

Basic Life Support

Emergency Medical Responder

Patient Care Protocols

Provincial Medical Oversight

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Newfoundland & Labrador



**OFFICE OF THE
PROVINCIAL MEDICAL OVERSIGHT PROGRAM**

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If found, please return to address above.

AUTHORIZATION FOR PROTOCOLS

OVERVIEW

These protocols were developed for the following reasons:

1. To provide the EMS provider with a quick field reference.
2. As written standards of care which are consistent throughout the Province of Newfoundland & Labrador. Users of these protocols are to have knowledge of more detailed and basic patient management principles found in EMS textbooks and literature appropriate to the EMS provider's level of training and licensure.
3. All users must have strict adherence to these protocols.

POLICY

Practitioners will work within their scope of practice specifically guided by procedures and protocols as authorized by the Provincial Medical Director or the Assistant Provincial Medical Director.

SCOPE

Emergency Medical Responders actively medically certified with the Provincial Medical Oversight Program (PMO) and who are on duty with a public BLS ambulance service that is recognized by the Department of Health and Community Services.

PURPOSE

The procedures and protocols are based on current best practice and evidence. These protocols are issued by the Provincial Medical Director and will be supported by Regional Medical Advisor and On-Line Medical Control physicians. These protocols govern the practice of EMS Providers who are registered and certified with the Provincial Medical Oversight Program by the authority of Department of Health and Community Services.

REVIEW

These protocols will be subject to annual review. New or revised protocols will be issued as applicable changes occur. If there are errors or omissions, please contact PMO.

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GENERAL STANDARDS OF CARE

General standards of care should be performed as necessary with all patients based on your scope of practice

- Scene assessment (Safety issues, MOI, # of patients, need for additional resources)
- Use of personal protective equipment (PPE) and universal precautions
- Assessment of level of consciousness, airway, breathing, and circulation
- Airway management
- Administration of oxygen
- Assisted ventilation
- Obtained detailed history
- Perform physical examination
- Obtain vital signs
- C-spine and spinal immobilization
- Perform CPR as per Heart & Stroke guidelines
- Consider PCP/ACP Intercept
- Consider differential diagnosis
- Frequent reassessment, particularly after intervention
- Radio and verbal report to receiving facility
- Completion of Patient Care Record

DOCUMENTATION

Ensure complete, thorough and timely documentation of patient care activities.

Patient Care Reports (PCR's) should contain enough detail so that it is easily apparent why specific treatments were offered or decisions were made. Careful documentation is especially important when documenting cases including but not limited to:

- Traumatic Cardiac Arrest
- Obvious Death
- Do-Not-Resuscitate (DNR)
- Determination of Death
- Spinal Immobilization
- Refusal of Care

If a PCR is reviewed, your documentation should present a logical train of thought that is easily followed through the appropriate protocol or algorithm.

GENERAL STANDARDS OF CARE Cont'd

To use these protocols as they were intended, it is necessary to know the philosophy, treatment principles and definitions which guided the physicians and paramedics who drafted these protocols:

1. Assessment and treatment should very RARELY delay transport.

Delays in transport should be discussed with OLMC

2. Inability to establish voice contact with OLMC

There are rare situations where the patient is unstable and delay in treatment threatens the patient's life or limb. If, after good-faith attempts, the practitioner cannot contact OLMC, then the practitioner is authorized to use any appropriate treatment protocols as standing orders. Continue attempts to contact OLMC and document these attempts on the patient care report. See Communication Failure in Communications Reference **(Pg 70)**

3. Treatments/drugs should be given in the order specified

PMO recognizes that often treatments are delivered simultaneously and more than one protocol may be used. OLMC may request treatments/drugs out of sequence for medical reasons.

4. Teamwork in patient care

Partnered crew members are required to collaborate throughout the duration of the patient encounter and discuss clinical findings and management of the patient. Crew members are jointly responsible for the overall care of the patient. In the event of disagreement surrounding appropriate management approach, contact OLMC as per Medical Authority directive **(Pg 7)**

5. Variation in clinical practice

Practitioners are expected to utilize their best clinical judgement with paramount consideration to the most reasonable and prudent care of the patient. It is not reasonable to expect a protocol compilation to cover every possible clinical situation and/or patient need. Protocols are expected to cover most time-dependent emergencies, and practitioners are reminded that deviation from protocol may be required in rare circumstances. In the event of deviation from treatment protocol, the reasoning behind the treatment management decisions made must be outlined in the patient care record and the event must be reported to PMO immediately, or if the variation occurs outside of business hours by the next business day, to ensure sufficient review of the case, as well as to determine if a new protocol is warranted.

6. Duty to report in cases of medical error or adverse events

Reporting of medical error assists in mitigating future error by permitting an avenue of education and remediation for involved practitioners and is essential to ensure appropriate patient follow-up. Reporting of medical error is mandatory and represents an essential component of professional paramedicine practice. Any medical error or adverse events made by any crew member during the care of a patient must be reported to PMO immediately, or if the error occurs outside of business hours by the next business day.

MEDICAL AUTHORITY

The ultimate responsibility for the decisions made in patient care are hereinafter referred to as medical authority. Despite the following hierarchy for patient care decisions, partnered crew members are required to collaborate throughout the duration of the patient encounter and discuss clinical findings and management of the patient. Crew members are jointly responsible for the overall care of the patient.

Medical authority is determined by the individual's level of training. Personnel with the highest level of training shall have medical authority during ambulance responses.

Personnel with the same level of training shall have medical authority determined by the amount of experience at that training level. The person with the most experience performing at that training level shall be granted medical authority.

Personnel who have the same training level and same experience at that training level shall determine the course of treatment for the patient by mutual agreement. If persons with the same training level and experience cannot mutually agree on the course of treatment they must contact OLMC for direction.

Failing the above, if there is disagreement regarding course of management at any time, regardless of training level or experience, practitioners must contact OLMC for direction.

PART I: ADULT EMERGENCY PROTOCOLS

AIRWAY MANAGEMENT

1. Manage airway as needed (airway maneuver and/or suction and/or adjunct)
 - Follow current Heart & Stroke guidelines for management of respiratory arrest
 - If severe respiratory distress or respiratory depression assist ventilation with positive pressure ventilation:
 - Perform bag mask ventilation (BMV) using 100% O₂ as needed
 - Consider **Predictors of Difficult Bag Mask Ventilation**¹
 - Optimize BMV utilizing **Optimal Bag Mask Ventilation**² techniques
 - Observe for **Signs of Effective Bag Mask Ventilation**³
 - If airway obstructed follow current Heart & Stroke guidelines for management of foreign body obstructed airway procedures as necessary
2. Request PCP or ACP intercept if available

¹PREDICTORS OF DIFFICULT BAG MASK VENTILATION – “BOOTS”

B	B eard
O	O bese
O	O lder
T	T oothless
S	S nore / Stridor

²OPTIMAL BAG MASK VENTILATION / APPROACH TO DIFFICULT BAG MASK VENTILATION

- 1) Reposition airway – exaggerated head tilt or exaggerated jaw thrust
- 2) Position ear level with sternum (Ramp⁴ patient if obese)
- 3) Consider foreign body
- 4) Consider alternative mask size
- 5) Insert oral and/or nasal airway
- 6) Perform two-person bag mask ventilation

³SIGNS OF EFFECTIVE BAG MASK VENTILATION

- 1) Visible chest rise
- 2) Audible breath sounds
- 3) Good seal (no air leak) and good compliance

⁴RAMPING FOR PATIENTS WITH OBESITY

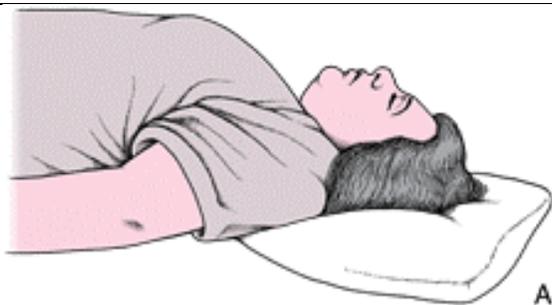


Figure A:
Patient positioned without ramping



Figure B
Patient ramped so that the sternum and ear line up. This position should improve ventilation

SHORTNESS OF BREATH

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Position patient upright if SBP greater than 100 mmHg
4. Request PCP or ACP intercept if available
5. Transport and treat based on **General Standards of Care (Pg 5)**

OXYGEN THERAPY

Oxygen therapy should be initiated as follows unless otherwise specified by a specific treatment protocol:

Administer high flow oxygen without delay if any of the following chief complaints OR clinical findings are present and be prepared to initiate BMV without delay if the patient displays signs of inadequate ventilation¹:

Chief Complaints / Presenting Problems	Clinical Findings
Shortness of breath	Respiratory distress or failure
Chest pain	Apnea
Stroke	Cyanosis or ashen colored skin
Altered mental status	Tachypnea (Increased respiratory rate)
Loss of consciousness	Hypotension or shock
Pregnancy problem or child birth	Impending shock
Trauma	Tachycardia or bradycardia
Poisoning or toxic ingestion	Agitation or combativeness
Diabetic emergency	
Seizure	
Electrocution	
Suspected or confirmed carbon monoxide exposure	
Near drowning	
Vision and/or hearing changes	
Acute severe pain	

COPD

If **confirmed COPD (emphysema or chronic bronchitis)**, administer oxygen according to the following guidelines:

- If the patient is in moderate to severe respiratory distress or has clinical findings, administer high flow oxygen. Be prepared to initiate BMV without delay if the patient displays signs of inadequate ventilation¹.
 - If respiratory status has improved to patient's baseline after treatment, consider replacing NRB with nasal cannula and reducing the amount of oxygen delivered
- If the patient is in mild distress, administer low flow oxygen 1 to 2 liters per minute above home oxygen levels

OXYGEN THERAPY Cont'd

¹CAUTION

In order for supplementary oxygen to be effective, the patient must have adequate respiratory effort, rate, and volume to ensure oxygen is delivered to the lungs. If the patient's respiratory effort, rate or volume is inadequate to maintain oxygenation, the patient is considered to be in respiratory failure and BMV with high flow oxygen must be delivered without delay.

The following **signs of inadequate ventilation** may be observed in patients with respiratory failure:

- Abnormal sounds with breathing, such as snoring, gurgling, or stridor
- Fatigue with respiratory effort
- Gasping
- Irregular breathing pattern with periods of apnea
- Little or no chest rise
- Decreased or absent breath sounds ("silent chest")
- Rate and/or depth of breathing grossly insufficient for age
- Apnea

If there are findings of airway obstruction, such as stridor, snoring or gurgling, proceed with basic airway maneuvers to open and/or clear the airway.

ALLERGY AND ANAPHYLAXIS

FINDINGS OF ANAPHYLAXIS

1) Acute onset (minutes to hours) of **TWO OR MORE** of the following after exposure to a **LIKELY ALLERGEN**:

- Skin symptoms (hives, itching, flushing)
- Swelling of the lips, tongue, uvula
- Respiratory compromise (Respiratory distress, wheeze, stridor, signs of hypoxia)
- Gastrointestinal symptoms (crampy abdominal pain, vomiting, diarrhea)
- Reduced blood pressure or associated symptoms (Decreased tone, collapse, syncope)

OR

2) Hypotension (SBP less than 90 mmHg) alone after exposure to a **KNOWN ALLERGEN** for patient

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. If **Findings of Anaphylaxis** present and patient has their own anaphylaxis kit (EpiPen)¹ – assist patient with administration of epinephrine
5. Transport and treat based on **General Standards of Care (Pg 5)**

¹ASSISTING WITH EPIPEN ADMINISTRATION

- The instructions outlined below are for use of the EpiPen device and should not be used if the patient has another type of epinephrine injector such as Allerject.
- For all epinephrine injectors, other than EpiPen, follow the administration directions written on the device if epinephrine is indicated.



Figure 1:
Hold firmly with needle tip pointing downward and remove safety release.



Figure 2
Swing and push needle tip firmly into mid-outer thigh until a click is heard. Hold on thigh for 10 seconds to allow for medication to be released.

ADULT CARDIAC ARREST

If patient meets criteria outlined in the **Obvious Death Protocol (Pg 16)** or the **DNR Protocol (Pg 17)** do not proceed with resuscitation

1. Confirm Vital Signs Absent (VSA) and initiate chest compressions
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. Treat as per guidelines listed below:

GENERAL GUIDELINES

- Confirm absence of pulse – pulse check **NOT** exceeding 10 seconds
- Initiate compressions immediately: **C-A-B Sequence**
- Begin high quality CPR¹ (30 compressions: 2 ventilations) while immediately attaching defibrillator – Analyze and **defibrillate without delay if indicated.**
 - First rhythm analysis
 - If **shock advised**, give one shock and resume 5 cycles (2 minutes) of CPR immediately
 - If **no shock advised**, resume 5 cycles (2 minutes) of CPR immediately
 - Second rhythm analysis
 - If **shock advised**, give one shock and resume 5 cycles (2 minutes) of CPR immediately
 - If **no shock advised**, resume 5 cycles (2 minutes) of CPR immediately
 - Third rhythm analysis
 - If **shock advised**, give one shock and resume 5 cycles (2 minutes) of CPR immediately
 - If **no shock advised**, resume 5 cycles (2 minutes) of CPR immediately
- **After third rhythm analysis**, initiate transport of the patient. CPR must be continued throughout this period. **DO NOT** withhold CPR
- **Analyze patient every 10 minutes** thereafter and continue CPR
- If return of spontaneous circulation (ROSC) proceed immediately with **Post Cardiac Arrest Care Protocol (Pg 15)**
- If re-arrest occurs during transport, resume **Cardiac Arrest Protocol**

HYPOTHERMIC CARDIAC ARREST (CORE TEMPERATURE LESS THAN 32°C)

- Hypothermic patients are to be resuscitated as per normal with defibrillation
- Resuscitation will be continued until active re-warming has returned core temperature to normal or there has been ROSC

¹ HIGH QUALITY CPR

- Minimize interruptions in CPR
- Allow full recoil of the chest between compressions
- Rotate rescuers every 2 minutes (if resources allow)

ADULT POST CARDIAC ARREST CARE (RETURN OF SPONTANEOUS CIRCULATION – ROSC)

1. Manage airway and assist ventilations as necessary
2. O₂ via NRB (15 L/min)
 - Assist ventilations with BVM if signs of inadequate ventilation are present:
 - Abnormal sounds with breathing, such as snoring, gurgling or stridor
 - Fatigue with respiratory effort
 - Gaspings
 - Irregular breathing pattern with periods of apnea
 - Little or no chest rise
 - Decreased or absent breath sounds (“silent chest”)
 - Rate and/or depth of breathing grossly insufficient for age
 - Apnea
 - If assisted ventilation is indicated, deliver ventilations by BVM at a rate of 12 breaths per minute (1 breath every 5 seconds)
 - Deliver each breath over 1 second
 - Deliver sufficient volume to produce visible chest rise
 - Avoid excessive ventilation (hyperventilation)
3. If defibrillator was used, leave pads in place
4. Request PCP or ACP intercept if available
5. Transport and treat based on **General Standards of Care (Pg 5)**
6. If re-arrest occurs, resume **Adult Cardiac Arrest Protocol (Pg 14)**

NOTE:

- A copy of the code summary and PCR must be left with the receiving facility

OBVIOUS DEATH

The EMR will **not** start resuscitation of a patient of any age that has suffered cardiac arrest (not breathing and no palpable pulse) if any of the following signs of obvious death are present:

- 1) Rigor mortis¹
- 2) Dependent lividity²
- 3) Decapitation
- 4) Transection of the torso
- 5) Decomposition
- 6) Confirmed submersion greater than 60 minutes
- 7) Obvious destruction of brain, heart, or lungs that is incompatible with life
- 8) Other catastrophic injury that is incompatible with life

NOTES

- Proceed with **Management of Death Protocol (Pg 18)** if patient in cardiac arrest meets the Obvious Death criteria

DEFINITIONS

- ¹ **Rigor mortis:** The rigid stiffening of muscles that occurs shortly after death
- ² **Dependent lividity:** The settling of blood in the lower portion of the body after death that causes a purplish red discoloration of the skin.

