INTENT:

The intent of this manual is to provide guidance to emergency medical services personnel in the assessment and treatment of both emergency and non-emergency patients in the pre-hospital setting.

LEGISLATIVE AUTHORITY:

RELATED GUIDELINES LINK:

GUIDELINE/GENERAL INFORMATION:

Saskatchewan Emergency Treatment Protocol Manual
This Manual is produced for use by, First Responders, EMR's, EMT's, EMT-A's, and EMT-P's as it pertains to their particular level of training and scope of practice, as well as physician medical advisors providing oversight to emergency medical services in the Province of Saskatchewan.

These protocols reflect the recommendations from members of the Provincial Emergency Services Practice Committee, which are then approved by the College of Physicians and Surgeons of Saskatchewan and agreed upon by the Ministry of Health and Saskatchewan College of Paramedics for implementation. It is the responsibility of care providers to ensure they are familiar with these protocols and the scope of practice.

Although the various persons involved in the development of the protocols portion of this manual have tried to ensure that all dosages and information are correct, occasional discrepancies and typographical errors may occur. As such the writers and editors of the protocols are not responsible for any errors or problems arising from such errors. Should an error be noted, the Ministry of Health would appreciate being notified immediately. Any suggested changes, or requests for new protocols are forwarded to the following address.

Ministry of Health
Acute & Emergency Services
Saskatchewan Health
3475 Albert St.
Regina, SK S4S 6X6

NOTE: To ensure that you are working from the current version of this protocol manual check http://www.collegeofparamedics.sk.ca/resources/protocolmanual.php

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<thead>
<tr>
<th>PROCEDURES</th>
<th>1st RESP.</th>
<th>EMR</th>
<th>EMT</th>
<th>EMT-A</th>
<th>EMT-P</th>
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</table>

**Note:**

1. The use of this device or skill is conditional following successful completion of a teaching module and approved training by the Saskatchewan College of Paramedics.
2. EMT practitioners must have completed or taken a PCP or PCP bridge equivalent program to perform this skill set or give certain medications to patients.
### Approved Medications for Ambulance Personnel Inter-facility Transfers

<table>
<thead>
<tr>
<th>Medication</th>
<th>1&lt;sup&gt;st&lt;/sup&gt; RESP.</th>
<th>EMR</th>
<th>EMT</th>
<th>EMT-A</th>
<th>EMT-P</th>
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<td>Monitor:</td>
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<td>Antimicrobials</td>
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<td>Blood /Blood Products</td>
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<td>Blood /Blood Products</td>
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<td>Heparin</td>
<td></td>
<td>Glycoprotein IIB/IIIA Inhibitors</td>
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<td>KCL</td>
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<td>Gravol</td>
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<td>Heparin</td>
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<td>Crystalloid IV solutions</td>
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<td>Administration of Medications Other Than I.V.</td>
<td>Patient's Own Nitroglycerine ASA</td>
<td>Patient's Own Nitroglycerine Activated Charcoal ASA</td>
<td>See Below</td>
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**Monitor:**
- Antimicrobials
- Blood /Blood Products
- Diazepam
- Glycoprotein IIB/IIIA Inhibitors
- Gravol
- Heparin
- KCL
- Lorazepam
- Midazolam
- Pantaloc
- Crystalloid IV solutions
- Syntocinon
- Amiodarone
- Blood /Blood Products
- Diazepam
- Epinephrine
- Glycoprotein IIB/IIIA Inhibitors
- Dopamine
- Gravol
- Heparin
- Insulin
- KCL
- Lidocaine
- Lorazepam
- Midazolam
- Nitro Drips
- Pantaloc
- Crystalloid IV solutions
- Syntocinon
Medications Approved for Administration by Ambulance Personnel

<table>
<thead>
<tr>
<th>Medication/Solution</th>
<th>EMT</th>
<th>EMT-A</th>
<th>EMT-P</th>
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<tbody>
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<td>Acetaminophen (Tylenol)</td>
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<td>Adenosine (Adenocard)</td>
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<td>D50W/D25W</td>
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<td>Dimenhydrinate (Gravol)</td>
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<td>Epinephrine 1:10,000</td>
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<td>Vasopressors</td>
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</table>

**NOTE:**

For medical devices that can be monitored during inter-facility transfer see Protocol IP2.

