alcohol wipes)

# AMBULANCE PROTOCOL POCKET BOOK



[www.clinical.stjohn.org.pg](http://www.clinical.stjohn.org.pg)