DO NOT RESUSCITATE (DNR)

This DNR Protocol **CANNOT** be implemented in situations related to:

- 1) Trauma (See **Blunt or Penetrating Cardiac Arrest Protocol Pg 30-31**)
- 2) Suicide attempt
- 3) Sudden reversible events: choking, asphyxia, anaphylaxis, drowning, hypothermia, electrocution, toxic ingestion or overdose
- 4) Pregnancy

The EMR will **not** start or may terminate resuscitation of a patient of any age that has suffered from cardiac arrest (not breathing and no palpable pulse) in either of the following circumstances:

1. A valid DNR Order or Advance Health Care Directive (**Pg 78**) is presented **and** a reasonable effort has been made to verify the identity of the patient named on the document

OR

2. A legally recognized Substitute Health Care Decision Maker (SHCDM) (**Pg 78**) is present and states that the patient expressed a desire not to be resuscitated in this type of circumstance **or** presents reasons why the patient should not be resuscitated while maintaining the patient's best interest

AND

The EMR must **not** have any concerns about the appropriateness of withholding resuscitation based on:

- 1) Doubts about the patients best interest
- 2) The validity of the DNR order or Advance Health Care Directive
- 3) The identity of the person making the request as a SHCDM
- 4) The patients family that are present being unable to reach an agreement about withholding resuscitation

NOTES

- If the EMR has any concerns regarding the validity of the DNR request – full resuscitative efforts should be initiated and contact made with OLMC
- If a request for DNR is made prior to the patient suffering complete cardiac arrest – provide supportive care (oxygen, airway support, and comfort measures) and contact OLMC with transport to hospital as appropriate
- Proceed with **Management of Death Protocol (Pg 18)** upon recognition of cardiac arrest with valid DNR request

MANAGEMENT OF DEATH (RESUSCITATION TERMINATED OR NOT INDICATED)

CAUTION

This protocol is **not** to be utilized as the initial assessment of the unconscious patient to determine if they are in cardiac arrest. The initial assessment to determine if cardiac arrest is present should be conducted in accordance with the standards outlined in the Cardiac Arrest Protocol, with a pulse check not exceeding 10 seconds duration

This protocol outlines the criteria that must be evaluated and documented in the PCR **after** it has been determined that resuscitation from cardiac arrest is not indicated, or should be terminated when directed to do so by the **Blunt or Penetrating Cardiac Arrest (Pg 30-31)**, **DNR (Pg 17)**, or **Obvious Death (Pg 16) Protocol(s)**

Once it is determined that resuscitation from cardiac arrest is not indicated **or** should be terminated proceed with the following steps:

1. Evaluate for, confirm and document the presence of all the **Documentation of Death Criteria**¹
2. Determine if the death meets criteria for **Reportable Death**² or **Expected Death**³
 - If the death was an **Expected Death**³ inquire whether the patient is enrolled in the “End of Life Program” and proceed as follows:
 - If patient enrolled in the End of Life Program, contact the health care professional that has been identified to the family for purposes of notification of death
 - If the patient is not enrolled in the End of Life Program, notify the family physician or designate. If the family physician or designate is unavailable, contact the police
 - If the death meets the criteria of a **Reportable Death**² proceed as follows:
 - a) Do not disturb the scene – limit access only to essential responders
 - b) Leave all disposable medical equipment and supplies used in the resuscitation in place – do not remove from the scene
 - c) Leave defibrillation pads, and airway adjuncts in position
 - d) Leave the deceased in position – do not move or cover the body
 - e) Exit the scene of the death immediately using the same pathway as was used to enter
 - f) Do not permit anyone entrance into the scene
 - g) Notify police
3. Provide comfort to the bereaved
 - Disclose death simply and directly with warmth and compassion
 - Listen and empathize
 - Assist locating support – relative, friend, clergy, etc.

MANAGEMENT OF DEATH (RESUSCITATION TERMINATED OR NOT INDICATED) Cont'd

4. Allow the bereaved to see the body if they wish:
 - If not a reportable death, prepare the deceased – clean up medical supplies, cover with blanket, place pillow under head, close eyes, wipe up body fluids, etc.
 - Prepare the bereaved for what they will see and answer any questions
 - Do not rush the bereaved

5. Remain on-scene until appropriate supports arrive for the bereaved, and/or:
 - Family physician, police, medical examiner, or funeral home arrive and assume control of the deceased
 - Crew is requested to respond to another life-threatening time-dependent emergency call

¹DOCUMENTATION OF DEATH CRITERIA

Assess and document **ALL** of the following criteria:

- 1) No palpable carotid pulse (Assess for 60 seconds)
- 2) No spontaneous respiratory effort (Assess for 60 seconds)
- 3) No heart sounds (Assess for 60 seconds)
- 4) Non-reactive pupils

²REPORTABLE DEATH CRITERIA

When **ANY ONE OR MORE** of the following criteria present:

- 1) Death as a result of violence, accident, or suicide
- 2) An unexpected death when the person was in good health
- 3) Where the person was not under the care of a physician
- 4) The death is obviously suspicious in nature
- 5) Where the cause of death is undetermined
- 6) Death is the result of improper or suspected negligent treatment by another person

³EXPECTED DEATH

Any death that does not meet Reportable Death Criteria²

NOTE

- Transport of the deceased must be completed by a licensed funeral director
- An ambulance may transport the deceased only if the deceased is in a public place and the funeral director will be extensively delayed (greater than 1 hour), or as directed by police or OLMC

SHOCK

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Control bleeding (if applicable)
4. Assess for **Signs and Symptoms of Shock**¹
5. Position patient supine² (unless patient is in severe respiratory distress)
6. Request PCP or ACP intercept if available
7. Transport and treat based on **General Standards of Care (Pg 5)**

¹**SIGNS AND SYMPTOMS OF SHOCK**

Patients in shock will often present with the following clinical features:

- 1) Hypotension (SBP less than 90 mmHg)

AND

- 2) Any **ONE OR MORE** of the following features:
 - Rapid and / or shallow breathing
 - Cool and / or clammy skin
 - Rapid and / or weak pulse(s)
 - Near fainting and / or fainting
 - Weakness

NOTES

- Shock is a life-threatening, progressive medical condition that results from the inadequate flow of oxygenated blood to critical organs and tissues of the body
- When the blood pressure is inadequate to sustain a regular flow of oxygenated blood to the organs and tissues of the body, organs will be damaged and shock will eventually result
- Shock may result from a number of medical conditions including infection, trauma, blood loss, anaphylaxis, severe dehydration and various medical conditions

²**CAUTION**

- Trendelenburg positioning is not indicated in the treatment of shock and is not to be utilized
- Position the patient supine unless they are in severe respiratory distress
- If the patient in shock is suffering from severe respiratory distress,, position them semi-sitting and assist ventilations as indicated

ISCHEMIC CHEST PAIN

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Administer **ASA** 160–162 mg PO chewed if no contraindications present
4. Request PCP or ACP intercept if available
5. Transport and treat based on **General Standards of Care (Pg 5)**

ACETYLSALICYLIC ACID (ASA)	
CLASS	Platelet aggregation inhibitor
INDICATIONS	Ischemic Chest Pain
CONTRAINDICATIONS	<ol style="list-style-type: none">1) Hypersensitivity to ASA or NSAIDS2) History of active bleeding3) Active bronchospasm or history of severe asthma with bronchospasm related to ASA or NSAIDS4) Age less than 16 years
PRECAUTIONS	<ul style="list-style-type: none">• Pregnancy• Bleeding disorders
ADULT DOSE	160-162 mg PO chewed
NOTES	<ul style="list-style-type: none">• ASA should still be administered if patient has already taken their usual prescribed daily dose of ASA• If the patient has taken ASA on the advice of the dispatcher, confirm correct identity of medication, dose, and expiration date. If able to confirm appropriate self-administration do not administer additional ASA. If ASA taken is enteric coated, administer ASA as per protocol.• Regular use of anticoagulants, such as warfarin, is not a contraindication to ASA administration.

ACUTE STROKE

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Establish and document **Last Seen Normal (LSN) Time¹**
4. Request PCP or ACP Intercept if available
5. Transport and treat based on **General Standards of Care (Pg 5)**

SIGNS AND SYMPTOMS OF STROKE

- Loss of strength of one leg or arm
- Difficulty speaking
- Facial droop

¹LAST SEEN NORMAL (LSN) TIME

- The last time the patient was witnessed or confirmed in their usual state of health and completely without signs or symptoms of stroke

NOTES

- Due to in-hospital treatment of stroke being time sensitive, an intercept must be requested as early as possible

-) Contact OLMC without delay if:
- The patient has signs and symptoms of stroke to discuss bypass to appropriate stroke center.

SYMPTOMATIC HYPOGLYCEMIA

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. If patient meets **Hypoglycemia Treatment Indications¹** administer oral glucose or sugared beverage in accordance with table below:

GLUCOSE (ORAL)	
CLASS	Caloric Agent
INDICATIONS	Adult Symptomatic Hypoglycemia Pediatric Symptomatic Hypoglycemia
CONTRAINDICATIONS	1) Depressed mental status 2) Unable to cough or swallow
ADULT DOSE	ONE of the following options: 1) Dex 4[®] tablets 20 g (5 tablets) 2) Insta-glucose[®] 1 tube (30 g) 3) 1 cup (250 mL) of juice or regular pop (non-diet) 4) 4 teaspoons (20 mL) or 4 packets of table sugar dissolved in water

5. Transport and treat based on **General Standards of Care (Pg 5)**

¹HYPOGLYCEMIA TREATMENT INDICATIONS

- 1) Patient is a known diabetic

AND

- 2) Patient is conscious, awake, and able to cough and swallow

AND

- 3) Any **ONE OR MORE** of the following features of hypoglycemia:
 - Confirmed blood sugar less than 4 mmol/L according to bystander or patient
 - Confusion
 - Irritability
 - Weakness
 - Profuse sweating

CAUTION

- Do not administer oral glucose or sugared beverage if the patient is unconscious, not alert, or unable to cough or swallow.
- If blood glucose is determined to be greater than or equal to 4 mmol/L by the patient or a bystander then administration of glucose or a sugared beverage is not indicated

CONVULSIVE SEIZURES

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Spinal immobilization if seizure has stopped and patient suffered an unprotected fall to ground from elevation **or** there is evidence of injury above the collar bones
4. Position patient:
 - Actively seizing – place supine and protect from injury
 - If vomiting occurs, place patient in left lateral recumbent position, maintain airway and prepare for suctioning
 - Postictal – place left lateral recumbent and maintain airway
5. Request PCP or ACP intercept if available
6. Transport and treat based on **General Standards of Care (Pg 5)**

AGITATED / COMBATIVE

(Patient is a danger to self or others)

1. Contact police and request that they attend the scene immediately
2. Manage airway and assist ventilation as necessary
3. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
4. Request PCP or ACP intercept if available
5. Attempt verbal management techniques for crisis intervention to de-escalate the situation and calm the patient
6. If **Indications for Physical Restraint¹** present, apply the least amount of physical restraint necessary to protect the patient from harming themselves or bystanders until the police arrive, as per the **Agitated Combative / Physical Restraint Reference (Pg 72)**

¹INDICATIONS FOR PHYSICAL RESTRAINT

- 1) Imminent danger² to life or threat of physical harm to patient and/or bystanders
AND
- 2) Attempts at verbal de-escalation have failed
AND
- 3) Attempts to restrain do not place the practitioner(s) at significant risk of harm to themselves

NOTES

²Imminent Danger – an immediate threat of significant harm to one's self or others, up to and including death

Examples of Imminent Danger:

- Actively attempting suicide
- Actively attempting to cause serious bodily injury to others
- Attempting to jump from a building or moving vehicle

CAUTION

- There is a high risk of positional asphyxia and/or aspiration in patients undergoing chemical or physical restraint. Close and continuous monitoring of these patients, including airway patency and adequacy of respirations is mandatory
- At **NO TIME** should the patient be restrained in the prone (face or chest-down) position
- Always maintain an ability to escape the scene. Position yourself between the patient and the exit at all times to maintain a safe exit should the situation escalate
- Be alert for potential weapons and hazards. If the patient has a weapon, do not attempt to disarm them. Instead, leave the scene and stage until the police declare the scene safe to re-enter
- Be aware of signs of increased agitation or aggression including, but not limited to:
 - Tense posture
 - Loud speech
 - Pacing
 - Threatening statements
 - Clenched hands
 - Hostile or aggressive body language

GENERAL APPROACH TO TOXIN MANAGEMENT

1. Scene safety: protect rescuers and patients from immediate danger and contamination
 - **Toxic exposures might require special precautions, including CBRNE precautions or decontamination, before patient treatment begins**
 2. Manage airway and assist ventilations as necessary
 3. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
 4. Monitor vitals
 5. If seizure occurs refer to **Convulsive Seizure Protocol (Pg 24)**
- Request PCP/ACP intercept if available. Do not delay transport in cases of severely symptomatic patients

OPIOIDS

This protocol is intended for management of the severely symptomatic adult patient with suspected or confirmed ingestion or use of an opioid¹ agent

Therapy is not intended to return patient to a normal level of consciousness. The goal of treatment is a respiratory rate greater than 10 per minute with adequate ventilation

If **ALL** of the following criteria are met, proceed with **Naloxone** administration as outlined:

- Impaired consciousness
- Respiratory rate less than 10 per minute
- Requiring assisted ventilation

Administer **Naloxone**² 4 mg IN (intranasal)

- Repeat every 2-3 minutes, if indicated, to improved respiratory drive of greater than 10 breaths per minute with adequate ventilation

¹ EXAMPLES OF OPIOIDS INCLUDE BUT ARE NOT LIMITED TO:

- | | |
|---|---------------------------|
| • Morphine | • Tramadol (Tramacet) |
| • Hydromorphone (Dilaudid) | • Meperidine (Demerol) |
| • Codeine | • Methadone |
| • Oxycodone (Percocet, OxyContin, OxyNEO) | • Buprenorphine (Butrans) |
| • Fentanyl | • Heroin |

² NOTES

- Return to normal alertness is not a required outcome following naloxone administration
- Examine patient for transdermal opioid patches (placed on the skin), including fentanyl and buprenorphine (Butrans), and remove with a gloved hand
- BVM ventilation **MUST** be provided prior to Naloxone administration
- BVM will be required while waiting for Naloxone to take effect



Contact OLMC for guidance if required

SPINE ASSESSMENT FOR BACKBOARD

Most patients requiring a cervical collar will not require transport on a backboard. If a backboard is required to transfer a patient to a stretcher, it should be promptly removed once they are placed on the stretcher. If the patient can ambulate, they should be encouraged to lie down on the stretcher on their own. Patients must be secured using the stretcher's five-point restraints.

Cervical collars are still an essential component of cervical spine trauma management and should be applied to patients with who have experienced a mechanism of injury that could result in a cervical spine injury. It will be common to apply cervical collars to patients not being transported on backboards.