Although the most ideal routes of the administration of medications to patients are listed in this protocol manual; the protocol manual can not describe and anticipate every scenario of how a medication should be delivered. In some instances it may be beneficial to the patient and ambulance personnel to choose a different route. Practitioners must be aware which routes a medication can be delivered, the proper dosage of the medication and what would be most optimal for the patient.

The education, knowledge and awareness of routes and medications in a practitioner's scope of practice are the responsibility of each practitioner.
GENERAL PROTOCOLS

GP1  Protocol Development
GP2  Physician on Scene
GP3  Destination & Bypass
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GP23 Urinary Catheterization
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GP25 Protocol Deviation

SCOPE OF PRACTICE

TREATMENT PROTOCOLS

CARDIAC

MEDICAL

TRAUMA

INTER-FACILITY TRANSFER PROTOCOLS

INDEX
Prehospital providers frequently request that a medication or other intervention be included in the Emergency Treatment Protocol Manual. For this to occur, a proposal must be developed in order to justify this action. The Saskatchewan College of Paramedics and the Ministry of Health have developed a process for protocols to be amended and created. Changes to medications and interventions can only be considered following evidence based research. In proposing changes to scope of practice or protocol the following process is to be used as a guide.

**Proposed Evidence-Based Skill/Medication Change**

<table>
<thead>
<tr>
<th>Author:</th>
<th>Care Provider: EMT___ EMT-A ___ EMT-P ___</th>
</tr>
</thead>
<tbody>
<tr>
<td>Author’s Provider Venue:</td>
<td>Date Submitted:</td>
</tr>
</tbody>
</table>

**Step 1: STATE THE PROPOSAL:**

State whether this is a new protocol, revision to a current protocol, or a recommended deletion of a current protocol. Also provide a short statement on the new protocol you are proposing or the current protocol you are proposing change.

**Step 1(a): REFINE THE QUESTION:**

State the question as a positive or negative hypothesis using a single sentence if possible. Include the type of patients this may apply to, the setting, specific intervention(s) you are proposing, if it is a medication include dose/route, and include specific outcomes expected.

**Step 1(b): GATHER EVIDENCE AND DEFINE YOUR STRATEGY:**

In gathering evidence you must gather evidence that both supports and refutes your hypothesis to ensure both benefit and risk have been assessed by your study.

**LIST THE KEYWORD SEARCHES USED AND NUMBER OF HITS:**

**LIST THE DATABASES SEARCHED:**

**LIST THE MAJOR CRITERIA USED TO LIMIT YOUR SEARCH; STATE THE INCLUSION OR EXCLUSION CRITERIA**

(e.g., only human studies with control group/without control group, animal studies used, N subjects, type of methodology, peer-reviewed manuscripts.) List the number of articles/sources meeting the criteria for further review. Create a citation marker for each study using the author(s) initials, date and journal/site the study can be located. If possible include a hard copy of the study with your submission.

**The protocol will:**

- Demonstrated the need
- Be evidence-based
- Feasible to implement
- Demonstrated public interest
GP1

Protocol Development

STEP 2: ASSESS THE QUALITY OF THE EVIDENCE

STEP 2(a): DETERMINE THE LEVEL OF EVIDENCE:

For each article/source from step one, assign a level of evidence-based on study design and methodology.