Precautions should be taken to minimize movement of the spine during patient transfers. Scoop stretchers are an excellent option for transferring patients to a stretcher but must also be removed

Patients must remain on a backboard during transport to hospital if:

- Backboard is part of a larger splinting strategy (pelvic or multiple long bone fractures)
- Significant trauma with altered level of consciousness
- New neurologic complaint (paralysis or paresthesia)
- Obvious spinal deformity
- Patient is agitated or otherwise unable to cooperate with their own spinal motion restriction
- Patient is at risk of vomiting and may need to be turned on their side
- Backboard removal would unacceptably delay transport in a critical patient
- Practitioner feels there are extenuating circumstances requiring transport on a backboard

At the receiving facility, patient transfer devices such as sliding boards, scoop stretchers or roller devices should be used to minimize motion of the spine.

NOTES

- If there are any concerns regarding the application of this protocol, contact OLMC
- If a sending physician is requesting a patient be transferred on a backboard, it must be discussed with OLMC
- Backboards do not have a role in inter-facility transfers, even if a spine injury has been diagnosed

TRAUMA ALERT

Trauma Alert allows for the highest state of readiness and preparation prior to the trauma patient's arrival to hospital. It is important that the ambulance crew identify that the situation warrants a "Trauma Alert" and notifies the receiving hospital as soon as possible.

Trauma Alert Criteria

Mechanism of Injury
Death occurs in same compartment of a MVC
Fall greater than 5 meters (15 feet)
Vehicle vs. pedestrian collision
Patient ejected from the vehicle
MVC greater than 100 km/hr
Motorcycle or ATV collision
Vehicle roll-over
Any time the practitioner judges the mechanism of injury to constitute a major trauma
Physical Findings
Tachycardia or bradycardia (heart rate greater than 100 or less than 60 beats per minute)
Hypotension (SBP less than 90 mmHg)
Tachypnea or bradypnea (Respiratory rate greater than 20 or less than 12 per minute)
Glasgow Coma Scale less than 14
Paralysis or suspected spinal cord injury
Penetrating injury
Amputation proximal to wrist or ankle
Two or more proximal long bone fractures
Suspected pelvis fracture
Burns greater than 15% of total body surface area (BSA) or involving face or airway
Multi-system trauma (Involves two or more body systems)
Any time the practitioner judges the physical finding(s) to constitute a major trauma
Co-Morbidities
Age less than 5 or greater than 55 years
Pregnancy
Morbid obesity
Coagulopathy

BURNS

(Thermal and Chemical)

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Stop the burning process:
 - Remove involved clothing
 - Brush off powdered chemicals and copious irrigation of any other chemical exposure
4. **Warm ambient temperature to avoid hypothermia**
5. Estimate % Total Body Surface Area (TBSA) affected using **Rule of Nines (Pg 79)** and provide wound care as outlined below:

Less than 5% TBSA	Cover with moist or saline soaked (10-25°C) dressing
Greater than 5% TBSA	Cover with clean, dry sheet, or commercial dressing

6. Remove all items including jewelry that have the potential to become constrictive to the neck, extremities or digits
7. Request PCP or ACP intercept if available
8. Transport and treat based on **General Standards of Care (Pg 5)**

CAUTION

- Cooling with ice or ice water is contraindicated as this may increase severity of injury and lead to hypothermia

BLUNT TRAUMATIC CARDIAC ARREST

UNWITNESSED BLUNT CARDIAC ARREST

If the following two criteria are met on arrival to patient side then no resuscitation indicated:

- 1) Obvious external signs of major blunt trauma consistent with Trauma Alert Activation Criteria in the **Trauma Alert Protocol (Pg 28)**

AND

- 2) Confirmed cardiac arrest by absence of spontaneous respiration and palpable pulse

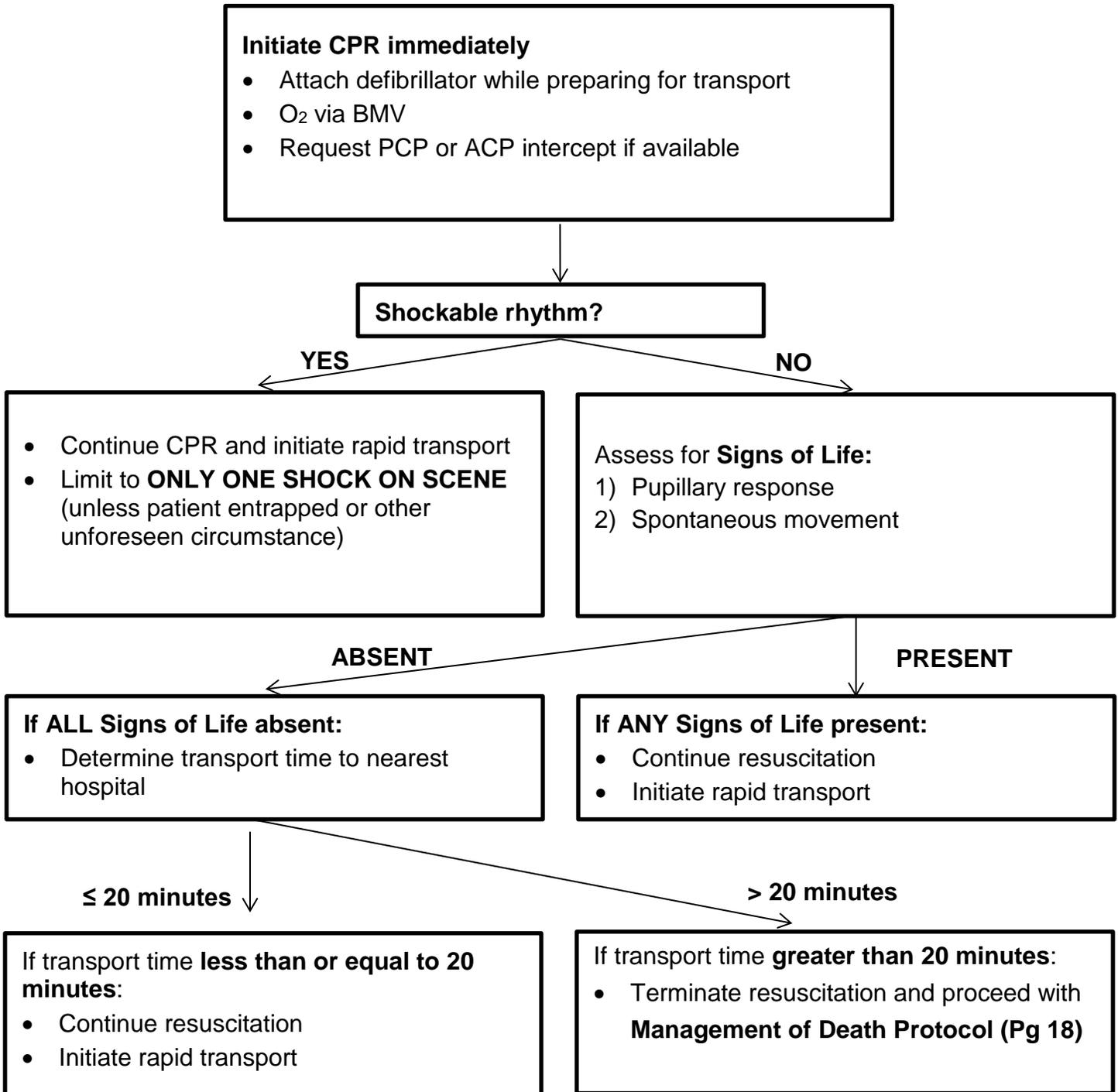
WITNESSED BLUNT CARDIAC ARREST

- Begin CPR (30 compressions : 2 ventilations) while attaching defibrillator
- Request PCP or ACP intercept if available
- Notify receiving Emergency Department without delay that cardiac arrest has occurred and continue transport

NOTES

- If no obvious external signs of significant trauma or if unsure of mechanism of injury, consider medical cardiac arrest and treat according to **Cardiac Arrest Protocol (Pg 14)**
- If witnessed blunt cardiac arrest **do not** delay transport

PENETRATING TRAUMATIC CARDIAC ARREST



NOTES

- If no obvious external signs of significant trauma or if unsure of mechanism of injury, consider medical cardiac arrest and treat according to appropriate medical cardiac arrest protocol
- Do not delay transport
- Notify receiving Emergency Department without delay of actual or impending cardiac arrest (from the scene if possible)

LESS THAN LETHAL FORCE

Conducted Energy Weapons (CEW)

1. If cardiac arrest present, start CPR immediately and proceed with **Cardiac Arrest Protocol (Pg 14)** without delay
2. Manage airway and assist ventilation as necessary
3. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
4. Request PCP / ACP intercept if available
5. Assess for secondary injuries (burns, pathological fractures, etc.)
6. If altered mental status consider the following:
 - If signs of hypoglycemia, treat as per **Symptomatic Hypoglycemia Protocol (Pg 23)**
 - If severe agitation or combativeness is present proceed with **Agitated/Combative Protocol (Pg 25)**
 - If signs of hyperthermia and **Excited Delirium**¹ are present, initiate external cooling measures
6. Determine the event(s) preceding the use of the CEW and how many “5-second cycles of energy” were delivered to the patient
7. Inspect the impact site of the probe dart(s). If necessary, cut away clothing to view the probe darts
 - Do NOT remove any probe dart(s)
 - Treat darts as an impaled object(s) and secure in place
9. Transport and treat based on **General Standards of Care (Pg 5)**

¹ EXCITED DELIRIUM

A state of excessive agitation and psychosis often brought on by overdose, drug withdrawal, or non-compliance with medications used in the treatment of mental health disorders. These patients are at heightened risk of adverse outcome (cardiac and respiratory demise) and death, which is exacerbated in situations of physical restraint.

Assess the patient for the following signs of excited delirium:

- Aggressive and bizarre behaviour
- Dilated pupils
- Extreme agitation
- Shivering
- Shouting
- Excessive physical strength
- Decreased sensitivity to pain

LESS THAN LETHAL FORCE Cont'd

CAUTION

- Maintain police presence at all times while on-scene and request police escort during transport.
- Ensure that there is no electricity flowing through the CEW before approaching the patient.
- Assume spinal precautions. All patients exposed to CEW are considered to have fallen until proven otherwise.
- Exercise caution when approaching a patient exposed to CEW energy as they may display violent tendencies post-deployment. Always maintain an ability to escape the scene. Position yourself between the patient and the exit at all times to maintain a safe exit, should the situation escalate.
- At NO TIME should the patient be restrained in the prone (face or chest-down) position.
- There is a high risk of positional asphyxia and/or aspiration in patients in excessively agitated states. Close and continuous monitoring of these patients is mandatory including airway patency and adequacy of respiration.
- Patients with a weakened cardiac system may not tolerate exposure to CEW. Complaints of chest pain or shortness of breath must be taken seriously, evaluated and treated as appropriate.
- All patients exposed to CEW **must** be transported to the closest medical facility for evaluation. If police determine transport by ambulance is too dangerous, ensure that the police are clearly informed of the need for medical evaluation at a hospital and document the badge number of the police officer informed.
- Be alert for the possibility of soft tissue burns after the use of a push stun feature on the CEW.
- Be alert for the possibility of blunt force trauma after the use of a bean bag deployment device.

HEAT RELATED ILLNESS

This protocol is intended for the management of patients with exposure to high temperatures or high levels of exertion and without history of recent infection

1. Manage airway and assist ventilations as necessary
2. O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. Measure temperature
5. Begin cooling measures¹ if signs of heat exhaustion or heat stroke present². Continue until temperature is less than 39°C or patient starts shivering.
6. If severe agitation or combativeness is present, concurrently manage as per **Agitated / Combative Protocol (Pg 25)**
7. If seizure occurs, proceed with **Convulsive Seizure Protocol (Pg 24)** and continue cooling

¹COOLING MEASURES (STOP if patient starts shivering)

- 1) Remove the patient from hot environment and cool ambient temperature in the ambulance
- 2) Remove patient's clothing and apply cool water to patient's skin
- 3) Promote evaporation by using a fan or open window
- 4) Apply ice packs to the groin, neck and axilla (DO NOT APPLY DIRECTLY TO SKIN)

²SIGNS OF HEAT EXHAUSTION and HEAT STROKE

Patients with heat related illness may exhibit one or more of the following:

Heat Exhaustion

- Decreased coordination
- Sweating
- Tachycardia and hypotension
- Hyperventilation
- Headache
- Abdominal pain and/or nausea and vomiting

Heat Stroke

- 1) Temperature greater than 40°C **AND**
- 2) Altered mental status or Central Nervous System (CNS) dysfunction

NOTES:

- Patients may have normal to slightly elevated temperature with heat exhaustion
- Lack of perspiration is a late sign of heat stroke
- Patients with exertional heat illness may have profound tachycardia as a normal physiological response

HYPOTHERMIA

This protocol is intended for the management of patients with exposure to environmental conditions consistent with hypothermia

1. Manage airway and assist ventilations as necessary
2. O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. Measure temperature
5. If signs of frostbite present:
 - Splint or pad effected area to minimize injury
 - Remove jewelry if required
 - Pad between effected digits and bandage effected tissue loosely with a soft, sterile dressing. Do not put pressure on the effected parts.
6. If signs of hypothermia proceed with steps for rewarming¹
7. If Cardiac Arrest occurs proceed to **Adult Cardiac Arrest Protocol (Pg 14)**

¹STEPS FOR REWARMING

- Remove patient from cold environment
- Remove wet clothing (cutting preferred)
- Cover with blankets
- Increase ambient temperature in ambulance
- Apply radiant heat and/or warm blankets to core

Mild Hypothermia	Severe Hypothermia
1) 32°C-35°C 2) Normal mental status 3) Shivering 4) Normal to slightly elevated vital signs	1) Temperature less than 32°C 2) Decreased LOC, slurred speech and ataxia 3) Decreased heart rate and respiratory rate 4) Shivering absent below 30°C

CAUTION

- Patients in severe hypothermia often become extremely bradycardic.
- Hypothermic patients are at a high risk for ventricular fibrillation (a shockable rhythm found in cardiac arrest) if handled roughly. Patient movement should be limited and a horizontal position maintained whenever possible.
- Severely hypothermic patients should have their core areas warmed first. Warming extremities before core can precipitate a secondary drop in temperature.
- **DO NOT** attempt to thaw frostbitten areas.
- **DO NOT** ambulate patients with hypothermia.

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PART II: PEDIATRIC EMERGENCY PROTOCOLS

PEDIATRIC RESPIRATORY DISTRESS

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
 - Blow by O₂ or O₂ by nasal cannula is acceptable if child refuses mask
 - If stridor present administer humidified O₂
3. Keep child as comfortable as possible, agitation may worsen condition
 - Allow parent or guardian to remain with the child if condition allows
4. Request PCP or ACP intercept if available
5. Transport and treat based on **General Standards of Care (Pg 5)**

PEDIATRIC ALLERGY AND ANAPHYLAXIS

¹FINDINGS OF ANAPHYLAXIS

1) Acute onset (minutes to hours) of **TWO OR MORE** of the following after exposure to a **LIKELY ALLERGEN**:

- Skin symptoms (hives, itching, flushing)
- Oropharyngeal edema (lips, tongue, uvula)
- Respiratory compromise (respiratory distress, wheeze, stridor, signs of hypoxia)
- Gastrointestinal symptoms (crampy abdominal pain, vomiting, diarrhea)
- Reduced blood pressure or associated symptoms (decreased tone, collapse, syncope)

OR

2) Age-Specific Hypotension³ alone after exposure to a **KNOWN ALLERGEN** for patient

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. If **Findings of Anaphylaxis**¹ present **AND** patient has their own anaphylaxis kit (EpiPen) – assist patient with administration of epinephrine²
5. Transport and treat based on **General Standards of Care (Pg 5)**

²ASSISTING WITH EPIPEN ADMINISTRATION

- The instructions outlined below are for use of the EpiPen device and should not be used if the patient has another type of epinephrine injector such as Allerject or Twinject
- For all epinephrine injectors, other than EpiPen, follow the administration directions written on the device if epinephrine is indicated.



Figure 1:
Hold firmly with needle tip pointing downward and remove safety release



Figure 2
Swing and push needle tip firmly into mid-outer thigh until a click is heard. Hold on thigh for several seconds to allow for medication to be released.

PEDIATRIC ALLERGY AND ANAPHYLAXIS Cont'd

³AGE-SPECIFIC HYPOTENSION (5th PERCENTILE FOR SBP) GUIDELINES

Age	Hypotension SBP (Less than 5 th Percentile for SBP)
0 – 28 days	Less than 60 mmHg
1 month – 12 months	Less than 70 mmHg
1 year – 10 years	$[70 + (2 \times \text{age in years})]$ mmHg
Greater than 10 years	Less than 90 mmHg

PEDIATRIC CARDIAC ARREST

If patient meets criteria outlined in the **Obvious Death Protocol (Pg 16)** or **DNR Protocol (Pg 17)** do not proceed with resuscitation

1. Confirm Vital Signs Absent (VSA) and initiate chest compressions
2. 100% O₂ via BMV (15 L/min)
3. Request PCP or ACP intercept if available
4. Treat as per guidelines listed below:

GENERAL GUIDELINES

- Confirm absence of pulse – pulse checks **NOT** to exceed 10 seconds
- Initiate compressions immediately: **C-A-B Sequence**
- If arrest secondary to hypoxia suspected, proceed with **A-B-C Sequence**
- Begin high quality CPR¹ and immediately attach defibrillator – **Analyze and defibrillate without delay if indicated**

	Compressions : Ventilation Ratio	Depth	Rate
One Rescuer	30:2	1/3 chest depth <ul style="list-style-type: none"> • Infants: 4 cm • Child: 5 cm 	At least 100 per minute
Two Rescuers	15:2		

- First rhythm analysis
 - If **shock advised**, give one shock and resume 5 cycles (2 minutes) of CPR immediately
 - If **no shock advised**, resume 5 cycles (2 minutes) of CPR immediately
- Second rhythm analysis
 - If **shock advised**, give one shock and resume 5 cycles (2 minutes) of CPR immediately
 - If **no shock advised**, resume 5 cycles (2 minutes) of CPR immediately
- Third rhythm analysis
 - If **shock advised**, give one shock and resume 5 cycles (2 minutes) of CPR immediately
 - If **no shock advised**, resume 5 cycles (2 minutes) of CPR immediately
- **After third rhythm analysis**, initiate patient transport. CPR must be continued throughout this period - **DO NOT** withhold CPR
- Analyze patient every 10 minutes thereafter. Continue CPR.
- If return of spontaneous circulation (ROSC) proceed immediately with **Pediatric Post Cardiac Arrest Care Protocol (Pg 43)**
- If re-arrest occurs during transport, resume **Cardiac Arrest Protocol**

HYPOTHERMIC CARDIAC ARREST (CORE TEMPERATURE LESS THAN 32°C)

- Hypothermic patients are to be resuscitated as per normal with defibrillation
- Resuscitation will be continued until active re-warming has returned core temperature to normal or there has been ROSC

PEDIATRIC CARDIAC ARREST Cont'd

¹ HIGH QUALITY CPR

- Minimize interruptions in CPR
- Allow full recoil of the chest between compressions
- Rotate rescuers every 2 minutes if resources allow

PEDIATRIC POST CARDIAC ARREST CARE (RETURN OF SPONTANEOUS CIRCULATION)

1. Manage airway
2. O₂ via NRB or BVM as appropriate (15 L/min)
 - Assist ventilations with BVM if signs of inadequate ventilation are present:
 - Abnormal sounds with breathing, such as snoring, gurgling, or stridor
 - Fatigue with respiratory effort
 - Gaspings
 - Irregular breathing pattern with periods of apnea
 - Little or no chest rise
 - Decreased or absent breath sounds (“silent chest”)
 - Rate and/or depth of breathing grossly insufficient for age
 - Apnea
 - If assisted ventilation is indicated, deliver ventilations by BVM in accordance with the following parameters:

Patient Age	Target Respiratory Rate
Infants (29 days to 12 months)	20 – 30 breaths per minute (1 breath every 2-3 seconds)
Children (1 year to puberty)	16 – 20 breaths per minute (1 breath every 3-4 seconds)
Adolescents (Pre-puberty to adult)	12 breaths per minute (1 breath every 5 seconds)

- Deliver each breath over 1 second
 - Deliver only enough volume to produce visible chest rise
 - Avoid excessive ventilation
3. If defibrillator was used, leave pads in place
 4. Request PCP or ACP intercept if available
 5. Transport and treat based on **General Standards of Care (Pg 5)**
 6. If re-arrest occurs, resume **Pediatric Cardiac Arrest Protocol (Pg 41)**

NOTES

- A copy of the code summary and PCR must be left with the receiving facility

PEDIATRIC SHOCK

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Control bleeding (if applicable)
4. Assess for **Signs and Symptoms of Shock**¹
5. Position patient supine² (Unless patient is in severe respiratory distress)
6. Request PCP or ACP intercept if available
7. Transport and treat based on **General Standards of Care (Pg 5)**

¹SIGNS AND SYMPTOMS OF SHOCK

Patients in shock will often present with the following clinical features:

1) Hypotension (Age dependent)

Age	Hypotension (Systolic Blood Pressure)
0 – 28 days	Less than 60 mmHg
1 month – 12 months	Less than 70 mmHg
1 year – 10 years	[70 + (2 x age in years)] mmHg
Greater than 10 years	Less than 90 mmHg

AND

2) Any **ONE OR MORE** of the following features:

- Rapid and / or shallow breathing
- Cool and / or clammy skin
- Rapid and / or weak pulse(s)
- Near fainting and / or fainting
- Weakness

NOTES

- Shock is a life-threatening, progressive medical condition that results from the inadequate flow of oxygenated blood to critical organs and tissues of the body
- When the blood pressure is inadequate to sustain a regular flow of oxygenated blood to the organs and tissues of the body, organs will be damaged and shock will eventually result
- Shock may result from a number of medical conditions including infection, trauma, blood loss, anaphylaxis, severe dehydration, and various medical conditions

²CAUTION

- Trendelenburg positioning is not indicated in the treatment of shock and is not to be utilized
- Position the patient supine unless they are in severe respiratory distress
- If the patient in shock is suffering from severe respiratory distress position them semi-sitting and assist ventilations as indicated

PEDIATRIC SYMPTOMATIC HYPOGLYCEMIA

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept (if available)
4. If patient meets **Hypoglycemia Treatment Indications¹** administer oral glucose or sugared beverage in accordance with table below:

GLUCOSE (ORAL)	
CLASS	Caloric Agent
INDICATIONS	Adult Symptomatic Hypoglycemia Pediatric Symptomatic Hypoglycemia
CONTRAINDICATIONS	1) Depressed mental status 2) Unable to cough or swallow
PEDIATRIC DOSE	ONE of the following options: 1) Dex 4[®] tablets 20 g (5 tablets) 2) Insta-glucose[®] 1 tube (30 g) 3) 1 cup (250 mL) of juice or regular pop (Non-diet) 4) 4 teaspoons (20 mL) or 4 packets of table sugar dissolved in water

5. Transport and treat based on **General Standards of Care (Pg 5)**

¹HYPOGLYCEMIA TREATMENT INDICATIONS

- 1) Patient is a known diabetic
AND
- 2) Patient is conscious, awake, and able to cough and swallow
AND
- 3) Any **ONE OR MORE** of the following features of hypoglycemia:
 - Confirmed blood sugar less than 4 mmol/L according to bystander or patient
 - Confusion
 - Irritability
 - Weakness
 - Profuse sweating

CAUTION

- **DO NOT** administer oral glucose or sugared beverage if the patient is unconscious, not alert, **OR** unable to cough or swallow
- If blood glucose is determined to be greater than or equal to 4 mmol/L by the patient or a bystander then administration of glucose or a sugared beverage is not indicated

ⓘ All pediatric hypoglycemic patients must be transported for assessment. If a parent, guardian, or mature minor is refusing transport, contact OLMC for direction.

PEDIATRIC CONVULSIVE SEIZURES

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Spinal immobilization if seizure stopped and patient suffered an unprotected fall to ground from an elevation or there is evidence of injury above the collar bones
4. Position patient:
 - Actively seizing – place supine and protect from injury
 - If vomiting occurs, place patient in left lateral recumbent position, maintain airway and prepare for suctioning
 - Postictal – place left lateral recumbent position and maintain airway
5. Request PCP or ACP intercept
6. Transport and treat based on **General Standards of Care (Pg 5)**

PEDIATRIC AGITATED / COMBATIVE

(Patient is danger to self or others)

1. Contact police and request that they attend the scene immediately
2. Manage airway and assist ventilations as necessary
3. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
4. Request PCP or ACP intercept if available
5. Attempt verbal management techniques for crisis intervention to de-escalate the situation and calm the patient
6. If **Indications for Physical Restraint**¹ present, apply the least amount of physical restraint necessary to protect the patient from harming themselves or bystanders until police arrive as per **Agitated Combative / Physical Restraint Reference (Pg 72)**

¹ INDICATIONS FOR PHYSICAL RESTRAINT

- 1) Imminent danger² to life **OR** threat of physical harm to patient and/or bystanders
AND
- 2) Attempts at verbal de-escalation have failed
AND
- 3) Attempts to restrain do **NOT** place the practitioner(s) at significant risk of harm to themselves

NOTES

²**Imminent Danger** – an immediate threat of significant harm to one's self or others, up to and including death

Examples of Imminent Danger:

- Actively attempting suicide
- Actively attempting to cause serious bodily injury to others
- Attempting to jump from a building or moving vehicle

CAUTION

- There is a high risk of positional asphyxia and/or aspiration in patients undergoing chemical or physical restraint. Close and continuous monitoring of these patients, including airway patency and adequacy of respirations is mandatory
- At **NO TIME** should the patient be restrained in the prone (face or chest-down) position
- Always maintain an ability to escape the scene. Position yourself between the patient and the exit at all times to maintain a safe exit should the situation escalate
- Be alert for potential weapons and hazards. If the patient has a weapon, do not attempt to disarm them. Instead, leave the scene and stage until the police declare the scene safe to re-enter
- Be aware of signs of increased agitation or aggression including, but not limited to:
 - Tense posture
 - Loud speech
 - Pacing
 - Threatening statements
 - Clenched hands
 - Hostile or aggressive body language

PEDIATRIC GENERAL APPROACH TO TOXINS MANAGEMENT

1. Scene safety: protect rescuers and patients from immediate danger and contamination
 - **Toxic exposures might require special precautions, including CBRNE precautions or decontamination, before patient treatment begins**
2. Manage airway and assist ventilations as necessary
3. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
4. Monitor vitals
5. If seizure occurs refer to **Pediatric Convulsive Seizure Protocol (Pg 46)**
6. Request PCP/ACP intercept if available. Do not delay transport in cases of severely symptomatic patients

PEDIATRIC OPIOIDS

This protocol is intended for management of the severely symptomatic pediatric patient with suspected or confirmed ingestion or use of an opioid¹ agent

If **ALL** of the following criteria are met proceed with **Naloxone** administration as outlined:

- Impaired consciousness
- Signs of inadequate respiration (slow breathing, shallow breathing, cyanosis)
- Requiring assisted ventilation

Administer **Naloxone**² 4mg IN (intranasal)

- Repeat every 2-3 minutes, if indicated, to improved level of consciousness and adequate ventilation

¹ EXAMPLES OF OPIOIDS INCLUDE BUT ARE NOT LIMITED TO:

- Morphine
- Hydromorphone (Dilaudid)
- Codeine
- Oxycodone (Percocet, OxyContin, OxyNEO)
- Fentanyl
- Tramadol (Tramacet)
- Meperidine (Demerol)
- Methadone
- Buprenorphine (Butrans)
- Heroin

² NOTES

- Examine patient for transdermal opioid patches (placed on the skin), including fentanyl and buprenorphine (Butrans), and remove with a gloved hand
- BVM ventilation **MUST** be provided while preparing for Naloxone administration
- BVM ventilation will be required while waiting for Naloxone to take effect

 Contact OLMC for guidance if required

PEDIATRIC HEAT RELATED ILLNESS

This protocol is intended for the management of patients with exposure to high temperatures or high levels of exertion and without history of recent infection

1. Manage airway and assist ventilations as necessary
2. O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. Measure temperature
5. Begin cooling measures¹ if signs of heat exhaustion or heat stroke present². Continue until temperature is less than 39°C or patient starts shivering.
6. If severe agitation or combativeness is present, concurrently manage as per **Pediatric Agitated / Combative Protocol (Pg 47)**
7. If seizure occurs, proceed with **Pediatric Convulsive Seizure Protocol (Pg 46)** and continue cooling

¹COOLING MEASURES (STOP if patient starts shivering)

- 1) Remove the patient from hot environment and lower ambient temperature in the ambulance
- 2) Remove patient's clothing and apply cool water to patient's skin
- 3) Promote evaporation by using a fan or open window
- 4) Apply ice packs to the groin, neck and axilla. **DO NOT APPLY DIRECTLY TO SKIN**

²SIGNS OF HEAT EXHAUSTION and HEAT STROKE

Patients with heat related illness may exhibit one or more of the following:

Heat Exhaustion

- Decreased coordination
- Sweating
- Tachycardia and hypotension
- Hyperventilation
- Headache
- Abdominal pain and/or nausea and vomiting

Heat Stroke

- 1) Temperature greater than 40°C **AND**
- 2) Altered mental status or Central Nervous System (CNS) dysfunction

NOTES:

- Patients may have normal to slightly elevated temperature with heat exhaustion
- Lack of perspiration is a late sign of heat stroke
- Patients with exertional heat illness may have profound tachycardia as a normal physiological response
- Dehydration may induce a profound tachycardic response in the pediatric patient.

PEDIATRIC HYPOTHERMIA

This protocol is intended for the management of patients with exposure to environmental conditions consistent with hypothermia

1. Manage airway and assist ventilations as necessary
2. O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. Measure temperature
5. If signs of frostbite present:
 - Splint or pad effected area to minimize injury
 - Remove jewelry if required
 - Pad between effected digits and bandage effected tissue loosely with a soft, sterile dressing. Do not put pressure on the effected parts.
6. If signs of hypothermia, proceed with steps for rewarming¹
7. If Cardiac Arrest occurs proceed to **Pediatric Cardiac Arrest Protocol (Pg 41)**

¹STEPS FOR REWARMING

- Remove patient from cold environment
- Remove wet clothing (cutting preferred)
- Cover with blankets
- Increase ambient temperature in ambulance
- Apply radiant heat and/or warm blankets to core

Mild Hypothermia	Severe Hypothermia
1) 32°C-35°C 2) Normal mental status 3) Shivering 4) Normal to slightly elevated vital signs	1) Temperature less than 32°C 2) Decreased LOC, slurred speech and ataxia 3) Decreased heart rate and respiratory rate 4) Shivering absent below 30°C

CAUTION

- Patients in severe hypothermia often become extremely bradycardic.
- Hypothermic patients are at a high risk for ventricular fibrillation, a shockable cardiac rhythm found in cardiac arrest, if handled roughly. Patient movement should be limited and a horizontal position maintained whenever possible.
- Severely hypothermic patients should have their core areas warmed first. Warming extremities before core can precipitate a secondary drop in temperature.
- **DO NOT** attempt to thaw frostbitten areas.
- **DO NOT** ambulate patients with hypothermia.