<table>
<thead>
<tr>
<th>Level of Evidence</th>
<th>Definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1</td>
<td>Randomized clinical trials or meta-analyses of multiple clinical trials with substantial treatment effects</td>
</tr>
<tr>
<td>Level 2</td>
<td>Randomized clinical trials with smaller or less significant treatment effects</td>
</tr>
<tr>
<td>Level 3</td>
<td>Prospective, controlled, non-randomized, cohort studies</td>
</tr>
<tr>
<td>Level 4</td>
<td>Historic, non-randomized, cohort or case-control studies</td>
</tr>
<tr>
<td>Level 5</td>
<td>Case series; patients compiled in serial fashion, lacking a control group</td>
</tr>
<tr>
<td>Level 6</td>
<td>Animal studies or mechanical model studies</td>
</tr>
<tr>
<td>Level 7</td>
<td>Extrapolations from existing data collected for other purposes, theoretical analyses</td>
</tr>
<tr>
<td>Level 8</td>
<td>Rational conjecture (common sense); common practices accepted before evidence-based guidelines</td>
</tr>
</tbody>
</table>

STEP 2(b): CRITICALLY ASSESS EACH ARTICLE/SOURCE IN TERMS OF RESEARCH DESIGN AND METHODS

Was the study well executed? Suggested criteria appear in the table below. Assess design and methods and provide an overall rating. Ratings apply with each level; A Level 1 study can be excellent or poor as a clinical trial, just as a Level 6 study could be excellent or poor as an animal study.

<table>
<thead>
<tr>
<th>Component of Study and Rating</th>
<th>Excellent</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
<th>Unsatisfactory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design &amp; Methods</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Highly appropriate sample or model, randomized, proper controls AND Outstanding accuracy, precision, and data collection in its class</td>
<td>Highly appropriate sample or model, randomized, proper controls OR Outstanding accuracy, precision, and data collection in its class</td>
<td>Adequate, design, but possibly biased OR Adequate under the circumstances</td>
<td>Small or clearly biased population or model OR Weakly defensible in its class, limited data or measures</td>
<td>Anecdotal, no controls, off target end-points OR Not defensible in its class, insufficient data or measures</td>
</tr>
</tbody>
</table>

A = Return of spontaneous circulation  
B = Survival of event  
C = Survival to hospital discharge  
D = Intact neurological survival  
E = Other endpoint
**GP1**

**Protocol Development**

**STEP 2(c) DETERMINE THE DIRECTION OF THE RESULTS AND STATISTIC: Supportive? Neutral? Opposed?**

<table>
<thead>
<tr>
<th>DIRECTION of study by results &amp; statistics:</th>
<th>SUPPORT the proposal</th>
<th>NEUTRAL</th>
<th>OPPOSE the proposal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Results</strong></td>
<td>Outcome of proposed guideline superior, to a clinically important degree, to current approaches</td>
<td>Outcome of proposed guideline no different from current approach</td>
<td>Outcome of proposed guideline inferior to current approach</td>
</tr>
</tbody>
</table>

**Step 2(d): Cross tabulate assessed studies by a) level, b) quality and c) direction (i.e., supporting or neutral/ opposing); combine and summarize.** Exclude the Poor and Unsatisfactory studies. Sort the Excellent, Good, and quality studies by both Level and Quality of evidence, and Direction of support in the summary grids below. Use citation marker (e.g. author/ date/source). In the Neutral or Opposing grid use bold font for Opposing studies to distinguish them from merely neutral studies. Where applicable, please use a superscripted code (shown below) to categorize the primary evidence.

**Supporting Evidence**

<table>
<thead>
<tr>
<th>Quality of Evidence</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
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<tbody>
<tr>
<td>Excellent</td>
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</tr>
</tbody>
</table>

**Level of Evidence**

A = Return of spontaneous circulation  C = Survival to hospital discharge
B = Survival of event                  D = Intact neurological survival
                                           E = other endpoint
**Neutral of Opposing Evidence**

<table>
<thead>
<tr>
<th>Quality of Evidence</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</tr>
</tbody>
</table>

**Level of Evidence**

A = Return of spontaneous circulation  
C = Survival to hospital discharge  
B = Survival of event  
D = Intact neurological survival  
E = other endpoint