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PART III: OBSTETRICAL EMERGENCY PROTOCOLS

CHILDBIRTH

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept if available
4. Examine patient and determine if **crowning¹** present (**Pg 54**)
 - **If NO crowning** – place in left lateral recumbent position, discourage patient from bearing down, and initiate transport
 - **If crowning present** – place supine and prepare for imminent delivery

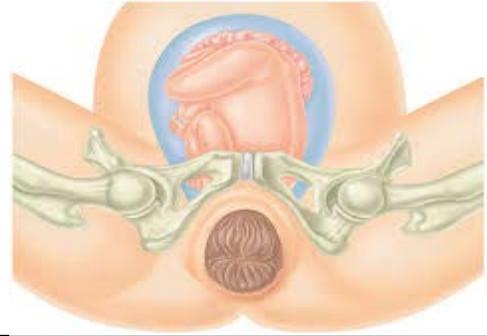
IMMINENT DELIVERY AND POST-PARTUM CARE

- 1) Call for second crew or additional resources, if available
- 2) Warm ambient temperature and prepare equipment
 - Neonatal resuscitation equipment
 - Warm blankets
 - Clamps and scissors to cut umbilical cord
 - Bag for placenta
- 3) Apply gentle pressure to the perineum (skin stretched between the vagina and rectum) using a cupped hand and encourage a controlled (non-explosive) delivery
- 4) Upon delivery of the head sweep your finger around the newborn's neck to determine if the umbilical cord is wrapped around the neck (a nuchal cord) **If nuchal cord present:**
 - Discourage pushing and attempt to guide the loop of cord over the newborn's head prior to delivery of the shoulders
 - If the cord is tight and you are unable to guide over the head, double clamp the cord approximately 2.5 cm apart and cut the cord²
- 5) Gently guide the delivery of the anterior shoulder (shoulder up against the pubic bone) followed by the posterior shoulder (shoulder directed towards the rectum)
- 6) As the delivery proceeds keep the newborn below the level of the cord
- 7) Upon delivery of the newborn double clamp the umbilical cord approximately 8 cm from the newborn and cut between the clamps
- 8) Proceed immediately with the **Neonatal Assessment and Resuscitation Protocol (Pg 57)**
 - If full-term, breathing or crying spontaneously, and with good tone, wrap the newborn and place on the mother's chest to encourage skin to skin contact and reduce risk of hypothermia
- 9) Calculate APGAR Score at 1 and 5 minutes (**Pg 74**)
- 10) Prepare for delivery of placenta
 - Do not pull on umbilical cord.
 - Allow placenta to deliver without being forced.
 - Upon delivery of the placenta, place in a plastic bag along with the umbilical cord
- 11) Perform **uterine fundal massage³** (**Pg 54**)

CHILDBIRTH Cont'd

¹ CROWNING

- The phase at the end of labor in which the fetal head is seen at the opening of the vagina

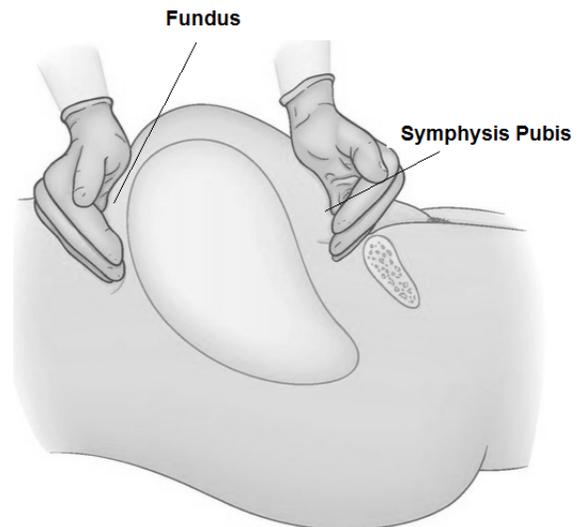


² NOTES

- When the cord is cut be aware that supply of oxygenated blood to the baby has been terminated
- Do not delay delivery after the nuchal cord has been cut
- Encourage active delivery once the nuchal cord has been cut

³ UTERINE FUNDAL MASSAGE

- Place one hand horizontally across the abdomen, just above the Symphysis Pubis (Pubic bone)
- Cup the other hand across the top of the uterus (Fundus)
- Using a kneading or circular motion, massage the uterus between your two hands



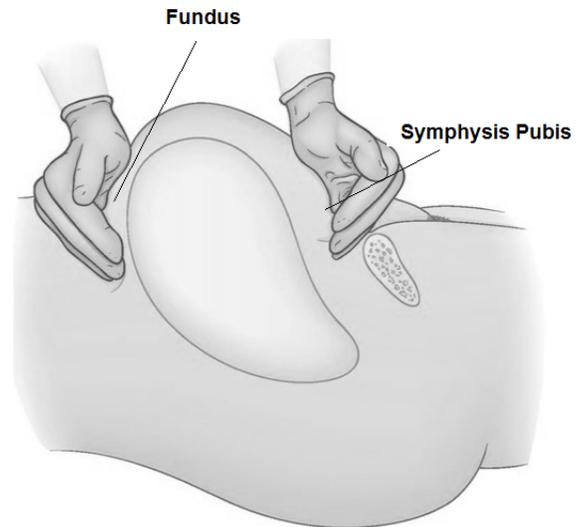
POST-PARTUM HEMORRHAGE

This protocol is intended for persistent and heavy vaginal bleeding post-vaginal delivery that is estimated to be greater than 500 mL that does not slowdown in response to conservative measures including firm uterine fundal massage

1. Manage airway and assist ventilations as necessary
2. Administer O₂ as per **Oxygen Therapy Protocol (Pg 11)**
3. Request PCP or ACP intercept
4. Apply pressure to any bleeding perineal tears or lacerations of the perineum
5. Perform immediate **uterine fundal massage**¹
6. Transport and treat based on **General Standards of Care (Pg 5)**

¹ UTERINE FUNDAL MASSAGE

- Place one hand horizontally across the abdomen, just above the Symphysis Pubis (Pubic bone)
- Cup the other hand across the top of the uterus (Fundus)
- Using a kneading or circular motion, massage the uterus between your two hands



COMPLICATIONS OF DELIVERY

SHOULDER DYSTOCIA

- Place patient in semi-fowler's position and perform **McRoberts Maneuver**¹
- Have assistant stand beside the patient and facing the feet, use the heel of their hand to apply downward suprapubic pressure (just above pubic bone) to encourage the anterior shoulder (shoulder up against the pubic bone) to slip beneath pubic bone
- During contraction, encourage mom to push while assistant continues application of suprapubic pressure – attempt to deliver the anterior shoulder from under the pubic bone
- If all methods fail to deliver the newborn then initiate rapid transport and notify receiving hospital immediately

BREECH PRESENTATION (BUTTOCKS FIRST)

If delivery not imminent:

- Discourage pushing and initiate rapid transport and notify receiving hospital immediately

If delivery imminent:

- Place patient in semi-fowler's position and perform **McRoberts Maneuver**¹
- Sweep out legs and allow the buttocks and trunk to deliver spontaneously
- Support the body with your dominant forearm positioned under the newborn's torso and attempt to guide head from beneath pubic bone

LIMB PRESENTATION

- Place patient in semi-fowler's position and perform **McRoberts Maneuver**¹
- Keep prolapsing limb warm and moist (cover with saline towel or gauze)
- Discourage mother from pushing with contractions

PROLAPSED CORD

- Place patient in supine position and perform **McRoberts Maneuver**¹ with the hips elevated
- Avoid unnecessary manipulation of the cord
- Digitally elevate presenting part off the umbilical cord in order to maintain pulsation
- Cover exposed cord with moist, sterile dressing (saline soaked gauze)
- Initiate rapid transport and notify receiving hospital immediately

¹ MCROBERTS MANEUVER

- Place mother positioned supine or semi-sitting
- With knees bent and out to the side, have patient pull knees towards her shoulders
- Have assistant push on the bottom of the feet to bring knees as high as possible to increase the anterior-posterior diameter of the pelvis



NEONATAL ASSESSMENT AND RESUSCITATION

1. Determine gestational age and proceed with **Neonatal Resuscitation Algorithm (Pg 58)** and in accordance with **General Guidelines** outlined below
2. Request PCP or ACP intercept if available
3. Employ strategies to prevent hypothermia in term or pre-term newborns¹

GENERAL GUIDELINES

NEONATAL CPR (VENTILATIONS AND COMPRESSIONS)

- Use a two-thumb, encircling the chest, technique
- Ensure high quality CPR
 - Minimize interruptions in CPR
 - Allow full recoil of the chest between compressions
 - Deliver each breath over 1 second
 - Deliver only enough volume to produce visible chest rise

Compressions : Ventilation Ratio	Depth	Rate
3:1	1/3 chest depth	90 compressions / minute 30 breaths / minute

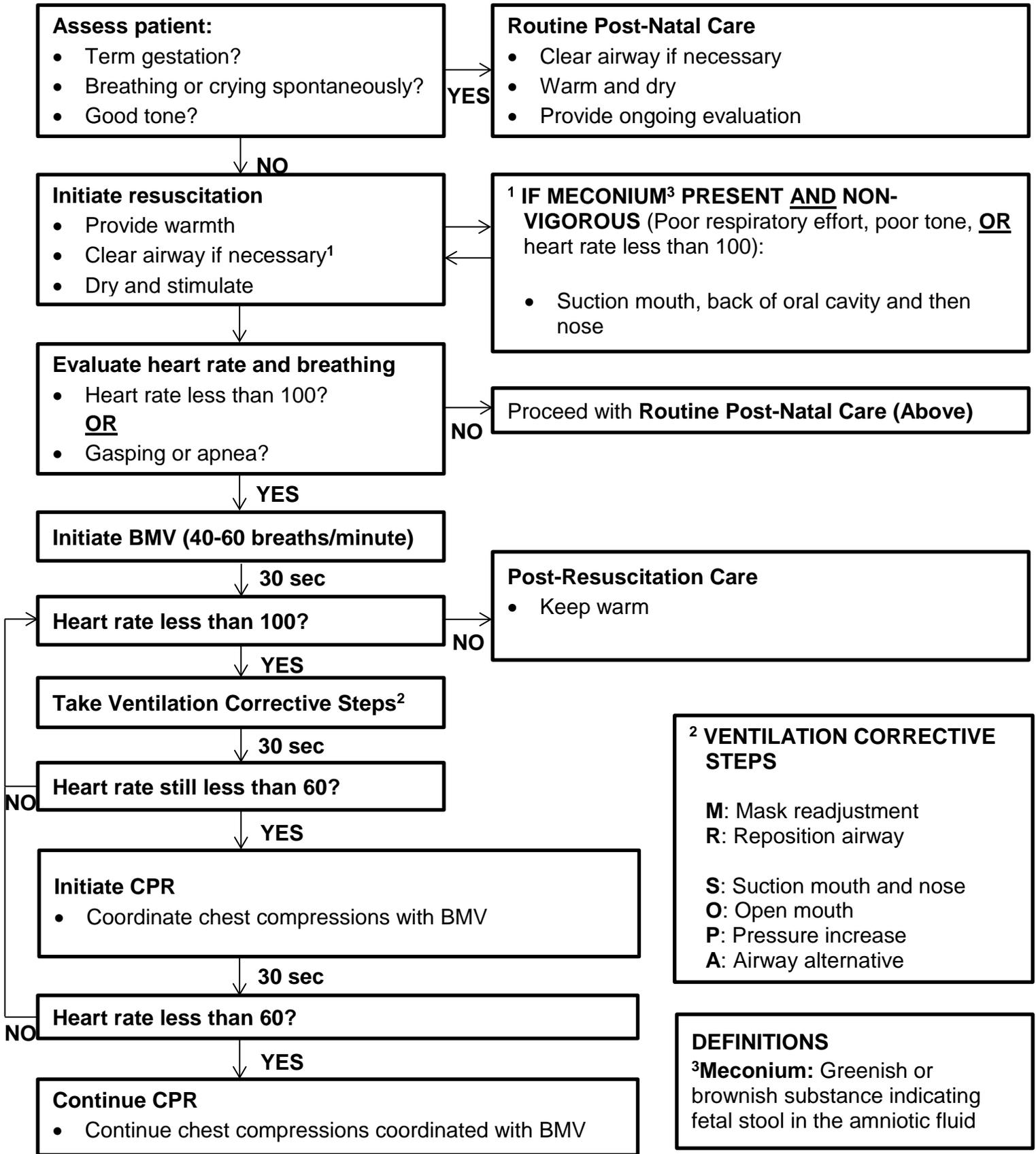
ASSISTED VENTILATION (WITHOUT COMPRESSIONS)

- To be provided if newborn demonstrates ineffective or absent spontaneous respirations without need for chest compressions
- Rate: 40-60 breaths / minute
- Deliver each breath over 1 second
- Deliver only enough volume to produce visible chest rise
- Avoid excessive ventilation

¹ TEMPERATURE CONTROL IN THE JUST-BORN PRETERM PATIENT (LESS THAN 37 WEEKS)

- Hypothermia will have significant harmful effects on the preterm patient
- Warm ambient temperature in anticipation of delivery (above 26°C where possible)
- Dry the newborn
- Cover newborn, from the neck down, with loose fitting plastic “wrap” (circumferential) or a plastic bag
- Wrap newborn in a warm blanket or place skin-to-skin with mother and cover both mother and newborn with a warm blanket

NEONATAL RESUSCITATION



Routine Post-Natal Care

- Clear airway if necessary
- Warm and dry
- Provide ongoing evaluation

¹ IF MECONIUM³ PRESENT AND NON-VIGOROUS (Poor respiratory effort, poor tone, OR heart rate less than 100):

- Suction mouth, back of oral cavity and then nose

Proceed with **Routine Post-Natal Care (Above)**

Post-Resuscitation Care

- Keep warm

² VENTILATION CORRECTIVE STEPS

M: Mask readjustment
R: Reposition airway

S: Suction mouth and nose
O: Open mouth
P: Pressure increase
A: Airway alternative

DEFINITIONS

³Meconium: Greenish or brownish substance indicating fetal stool in the amniotic fluid

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PART IV: REFERENCES

NON-EMS MEDICAL PERSONNEL ON SCENE

The medical care provided at the scene is the responsibility of the highest level provider dispatched to the scene.

A physician, nurse or other medical personnel will only assist in patient care with the approval of the EMS provider.

Physician on Scene

- If the physician provides orders in agreement with the EMS provider's protocols, you may work with that physician within the confines of the provider's protocols
- If the physician provides orders that are in conflict with protocols or that are outside the scope of practice of the provider, the physician must:
 1. Agree to take responsibility for the patient's care
 2. Agree to accompany the patient to the receiving facility
 3. Document their involvement on the PCR and sign the PCR
- If the physician does not agree to the above or at any time terminates care they have initiated, notify the physician that you are required to discuss the case with the OLMC physician and that the OLMC physician may wish to discuss the patient care provided
- Any concerns regarding patient care must be discussed with OLMC

Nurse or other Medical Personnel on Scene

- The nurse or other medical personnel's assistance must follow the EMS provider's protocols
- If the nurse or other medical personnel wish to deviate from the EMS provider's protocols, they shall be informed that care **will not** deviate from the protocols.