**3. DETERMINE THE CLASS OF RECOMMENDATION:** Use the classifications listed below.

<table>
<thead>
<tr>
<th>CLASS</th>
<th>CLINICAL DEFINITION</th>
<th>REQUIRED LEVEL OF EVIDENCE</th>
</tr>
</thead>
</table>
| **Definitely recommended.** Definitive, **excellent** evidence provides support. | • Always acceptable, safe  
• Definitely useful  
• Proven in both efficacy & effectiveness  
• Must be used in the intended manner for proper clinical indications. | • One or more Level 1 studies are present (with rare Exceptions)  
• Study results consistently positive and compelling |
| **Class II:** Acceptable and useful | • Safe, acceptable  
• Clinically useful  
• Not yet confirmed definitively | • Most evidence is positive  
• Level 1 studies are absent, or inconsistent, or lack power  
• No evidence of harm |
| **Class IIa:** Acceptable and useful **Good** evidence provides support | • Safe, acceptable  
• Clinically useful  
• Considered treatments of choice | • Generally higher levels of evidence  
• Results are consistently positive |
| **Class IIb:** Acceptable and useful **Fair** evidence provides support | • Safe, acceptable  
• Clinically useful  
• Considered optional or alternative treatments | • Generally lower or intermediate levels of evidence  
• Generally, but not consistently, positive results |
| **Class III:** Not acceptable, not useful, may be harmful | • Unacceptable  
• Not useful clinically  
• May be harmful. | • No positive high level data  
• Some studies suggest or confirm harm. |
| Indeterminate | • Research just getting started.  
• Continuing area of research  
• No recommendations until further research | • Minimal evidence is available  
• Higher studies in progress  
• Results inconsistent, contradictory  
• Results not compelling |
GP1 Protocol Development

REVIEWERS PERSPECTIVE AND POTENTIAL CONFLICTS OF INTEREST:

Briefly summarize your background, clinical specialty, research training, or other relevant personal background that define your perspective on the proposal. List any potential conflicts of interest involving consulting, compensation, or equity positions related to drugs, devices, or entities impacted by the proposal. Disclose any research funding from involved companies or interest groups.

REVIEWERS FINAL COMMENTS AND ASSESSMENT OF BENEFIT/RISK:

Summarize your final evidence integration and the rationale for the class of recommendation. Describe any mismatches between the evidence and your final Class of Recommendation. "Mismatches" refer to selection of a recommendation that heavily influenced by other factors than just the evidence. For example, the evidence is strong, but implementation is difficult; expensive; evidence weak, but future definitive evidence is unlikely to be obtained. What is the frequency of adverse events? What is the possibility of harm? Describe any value or utility judgments you may have made, separate from the evidence. For example, you believe evidence-supported interventions should be limited to in-hospital. Include a draft protocol, as it would appear in the Emergency Treatment Protocol Manual. It is essential that any proposal contain not only the possible benefits but also the possible risks as well in order to provide a balanced view of the medication/intervention.

Proposals should be sent to:

Susan Burns
Ministry of Health
Acute & Emergency Services
3475 Albert Street
Regina, Saskatchewan
S4S 6X6
susan.burns@health.gov.sk.ca

Sheri A. Hupp
Saskatchewan College of Paramedics
851 Argyle Street North
Regina, SK
S4R 8H1
sheri.hupp@collegeofparamedics.sk.ca

Saskatchewan Health and the Saskatchewan College of Paramedics will review all submissions and bring forward proposals they agree are appropriate to the Provincial Emergency Services Practice Committee (PESPC), for further discussion.

If consent to proceed with the proposal is obtained from the PESPC, the proposal will be drafted as a new protocol or an addition to a current protocol and will be forwarded to the College of Physicians and Surgeons for consideration and approval. If the proposal is approved the Ministry of Health and the Saskatchewan College of Paramedics will determine the time and process for implementation of the new protocol or changes to a current protocol.

The development of a proposal for a protocol is time consuming and can be frustrating. However, expansion of scope of practice can only be achieved by trying to identify areas where change may benefit our patients.
GP2  **Physician on Scene**

If the patient's private physician is present and assumes responsibility for the patient's care, the prehospital provider should defer to the orders of the private physician. The care provider should notify dispatch that the patient's personal physician is on scene and is assuming responsibility for the patient's care and at what time this occurred. Dispatch should record this as an extra part of the time record. The **prehospital provider's responsibility for the patient's care continues at anytime the physician is no longer in attendance and regular channels for medical control should be used at that time.**

or

If an intervening physician is present and medical control does not exist, the prehospital provider should relinquish responsibility for patient management to that physician. The physician should demonstrate willingness to assume responsibility, document interventions and sign the Patient Care Report (PCR) form. When these conditions exist, the prehospital provider should defer to the wishes of the physician on scene. If the treatment at the scene needs to differ from that outlined in approved protocol, the physician should agree in advance to accompany the patient to the health care facility.

or

If an intervening physician is present, and on-line medical control exists, the on-line physician is ultimately responsible. Responsibility for the immediate continuing care of the patient will be decided by communication between the two physicians and the prehospital provider will then be informed by the on-line physician as to their decision.

or

If there is any disagreement between the intervening physician and the on-line physician, the prehospital provider should take orders from the on-line physician and place the intervening physician in contact with the on-line physician. The on-line physician has the option of managing the case entirely, working with the intervening physician, or allowing him/her to assume responsibility.

or

In the event that the intervening physician assumes responsibility, all orders to the prehospital provider should be repeated over the radio for purposes of recording. The intervening physician should document his/her intervention and sign the PCR. The decision of the intervening physician to accompany the patient to the health care facility should be made in consultation with the on-line physician.

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Patients entering the Emergency Medical Services (EMS) system are entitled to safe, appropriate and timely care. It is recognized that there are categories of patients who will benefit from the bypass of a closer health care facility in order to more expeditiously receive a higher level of care at a more distant facility.

Numerous scoring systems (i.e. Trauma Score, Revised Trauma Score, Prehospital Index, etc.) have been developed based on objective physiological and anatomical parameters in an attempt to determine which patients qualify under this bypass category. Unfortunately, none of these scoring systems have been found to be sufficiently accurate to be relied upon for this purpose.

Guidelines on this subject must recognize that due to the complexity of the prehospital environment, the prehospital provider must make final decisions, regarding the most appropriate destination. The Ambulance Act of the Province of Saskatchewan, states in the absence of a medical order from a physician, the prehospital provider will transport the patient “to the nearest location where, in the opinion of the attendant, the medical attention apparently required for the care of the patient is available”, supports this. IT MUST BE EMPHASIZED THAT THIS MAY NOT BE THE HEALTH CARE FACILITY THAT THE PATIENT HAS REQUESTED.

Therefore, the following guidelines have been developed to optimize the care provided to patients within the EMS system:

1. All health care facilities within an EMS system must carry out an inventory of their facility, including bed availability, human resources, including physicians, nurses, and other health care providers, x-ray and laboratory capabilities and other specialized equipment.

2. The health care facilities and EMS agency must have an agreement between themselves regarding destination and bypass protocols with provisions for ongoing communication to ensure that this agreement is providing optimal patient care.

The local Destination and Bypass Protocol, if available, should be inserted as an appendix to this manual.

II. NON EMERGENCY PATIENTS (previously arranged)

Prehospital providers are frequently asked to undertake transportation of elective patients to a physician's office or another health care facility.

If, after assessment, the prehospital provider feels that the patient's condition is more serious than expected and transport to a physician's office or other health care facility is inappropriate, the prehospital provider will:

1. Contact a physician, preferably the attending physician, to arrange re-routing to the closest appropriate health care facility. This should be done in a manner that does not result in a delay in the transportation of an acutely ill patient (i.e. while enroute to the closest appropriate health care facility).

2. If a physician is not available, continue transport to the closest appropriate health care facility; or

3. If the physician refuses to authorize re-routing to the closest appropriate health care facility, proceed to the physician's office or other prearranged health care facility and document carefully.
1. BLS staff involved in an inter-facility transfer must ensure that the most appropriately trained staff for the patient's clinical condition is available to accompany the patient during transport. (Follow Scope of Practice Guidelines.)

2. ALS intercept may be needed in patients who:
   a) Unexpectedly become unstable during an inter-facility transfer; or are being transported directly from the field to a health facility in an area served by an ALS service.

BLS staff must be aware of the communities that have an ALS service available.

When in a service area where an EMT-A or Paramedic service is available, if the patient's condition deteriorates, arrange an ALS intercept.