Off-duty EMS providers may participate in patient care as per the **Off-Duty EMS Personnel Protocol (Page 62)**. If the off duty EMS provider does not meet the criteria in this protocol, they are considered "Other Medical Personnel" for the purposes of this protocol and are advised to have valid errors and omissions insurance.

Off-duty providers without privately obtained errors and omissions insurance will not be covered by their employer's insurance if they provide patient care while off-duty and will be held personally liable in the event of legal action resulting from the patient encounter.

OFF-DUTY EMS PERSONNEL

Off-duty EMS personnel who are at the scene of an accident may assist members of the responding unit only if:

- Approval is granted by the lead provider
- They agree to take responsibility for patient care, document their involvement on the patient care report and accompany the patient to the hospital if administering a higher level of care than the responding provider
- They have active errors and omissions insurance through one of the following options:
 - A preexisting written memorandum of understanding specifically granting errors and omissions insurance coverage during off-duty hours and for when a practitioner is placed in a humanitarian situations
 - Obtaining appropriate personal errors and omissions insurance

Off-duty providers without errors and omissions insurance will be held personally liable in the event of legal action resulting from the patient encounter.

PMO encourages all practitioners to obtain private errors and omissions insurance, regardless of their employer's insurance, to protect themselves in the event of personal litigation.

PCP/ACP INTERCEPT

EMR/EMR Crew Configuration

If identified by protocol, or when the EMR deems it necessary, a PCP or ACP intercept may be requested.

EMR/PCP Crew Configuration

If identified by protocol, or when the PCP deems it necessary, an ALS intercept may be requested.

Intercepts should be activated as early as possible. They may be cancelled by the requesting crew if reassessment determines that it is not required.

If available, a PCP or ACP intercept **must** be requested in the following clinical scenarios:

- Abdominal pain with abnormal vital signs
- Accident/assault victims with multiple trauma or high-risk injuries and/or unstable vital signs
- Airway compromise/potential compromise
- Altered LOC: unstable or declining
- Anaphylaxis: unresponsive to initial treatment
- Arrest: cardiac or respiratory
- Chest pain or cardiac problems
- Gastrointestinal bleeding with abnormal vital signs
- Hemorrhage: internal/external – uncontrollable or with signs of shock
- Respiratory distress unresponsive to initial treatment
- Seizures: ongoing greater than 5 minutes or repetitive
- Abnormal vital signs

CAUTION

- Do not delay patient transport to await arrival of the intercepting unit at the scene
- Initiate transport and rendezvous with intercepting crew en route to hospital

INTERCEPT DOCUMENTATION

- The original responding crew must document all patient care activities up to, and including, the point of transfer of care on the initial (Primary Claim) PCR. This must also include all patient identifiers and information necessary for billing purposes.
- Once care is transferred to the intercepting crew, the intercepting crew must complete a second PCR documenting all patient care activities from the point of transfer of care until transfer of care to hospital staff. The second PCR must also include all patient identifiers and information necessary for billing purposes.
- The intercepting crew **MUST** document the Primary Claim ID Number of the initial PCR used by the crew that initially responded to the call.
- The original responding crew **MUST** document the PCR number belonging to the intercepting crew in the narrative portion of the original (Primary Claim) PCR.

REFUSAL OF CARE

Adult patients (or a mature minor¹) with medical decision-making capacity have the right to refuse pre-hospital assessment, management, or transport. These patients must sign a Refusal of Care Form provided they meet the criteria outlined below.

Persons that meet **ANY** of the criteria below are eligible to refuse treatment or transport:

- 1) Adult over the age of 18
- 2) Mature minor¹
- 3) Parent or legal representative² of a minor
- 4) Legal representative of dependent adults³

Procedure

1. Determine the patient's capacity⁴ for decision making and document on PCR.

The patient may be considered to have capacity for medical decision-making if they meet **ALL** of the following criteria:

- a) GCS = 15
- b) Converse spontaneously
- c) Fully oriented and follow commands
- d) **DO NOT** have impairment due to drugs or alcohol
- e) Not in a postictal state
- f) Demonstrate a reasonable understanding of **ALL** of the following:
 - the nature of the illness/injury
 - the recommendations made
 - the benefits that could result from treatment or transport
 - the risks involved in not seeking treatment or transport (as outlined and documented by the practitioner)
- g) The decision to refuse treatment or transport is consistent with the patient's normal set of values and beliefs (e.g. is this a decision that the patient would normally make under similar circumstances?)

2. Ensure absence of medical conditions that may affect patients capacity for medical decision-making including but not limited to:
 - Hypoglycemia
 - Hypotension
 - Hypoxia
 - Delirium
 - Dementia
 - Developmental disability
 - Intoxication

REFUSAL OF CARE cont'd

3. If it is determined that the patient has capacity for medical decision-making, contact with OLMC is **NOT** required. Practitioners must ensure to:
 - Explain and document on the PCR the possible risks and consequences of refusal of treatment or transport
 - Educate patient and bystanders to call back if patient worsens or if they change their mind regarding treatment and transport
 - Recommend that contact be made with the patient's family physician
 - Offer assistance in arranging alternative transportation
 - Have patient and witness sign the Refusal of Care Form
4. If it is determined that the patient does **NOT** have capacity for medical decision-making and is suicidal, poses a risk of bodily injury to themselves or others as a result of mental illness, or is intoxicated and in need of medical treatment, contact Police and/or OLMC for assistance.

NOTES

- A refusal of care or transport must be a patient-initiated request or inquiry. Practitioners must never suggest or encourage patients to refuse care and/or transport. Patients have a right to access the care provided in the Emergency Department via medical transport
- Medical decision-making and refusal of care or transport must be a decision made by the patient free of fear, constraint, compulsion, coercion or duress
- Patients who are minors (under age 19 and not considered to be a mature minor¹) cannot refuse care. However, if the minor's parent or legal guardian demonstrates capacity for medical decision-making and agrees to assume responsibility for the minor, they must sign the Refusal of Care Form on behalf of the minor

DEFINITIONS

- ¹ **Mature minor:** A teenager who is assessed by a health care provider to have capacity to make a specific treatment decision based on a demonstrated ability to understand information surrounding his or her presentation including:
 - Nature of his or her medical condition
 - Proposed treatment and/or alternatives
 - Risk and benefits of the proposed treatment and/or alternatives
 - Risks or foreseeable consequences of consent to treatment or refusal of care
- ² **Legal representative:** Court appointed individual(s) responsible for making health care related decisions for dependent adult or minors
- ³ **Dependent adult:** Any adult who is greater than or equal to 18 years of age, completely or partially dependent upon one or more other person(s) for care or support, has not established financial independence and would likely be in danger if care or support was withdrawn
- ⁴ **Capacity:** The patient understands the nature of his or her medical condition, risks and benefits of care and/or transport, risks or foreseeable consequences of refusal of care or transport, and the patient demonstrates this understanding of the explanation(s) of these elements by the attending practitioners

POTENTIAL COMMUNICABLE/QUARANTINABLE DISEASE

INDICATORS OF POTENTIAL COMMUNICABLE OR QUARANTINABLE DISEASE

1) Fever (Temperature greater than or equal to 38°C)

AND

2) Any **ONE OR MORE** of the following:

- Appearing obviously unwell
- Shortness of breath (recent onset)
- Multiple ill travelers aboard conveyance
- Persistent cough or coughing blood
- Persistent vomiting or diarrhea
- Bruising or bleeding (without previous injury)
- Headache
- Confusion (recent onset)
- Sore throat
- Muscle pains
- Intense weakness
- Skin rash

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1. If the patient meets the above indicators of a potential communicable disease, alert all emergency responding agencies of appropriate personal protective equipment (PPE) requirements (to include, but not limited to: **gloves, gown, goggles and N95 mask for the emergency responder; mask and appropriate draping for the patient**)
2. If the patient meets the potential communicable/quarantinable indicators **OR** case involves a **Known Quarantinable Disease¹** **AND** is an international traveler being picked up at a port of entry (air or sea) notify the Quarantine Officer (QO) before leaving the vessel or aircraft and passing through customs (902-873-7659) for further direction
3. Notify the receiving facility of a Potential Communicable/Quarantinable Disease
4. Notify dispatch that the transport vehicle will be unavailable after transport until decontamination has occurred (confer with local hospital Infection Control)

¹ KNOWN QUARANTINABLE DISEASES

Active pulmonary tuberculosis	Argentine hemorrhagic fever
Anthrax	Bolivian hemorrhagic fever
Botulism	Brazilian hemorrhagic fever
Cholera	Crimean-Congo hemorrhagic fever
Diphtheria	Ebola hemorrhagic fever
Measles	Marburg hemorrhagic fever
Pandemic Influenza Type A	Venezuelan hemorrhagic fever
Plague	Rift Valley Fever
Poliomyelitis	Tularemia
Smallpox	Typhoid Fever
Severe Acute Respiratory Syndrome (SARS)	Yellow Fever
	Lassa fever

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MASS CASUALTY INCIDENT MANAGEMENT

ORGANIZATION

1. Incident Command and Triage Coordinator are established by the first arriving unit
 - Roles may change as additional personnel arrive
2. Scene size up

INCIDENT COMMAND

1. Estimate number of victims, and notify dispatch
2. Request appropriate number of responding units, special equipment, mutual aid units, and additional resources as needed
3. Identify staging area, access and egress routes
4. Identify treatment area
5. Assign other positions as additional crews and help arrive:
 - Treatment Coordinator
 - Transport Coordinator
 - Litter bearers / extrication teams
 - Other duties as required

TRIAGE COORDINATOR (Lowest trained personnel)

1. Direct all walking wounded to a designated area
 - If possible, direct a few people to remain in the triage area and assist victims as required
2. Triage of victims should be initiated immediately using the **START (Pg 68)** or **JumpSTART** system (**Pg 69**)
3. Perform only the most life saving measures (open airway, stop bleeding)
4. Oversee and direct litter bearers to transport patients from the triage area to the treatment area according to triaged priority

TREATMENT COORDINATOR (Highest trained personnel)

1. Establish treatment areas
 - If incident is large, designate separate treatment areas for each triage level, including a morgue separate from other victims
2. Ensure aggressive treatment and rapid packaging of patients
3. Assign and supervise treatment teams
4. Assign transport priorities (transport highest priority first) and communicate this to transport coordinator

TRANSPORT COORDINATOR

1. Establish and supervise the Staging Area as well as access and egress routes
2. Establish and supervise the patient loading zone
3. Assign and supervise rapid and efficient loading of patients
4. Ensure smooth flow of ambulance traffic and avoid congestion of vehicles
5. Maintain a log containing the victim names, nature of injuries, time of transport, destination, and triage tag number
6. Notify the receiving facility of patient transports, including a brief description of injuries

NOTES

- There must be adequate medical personnel working in the treatment area prior to initiating transportation of the patients to receiving facilities
- All personnel are to restrict radio communications to a minimum

SIMPLE TRIAGE AND RAPID TREATMENT (START) TRIAGE SYSTEM

The purpose of the **Simple Triage And Rapid Treatment (START)** system is to efficiently triage and transport adult victims of a multiple or mass casualty incident. This is used when the number of injured exceed the capabilities of the first arriving units or for large scale incidents.

GENERAL GUIDELINES

- Triage of victims should take no longer than 60 seconds per patient
- Assess “**R-P-M**” (Respirations, Perfusion, and Mental Status) for each patient
- Tags of appropriate color should be placed on the upper extremity or in a visible location
- Reassessments may be conducted and priority may be changed once all patients have been triaged

PROCEDURE

1. Identify “Walking Wounded”

- Voice triage should be used to direct the walking wounded to a designated area
- If patient (s) able to walk to the designated area → Tag **GREEN – Minor**
- Proceed with evaluation of remaining patients as outlined in Steps 2 – 5

2. Assess R – Respirations

- If respiratory rate is greater than 30 → Tag **Red – Immediate**
- If patient is not breathing → Open airway and reassess
 - If patient remains apneic despite airway opening → **Tag Black – Deceased**

3. Assess P – Perfusion (Radial pulse and capillary refill)

- If absent radial pulse OR capillary refill greater than 2 seconds → Tag **Red – Immediate**

4. Assess M – Mental Status

- If patient is unconscious, disoriented, OR unable to follow simple commands → Tag **Red – Immediate**

5. For all remaining patients → Tag Yellow – Delayed

JUMP SIMPLE TRIAGE AND RAPID TREATMENT (JumpSTART) TRIAGE SYSTEM

The purpose of the **Jump Simple Triage And Rapid Treatment (JumpSTART)** system is to efficiently triage and transport pediatric (Age 1-8 years) victims of a multiple or mass casualty incident. This is used when the number of injured exceed the capabilities of the first arriving units or for large scale incidents.

GENERAL GUIDELINES

- The JumpSTART system is to be utilized in pediatric patients (Age 1-8 years) only
- Triage of victims should take no longer than 60 seconds per patient
- Assess “**R-P-M**” (Respirations, Perfusion, and Mental Status) for each patient
- Tags of appropriate color should be placed on the upper extremity or in a visible location
- Reassessments may be conducted and priority may be changed once all patients have been triaged

PROCEDURE

1) Identify “Walking Wounded”

- Voice triage should be used to direct the walking wounded to a designated area
- If patient (s) able to walk to the designated area → Tag **GREEN – Minor**
- The “walking wounded” categorization does not apply to pediatric patients being carried by an adult to the designated area
- Proceed with evaluation of remaining patients, and those being carried, as outlined below

2) Assess R-P-M

1) R – Respirations

- If respiratory rate is less than 15 or greater than 40 → Tag **Red – Immediate**
- If patient is not breathing → Open airway and reassess
 - If breathing resumes → Tag **Red – Immediate**
 - If patient remains apneic → Check pulse
 - If no pulse → Tag **Black – Deceased**
 - **If pulse present → Perform BMV for 15 seconds (5 ventilations)**
 - If respirations resume → Tag **Red – Immediate**
 - If no respirations → Tag **Black – Deceased**

2) P – Perfusion (radial and brachial pulse)

- If absent radial **AND** brachial pulse → Tag **Red – Immediate**

3) M – Mental Status (AVPU)

- Assess using the AVPU scale and proceed as outlined below:
 - If **Alert**, responsive to **Verbal** stimulus, or appropriately responsive to **Pain** → Tag **Yellow – Delayed**
 - If **Unresponsive**, or demonstrates an inappropriate response to **Pain** → Tag **Red – Immediate**

COMMUNICATIONS REFERENCE

RADIO REPORT TO RECEIVING FACILITY

Radio reports should be kept as concise as possible and contain essential information to ensure Emergency Department preparedness to receive the patient and provide necessary care without delay.

A concise radio report should be followed by a more detailed verbal report upon arrival to the receiving facility.

The purpose of the radio report is to provide an opportunity for the receiving facility to activate the appropriate resources and services to address the immediate needs of the patient.

RADIO REPORT COMPONENTS

- 1) Unit identification
- 2) Age and gender of patient
- 3) Level of consciousness
- 4) Chief complaint or primary reason for transport
- 5) History of present illness or injury
- 6) Relevant Past Medical History
- 7) Relevant medications (Contributing to presentation or taken by patient)
- 8) Relevant physical exam findings
- 9) Treatment rendered and response
- 10) Estimated time of arrival (ETA)

CONSULTATION WITH OLMC

Consultation with OLMC should take place when directed to do so by a protocol **OR** any time the practitioner requires the advice of a physician to care for his or her patient.

Be prepared to provide a comprehensive verbal report to the OLMC physician that includes all the necessary information in order for the physician to properly advise you with respect to patient care.

Upon being connected with the physician you must provide the physician with the following identifying information at the start of the conversation:

- 1) Your name
- 2) Level of training
- 3) Registration number

This identifying information must be repeated to the physician even if you have already provided it to the dispatcher.

COMMUNICATIONS REFERENCE Cont'd

OLMC PATIENT REPORT COMPONENTS

When discussing the patient with the OLMC physician it is important that all necessary pieces of information are presented. This is important to ensure the physician has all the details necessary to provide you with the safest and most appropriate advice for each individual patient. Please be sure to include all of the following OLMC Report components in your case presentation:

- 1) Age and gender of patient
- 2) Chief complaint or primary reason for transport
- 3) History of present illness or injury
- 4) Past Medical History
- 5) Medications
- 6) Allergies
- 7) Physical exam findings
- 8) Complete set of vital signs (Pulse, respiratory rate, blood pressure – provide numbers)
- 9) Treatment rendered and response
- 10) Specific question- state reason for your call (i.e. Patient condition, treatment or transport)

When orders are received from the physician the practitioner must repeat the order(s) including drug name, route of administration, dose and repeats to the physician for clarification

It is essential that you state the numerical value of each vital sign rather than making a general statement such as “vital signs are normal”. What is “normal” will vary depending on the case and the physician requires the actual vital sign result to make a medical recommendation.

COMMUNICATIONS FAILURE

In case of a communications failure with OLMC due to equipment (radio, cell phone, and/or landline) malfunction or due to incident location, the following will apply:

- Practitioner(s), may within the limits of their Certification(s), perform necessary procedures, that are contained within the protocols that would require a direct physician order under normal circumstances
- Procedures performed must be limited to the minimum amount necessary to prevent the loss of life or the critical deterioration of a patient's condition
- All the procedures performed under this order and the conditions that contributed to the communications failure must be documented in detail on the patient care record
- Practitioner must continue to make efforts to contact OLMC during transport

Practitioners are required to contact PMO the following business day to report the details of the communications failure

AGITATED COMBATIVE / PHYSICAL RESTRAINT

Physical restraint is an intervention of last resort that should only be utilized when there is an imminent danger to life or threat of physical harm to the patient and/or bystanders and reasonable attempts to defuse the situation with verbal de-escalation strategies have failed.

Practitioners should utilize the least amount of restraint necessary to protect the patient and/or bystanders from harm until police arrive. Practitioners may apply physical restraint up to the point where such force would reasonably be considered to be excessive or where practitioners are no longer able to safely apply restraint as a result of imminent danger of harm to them.

Provided that indications for physical restraint are present, such restraint may be applied regardless of whether or not the patient has been formally evaluated under the Mental Health Care and Treatment Act, or if the patient is categorized as “voluntary” or “involuntary” under the Act.

INDICATIONS FOR PHYSICAL RESTRAINT

1) Imminent danger to life **OR** threat of physical harm to patient and/or bystanders

AND

2) Attempts at verbal de-escalation have failed

AND

3) Attempts to restrain do not place the practitioner(s) at significant risk of harm to themselves

Police attendance must be requested immediately if there is a need to physically restrain a patient or if a patient has been physically restrained based on the presence of the criteria listed above. If the estimated time of arrival for the police is anticipated to be prolonged, contact OLMC regarding the transport decision.

IMMINENT DANGER

Imminent danger refers to an immediate threat of significant harm to one’s self or others, up to and including death.

Examples of imminent danger include, but are not limited to the following:

- Actively attempting suicide
- Actively attempting to cause serious bodily injury to others
- Attempting to jump from a building or moving vehicle

AGITATED COMBATIVE / PHYSICAL RESTRAINT Cont'd

SITUATIONAL CONSIDERATIONS

Scene Calls

- If previous dispatch information alerts practitioners to a potentially dangerous situation and police are not on scene prior to crew arrival, crews should stage at a safe distance away from the scene and wait for police arrival prior to initiating patient contact.
- If the patient becomes hostile while crew is on scene, exit the scene and remain in the ambulance a safe distance away until police arrive.
- Request that police accompany the patient in the ambulance en route to hospital
- If hard restraints (i.e. hand cuffs) are placed by police, police must accompany the patient in the ambulance.

Inter-facility Transfers (Prior to departure)

- Type of restraint should be ordered by the attending physician and applied before departure from the facility.
- Patients requiring physical restraints must be accompanied by facility escort trained in the use of the applied physical restraints. If hard restraints (i.e. hand cuffs) are in place, police must accompany the patient in the ambulance.
- If chemical restraint is used, a facility escort must accompany the patient.
- If practitioners feel that some sort of restraint is required and is not ordered, they should discuss their concerns with staff at the sending facility. If the matter cannot be satisfactorily resolved practitioners are required to contact OLMC to discuss need for chemical or physical restraint for safe transport. If deemed necessary, the OLMC physician will discuss patient care needs for safe transport with the attending physician at the sending facility.

If at any time during transport the patient's behavior escalates beyond the crew's ability to safely manage the situation (Scene calls or Interfacility transfers):

- Immediately call for police assistance and ask the driver to pull the ambulance over to the side of the road
- Attempt verbal management techniques to de-escalate the situation and calm the patient.
- If verbal management techniques are unsuccessful, and indications for physical restraint are present, both crew members should attempt to physically restrain the patient as per **Agitated / Combative Protocol (Pg 25) or Pediatric Agitated / Combative (Pg 47)**.
- If practitioners are unable to safely apply restraints as a result of imminent danger of harm to themselves, practitioners should exit the vehicle, remove the keys from the vehicle, and move to a safe location, away from the road, while waiting for police to arrive.

PEDIATRIC REFERENCE

CLASSIFICATION OF PEDIATRIC PATIENTS

Pediatric patient: Pre-pubescent. Signs of puberty include breast development on the female and underarm or chest hair on the male.

- **Neonate** 0 to 28 days
- **Infant** 29 days to 12 months
- **Child** 1 year to puberty
- **Adolescent** Puberty to adult

MATURE MINOR

A teenager who is assessed by a health care provider to have capacity to make a specific treatment decision based on a demonstrated ability to understand information surrounding his or her presentation including, but not limited to:

- Nature of his or her medical condition
- Proposed treatment and/or alternatives
- Risks and benefits of the proposed treatment and/or alternatives
- Risks and foreseeable consequences of consent to treatment and/or alternatives
- Risks and foreseeable consequences of refusal of care

APGAR SCORE (Assessed at 1 minute and 5 minutes post-delivery)

Parameter	0	1	2
Appearance, color	Blue, pale	Centrally pink	Completely pink
Pulse, heart rate	None	Less than 100	Greater than 100
Grimace, reflex	No response	Grimace	Cough, gag, cry
Activity, attitude	Flaccid or limp muscle tone	Some flexion	Well-flexed or active motion
Respiratory effort	None	Weak, irregular, irritable	Good, crying

PEDIATRIC HEART RATE AND RESPIRATIONS

Age	Heart Rate	Respirations
Less than 1 year	100 – 160	30 – 60
1 – 2 years	90 – 150	24 – 40
2 – 5 years	80 – 140	22 – 34
6 – 12 years	70 – 120	18 – 30
Greater than 12 years	60 – 100	12 – 16

PEDIATRIC REFERENCE Cont'd

AGE-SPECIFIC HYPOTENSION (5th PERCENTILE FOR SBP) GUIDELINES

Age	Hypotension SBP (Less than 5 th Percentile for SBP)
0 – 28 days	Less than 60 mmHg
1 month – 12 months	Less than 70 mmHg
1 year – 10 years	[70 + (2 x age in years)] mmHg
Greater than 10 years	Less than 90 mmHg

PEDIATRIC WEIGHT ESTIMATION

- **Weight (Kg)** = $3 \times (\text{Age in years}) + 7$

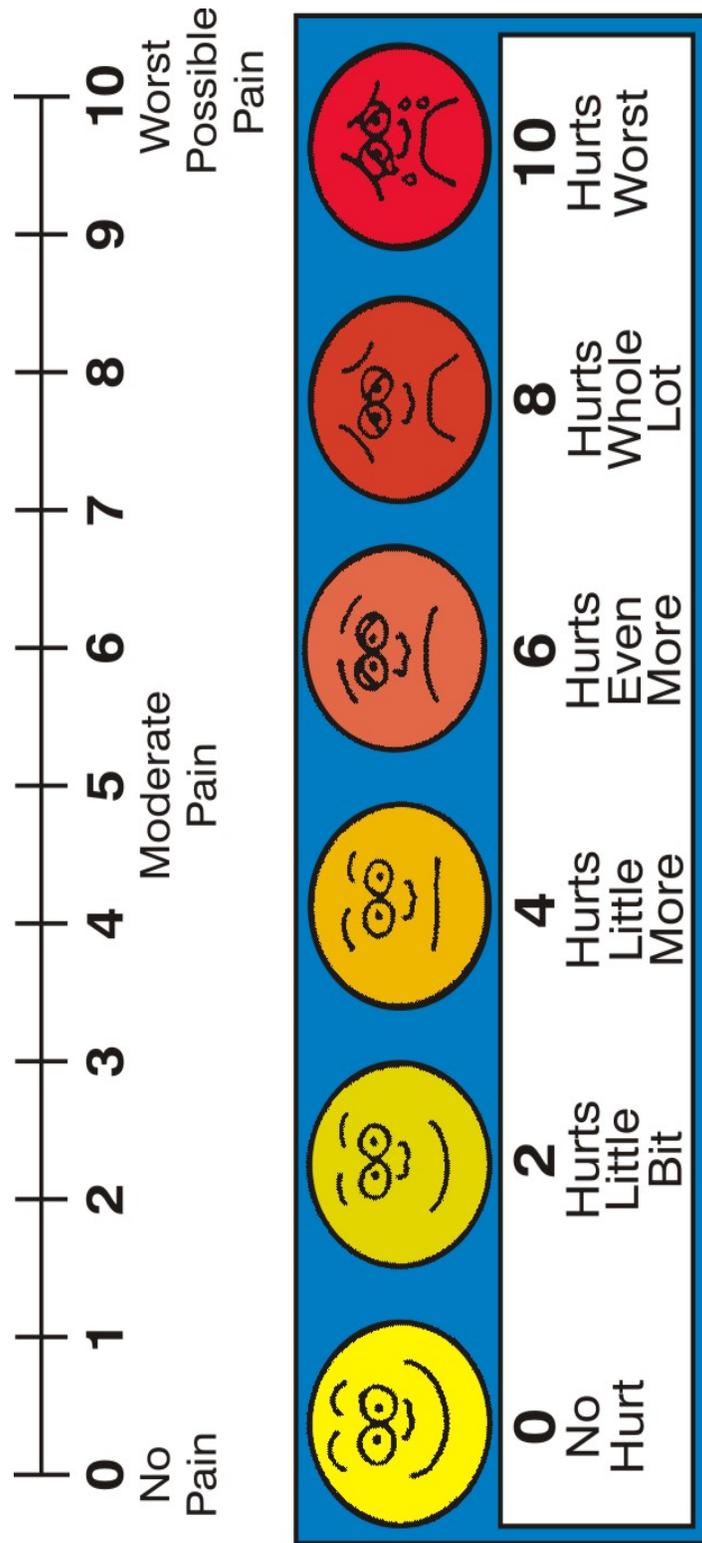
NOTES

- Broselow tape is one of the most accurate ways to estimate pediatric parameters including but not limited to vital signs and weight, and should be used if available

PEDIATRIC DEVICE REFERENCE

Equipment	Under 3 kg	3-5 kg	6-7 kg	8-9 kg	10-11 kg	12-14 kg	15-18 kg	19-23 kg	24-29 kg	30-36 kg
Resuscitation Bag	Infant	Infant	Infant / Child	Child	Child	Child	Child	Child	Child	Adult
Oxygen Mask (NRB)	Infant	Infant	Pediatric	Pediatric	Pediatric	Pediatric	Pediatric	Pediatric	Pediatric	Pediatric / Adult
OPA (mm)	30-40	40-50	50	50	60	60	60	70	80	80
Suction Catheter (F)	5-6	5-8	8	8	10	10	10	10	10	10-12
BP Cuff	Neonatal #5 / Infant	Infant / Child	Infant / Child	Child	Child	Child	Child	Child	Child	Small Adult

PAIN SCALE



DEFINITIONS SURROUNDING DNR, TOR, AND DETERMINATION OF DEATH

SUBSTITUTE HEALTH CARE DECISION MAKER

The person appointed by the Maker of an advance health care directive to make health care decisions on his or her behalf. The first named person or a member of the category of persons on the following list may, **if he or she is at least 19 years of age**, act as a SHCDM; the patient's:

- 1) Appointed substitute decision maker, or a guardian that has been appointed for the purpose by a court and named on the advance health care directive
- 2) Spouse
- 3) Children
- 4) Parents
- 5) Siblings
- 6) Grandchildren
- 7) Grandparents
- 8) Uncles and aunts
- 9) Nephews or nieces
- 10) Another relative
- 11) Health care professional who is responsible for the proposed health care

VALID ADVANCE HEALTH CARE DIRECTIVE (AHCD)

A document which sets out the Maker's instructions or the Maker's general principles regarding his or her health care treatment or in which a Maker appoints a substitute decision maker or both (Maker means a person who makes an advance health care directive).

An Advance Health Care Directive shall be:

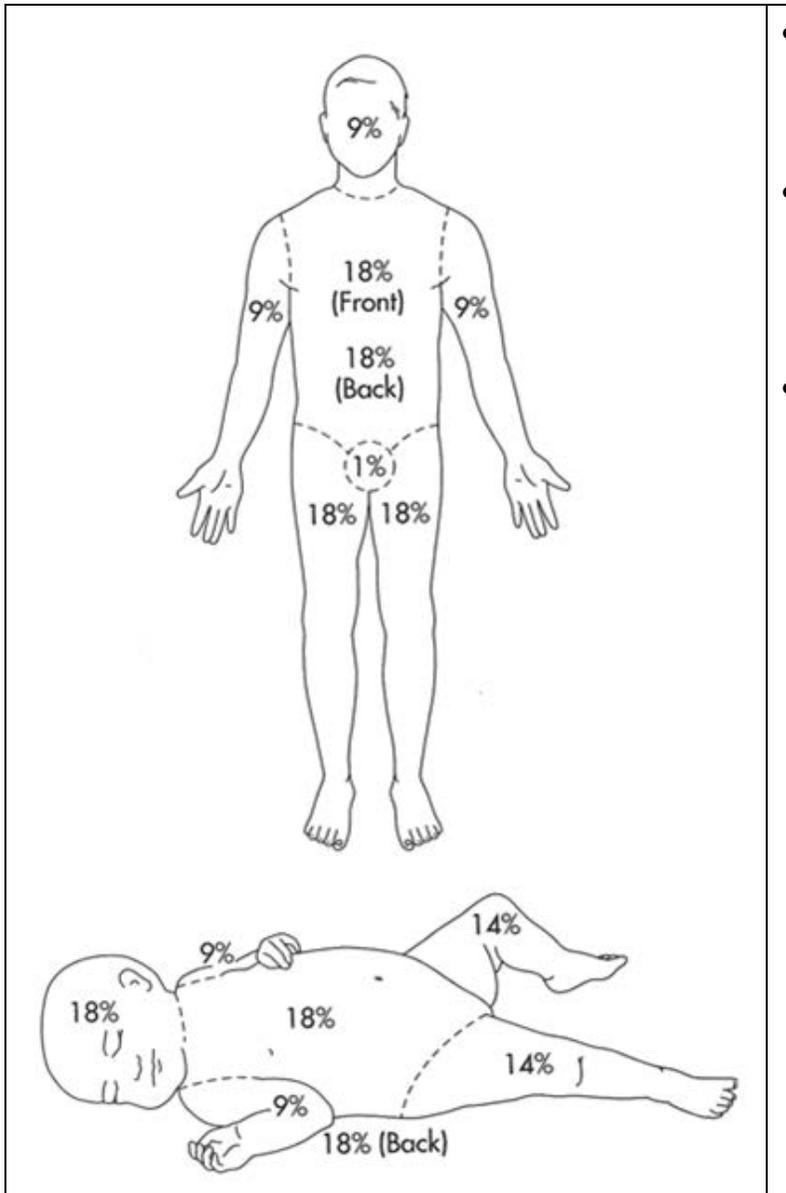
- 1) In writing
- 2) Witnessed by at least 2 independent persons
- 3) Signed by the Maker

VALID DO NOT RESUSCITATE (DNR)

Is a written order issued and signed by a physician that resuscitation should not be attempted if a person suffers cardiac or respiratory arrest. Such an order may be instituted on the basis of an AHCD from a person, or from a substitute health care decision maker, or by a physician, and it is designed to prevent unnecessary suffering.

BURN REFERENCES

RULE OF NINES



- A method of estimating burn injury that divides the total body surface area (BSA) into sections that are multiples of 9%
- This method provides a rough estimate of burn injury size and is most accurate for adults and children greater than 10 years of age
- If burns are irregularly shaped or have a scattered distribution, the Rule of Palms may provide a better estimate of burn surface area. The surface of the patient's hand (palm and fingers) equals approximately 1% of the total BSA.

GLASGOW COMA SCALE

The Glasgow Coma Scale is a clinical tool used to assess the degree of consciousness and neurological functioning - and therefore severity of brain injury - by testing eye opening, verbal response, and motor activity.

	ADULT	CHILDREN	INFANT
EYE OPENING			
4	Spontaneously	Spontaneously	Spontaneously
3	To verbal stimulus	To verbal stimulus	To verbal stimulus
2	To painful stimulus	To painful stimulus	To painful stimulus
1	No opening	No opening	No opening
VERBAL RESPONSE			
5	Completely alert, oriented and appropriate	Completely alert, oriented, and appropriate	Coos, babbles, and smiles as normal
4	Confused	Confused	Irritable cries
3	Inappropriate words	Inappropriate words	Inappropriate cries, screams
2	Incomprehensible	Incomprehensible words or non-specific sounds	Moans in response to pain
1	No verbal response	No verbal response	No verbal response
MOTOR ACTIVITY			
6	Obeys commands	Spontaneous and appropriate	Spontaneous and appropriate
5	Localizes pain	Localizes pain	Localizes pain
4	Withdraws to pain	Flexion withdrawal	Flexion withdrawal
3	Abnormal flexion	Abnormal flexion	Abnormal flexion
2	Extension	Extension	Extension
1	No motor activity	No motor activity	No motor activity

OXYGEN TANK DURATION CHARTS

Table entries represent duration of tank use in minutes

D Cylinder (Minus safe residual of 200 PSI)																				
PSI	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	PSI
1	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	1
2	0	8	16	24	32	40	48	56	64	72	80	88	96	104	112	120	128	136	144	2
3	0	5	11	16	21	27	32	37	43	48	53	59	64	69	75	80	85	91	96	3
4	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	4
5	0	3	6	10	13	16	19	22	26	29	32	35	38	42	45	48	51	54	58	5
6	0	3	5	8	11	13	16	19	21	24	27	29	32	35	37	40	43	45	48	6
7	0	2	5	7	9	11	14	16	18	21	23	25	27	30	32	34	37	39	41	7
8	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	8
9	0	2	4	5	7	9	11	12	14	16	18	20	21	23	25	27	28	30	32	9
10	0	2	3	5	6	8	10	11	13	14	16	18	19	21	22	24	26	27	29	10
11	0	1	3	4	6	7	9	10	12	13	15	16	17	19	20	22	23	25	26	11
12	0	1	3	4	5	7	8	9	11	12	13	15	16	17	19	20	21	23	24	12
13	0	1	2	4	5	6	7	9	10	11	12	14	15	16	17	18	20	21	22	13
14	0	1	2	3	5	6	7	8	9	10	11	13	14	15	16	17	18	19	21	14
15	0	1	2	3	4	5	6	7	9	10	11	12	13	14	15	16	17	18	19	15

↑ **Liters per minute** ↓

OXYGEN TANK DURATION CHARTS Cont'd

Table entries represent duration of tank use in minutes

E Cylinder - Minus safe residual of 200 PSI																				
PSI	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	PSI
1	0	28	56	84	112	140	168	196	224	252	280	308	336	364	392	420	448	476	504	1
2	0	14	28	42	56	70	84	98	112	126	140	154	168	182	196	210	224	238	252	2
3	0	9	19	28	37	47	56	65	75	84	93	103	112	121	131	140	149	159	168	3
4	0	7	14	21	28	35	42	49	56	63	70	77	84	91	98	105	112	119	126	4
5	0	6	11	17	22	28	34	39	45	50	56	62	67	73	78	84	90	95	101	5
6	0	5	9	14	19	23	28	33	37	42	47	51	56	61	65	70	75	79	84	6
7	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60	64	68	72	7
8	0	4	7	11	14	18	21	25	28	32	35	39	42	46	49	53	56	60	63	8
9	0	3	6	9	12	16	19	22	25	28	31	34	37	40	44	47	50	53	56	9
10	0	3	6	8	11	14	17	20	22	25	28	31	34	36	39	42	45	48	50	10
11	0	3	5	8	10	13	15	18	20	23	25	28	31	33	36	38	41	43	46	11
12	0	2	5	7	9	12	14	16	19	21	23	26	28	30	33	35	37	40	42	12
13	0	2	4	6	9	11	13	15	17	19	22	24	26	28	30	32	34	37	39	13
14	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	14
15	0	2	4	6	7	9	11	13	15	17	19	21	22	24	26	28	30	32	34	15

↑ **Liters per minute** ↓

OXYGEN TANK DURATION CHARTS Cont'd

Table entries represent duration of tank use in minutes

M Cylinder - Minus safe residual of 200 PSI																				
PSI	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	PSI
1	0	156	312	468	624	780	936	1092	1248	1404	1560	1716	1872	2028	2184	2340	2496	2652	2808	1
2	0	78	156	234	312	390	468	546	624	702	780	858	936	1014	1092	1170	1248	1326	1404	2
3	0	52	104	156	208	260	312	364	416	468	520	572	624	676	728	780	832	884	936	3
4	0	39	78	117	156	195	234	273	312	351	390	429	468	507	546	585	624	663	702	4
5	0	31	62	94	125	156	187	218	250	281	312	343	374	406	437	468	499	530	562	5
6	0	26	52	78	104	130	156	182	208	234	260	286	312	338	364	390	416	442	468	6
7	0	22	45	67	89	111	134	156	178	201	223	245	267	290	312	334	357	379	401	7
8	0	20	39	59	78	98	117	137	156	176	195	215	234	254	273	293	312	332	351	8
9	0	17	35	52	69	87	104	121	139	156	173	191	208	225	243	260	277	295	312	9
10	0	16	31	47	62	78	94	109	125	140	156	172	187	203	218	234	250	265	281	10
11	0	14	28	43	57	71	85	99	113	128	142	156	170	184	199	213	227	241	255	11
12	0	13	26	39	52	65	78	91	104	117	130	143	156	169	182	195	208	221	234	12
13	0	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	13
14	0	11	22	33	45	56	67	78	89	100	111	123	134	145	156	167	178	189	201	14
15	0	10	21	31	42	52	62	73	83	94	104	114	125	135	146	156	166	177	187	15

↑ **Liters per minute** ↓

METRIC CONVERSION CHARTS

TEMPERATURE		WEIGHT		WEIGHT	
°F	°C	lbs	kg	lbs	kg
106	41.1	396	180	66	30
105	40.6	385	175	64	29
104	40	374	170	62	28
103	39.4	363	165	59	27
102	38.9	352	160	57	26
101	38.3	341	155	55	25
100	37.8	330	150	53	24
99	37.2	319	145	51	23
98.6	37	308	140	48	22
97	36.1	297	135	46	21
96	35.6	286	130	44	20
95	35	275	125	42	19
94	34.4	264	120	40	18
93	33.9	253	115	37	17
92	33.3	242	110	35	16
91	32.8	231	105	33	15
90	32.2	220	100	31	14
89	31.7	209	95	29	13
88	31.1	198	90	26	12
87	30.6	187	85	24	11
86	30	176	80	22	10
85	29.4	165	75	20	9
84	28.9	154	70	18	8
83	28.3	143	65	15	7
82	27.8	132	60	13	6
81	27.2	121	55	11	5
80	26.7	110	50	9	4
79	26.1	99	45	7	3
78	25.5	88	40	4	2
77	25	77	35	2	1

ACRONYMS / ABBREVIATIONS

A-B-C	Airway Breathing Circulation	LPM	Liters Per Minute
ACLS	Advanced Cardiac Life Support	LSN	Last Seen Normal
ACP	Advanced Care Paramedic	MCC	Motorcycle Crash
AED	Automated External Defibrillator	mcg	Micrograms
AMI	Acute Myocardial Infarction	mL	Milliliter
AP	Anterior Posterior	mmHg	Millimeters of Mercury
BLS	Basic Life Support	MOI	Mechanism of Injury
BMV	Bag Mask Ventilation	MVC	Motor Vehicle Crash
BSA	Body Surface Area	NRB	Non-Rebreather Mask
BVM	Bag Valve Mask	NRP	Neonatal Resuscitation Program
C-A-B	Circulation Airway Breathing	NYD	Not Yet Diagnosed
CBRNE	Chemical, Biological, Radiological, Nuclear Explosives	OLMC	Online Medical Control
COPD	Chronic Obstructive Pulmonary Disease	PCP	Primary Care Paramedic
DBP	Diastolic Blood Pressure	PCR	Patient Care Report
DKA	Diabetic Ketoacidosis	PMO	Provincial Medical Oversight Program
DNR	Do Not Resuscitate	PO	Per Os (by mouth, orally)
ECG	Electrocardiogram	PPE	Personal Protective Equipment
EMR	Emergency Medical Responder	PSI	Pounds per Square Inch
g	Gram	QO	Quarantine Officer
GCS	Glasgow Coma Scale	RA	Right Arm
GI	Gastrointestinal	RL	Right Leg
HAZMAT	Hazardous Materials	ROSC	Return of Spontaneous Circulation
HR	Heart Rate	RR	Respiratory Rate
HTN	Hypertension	Rt	Right
IDDM	Insulin-Dependent Diabetes Mellitus	SBP	Systolic Blood Pressure
JVD	Jugular Vein Distention	SHCDM	Substitute Health Care Decision Maker
lbs	Pounds	TOR	Termination of Resuscitation
LOC	Level Of Consciousness	VSA	Vital Signs Absent
Lt	Left		

MEDFLIGHT NL – AUTO LAUNCH CRITERIA

Calls that include **ANY ONE** of the following:

- Prolonged extrication
- Remote location
- Inaccessibility for ground EMS (i.e.: islands, mountains, parks)
- Mass casualty or disaster situation

YES

Call when TRAUMA related calls meet the following PATIENT TRANSPORT CRITERIA:

Transport to a Regional Trauma Centre is greater than 60 minutes by ground and one or more of the following:

- GCS less than or equal to 13
- History of unconsciousness and GCS not yet returned to 15
- Respiratory rate outside normal parameters for patients age
- Clinical signs of shock
- Penetrating injury to chest, neck, head, abdomen, groin or proximal Extremity (above knee or elbow)
- Flail chest
- Major amputation
- Unstable pelvic fracture
- Isolated spinal cord injury with deficits
- 2 or more proximal long bone fractures
- Facial or airway burns with or without inhalation injury
- 2nd degree burns greater than 20%
- 3rd degree burns involving the eyes, neck, hands, feet or groin
- 3rd degree greater than 10%
- High voltage electrical burns

YES

Call when the patient requires critical care transport with specialized equipment for secondary response at the scene or during transport

YES

Call when any patient that is medically unstable or critically ill where time to definitive care by ground is in excess of complete Air Medical transport time

YES

**Contact Eastern Health's Medical Communications Centre to
Request Launch Air Ambulance Response
1-877-709-0505**

CONTRAINDICATIONS TO AUTO LAUNCH

- Patient in cardiac arrest
- Terminally ill patient
- Patient of sound mind who refuses transfer
- Stable patient where another means of transport would be more appropriate

PART V: MEDICATION FORMULARY

ACETYLSALICYLIC ACID (ASA)

CLASS	Platelet aggregation inhibitor
INDICATIONS	Ischemic Chest Pain
CONTRAINDICATIONS	<ol style="list-style-type: none">1) Hypersensitivity to ASA or NSAIDS2) History of active bleeding3) Active bronchospasm or history of severe asthma with bronchospasm related to ASA or NSAIDS4) Age less than 16 years
PRECAUTIONS	<ul style="list-style-type: none">• Pregnancy• Bleeding disorders
ADULT DOSE	160-162 mg PO chewed
NOTES	<ul style="list-style-type: none">• ASA should still be administered if patient has already taken their usual prescribed daily dose of ASA• If the patient has taken ASA on the advice of the dispatcher, confirm correct identity of medication, dose, and expiration date. If able to confirm appropriate self-administration do not administer additional ASA. If ASA taken is enteric coated, administer ASA as per protocol.• Regular use of anticoagulants, such as warfarin, is not a contraindication to ASA administration

GLUCOSE (ORAL)

CLASS	Caloric Agent
INDICATIONS	Adult Symptomatic Hypoglycemia Pediatric Symptomatic Hypoglycemia
CONTRAINDICATIONS	<ol style="list-style-type: none">1) Depressed mental status2) Unable to cough or swallow
PEDIATRIC DOSE	ONE of the following options: <ol style="list-style-type: none">1) Dex 4[®] tablets 20 g (5 tablets)2) Insta-glucose[®] 1 tube (30 g)3) 1 cup (250 mL) of juice or regular pop (Non-diet)4) 4 teaspoons (20 mL) or 4 packets of table sugar dissolved in water

NALOXONE HYDROCHLORIDE

CLASS	Opioid antagonist
INDICATIONS	Adult Toxin Management, Opioids Pediatric Toxin Management, Opioids
CONTRAINDICATIONS	1) Hypersensitivity
SIDE EFFECTS	<ul style="list-style-type: none">• Acute opioid withdrawal
ADULT DOSE	<ul style="list-style-type: none">• 4 mg IN (intranasal)• Repeat every 2-3 minutes, if indicated, to improved respiratory drive
PEDIATRIC DOSE	<ul style="list-style-type: none">• 4 mg IN (intranasal)• Repeat every 2-3 minutes, if indicated, to improved level of consciousness and improved respiratory drive
NOTES	<ul style="list-style-type: none">• The duration of action of the opioid may be longer than the duration of action of naloxone and repeat administration of naloxone may be required if respiratory depression recurs• Be alert for potential acute agitation or combativeness following administration of naloxone to patients with opioid dependency. Administer dose only to improve respiratory drive.• Examples of shorter acting opioids include, but are not limited to: fentanyl, hydromorphone (Dilaudid), morphine (Morphine-IR), meperidine (Demerol), codeine, heroin, sufentanyl, Darvon, oxycodone• Examples of longer acting opioids include, but are not limited to: methadone, MS-Contin, OxyNEO, OxyContin, Hydromorph-Contin, Morphine-SR

NOTES