IF UNSURE THAT AN ALS INTERCEPT WOULD BE OF BENEFIT TO THE PATIENT, THE BLS PROVIDER SHOULD DISCUSS THE CASE WITH THE ALS SERVICE.

Patients who could benefit from ALS intervention include (but are not restricted to) those who are:
   a) undergoing CPR (artificial ventilation with or without chest massage),
   b) in respiratory distress,
   c) hypotensive,
   d) having uncontrolled chest pain of suspected cardiac origin,
   e) experiencing a grand mal seizure lasting longer than 15 minutes or where repeated grand mal seizures have occurred without a return of consciousness between seizures,
   f) experiencing a decreased level of consciousness where hypoglycemia or a narcotic overdose has not been ruled out,
   g) experiencing an arrhythmia unless known to be benign; or
   h) imminent childbirth.

5. After the intercept the ALS provider has the following options:
   a) Transfer the patient to the ALS unit for transport. The referring BLS provider must accompany the patient in the ALS unit to assist in patient care.
   b) Accompany the patient in the BLS unit to the health care facility.
   c) Return to his/her ALS unit and allow the BLS unit to complete the transport to the health care facility if it is determined that ALS interventions are not required.

EXTREME CAUTION WILL BE UTILIZED BY ALL CREWS. ONLY STOP IN SAFE AREAS AND PAY STRICT ATTENTION TO TRAFFIC AND ROAD CONDITIONS.

6. All cases of ALS intercept will be reviewed by the involved ALS and BLS services to ensure the intercept was appropriate.

7. Any case where ALS intercept was not carried out despite the presence of an indication will be reviewed by the involved ALS and BLS services and forwarded to Saskatchewan Health.
Communication Failure

In the event that a practitioner is out of communication range, or if contact with a medical control physician is not possible and all other alternate methods of communication have been exhausted, the practitioner may go ahead with those procedures which are:

- necessary for emergency care of the patient,
- significant for the survival or well being of the patient and
- deemed to be accepted standard of prehospital treatment in the Province of Saskatchewan.

In the event of a communication failure (inability to discuss the case with medical control) the practitioner will complete a supplementary form as soon as possible. The on-line physician will then countersign the form only if he/she is satisfied that the following criteria are met:

- The communication failure was genuine.
- The subsequent care provided was appropriate.

Copies of this form will be distributed as follows:

**Canary copy:** Retained on health records.

**Pink copy:** Forwarded to Emergency Health Services, Sask. Health.

**White copy:** Kept with the operator's records.

A photocopy of the white copy marked “Communication Failure” must be forwarded immediately to:

Ministry of Health
Acute & Emergency Services
Saskatchewan Health
3475 Albert St.
Regina, SK S4S 6X6

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Coroners in the Province of Saskatchewan have two functions:
1. To investigate the circumstances of a death when it is not certain if the death was a result of natural causes; and
2. To determine whether any recommendations can be made to prevent similar deaths in the future.

To assist the coroner in these duties the prehospital provider's duties are as follows:

1. For patients pronounced dead at the scene, with or without attempted resuscitation:
   a) Do not disturb the scene.
   b) Call the local police, if not present.
   c) After the arrival of the local police, the responsibility to call a coroner rests with the police officer(s).

In the rare circumstance, where the prehospital provider is attending a dead body, and another call is received, the prehospital provider will respond immediately to that call if it is deemed to be an emergency by the dispatch. Friends/relatives of the deceased must be informed of the reasons for the departure of the prehospital provider, realizing that this will result in additional stress to those present. They must also be reassured that arrangements will be made as soon as possible for transportation of the deceased.

The police, if not already at the scene, should also be notified of this situation as soon as possible. It will be the decision of the prehospital provider, in conjunction with the coroner, police and dispatch (if available), to determine if another unit should be dispatched to transport the body or if this can be delayed until the original responding crew is available to carry out this task.

In the event that a prehospital provider has been called to the scene of a fatality, the provider, rather than the coroner, will have the primary responsibility of pronouncing an individual deceased based on criteria stated in this protocol.

Even if CPR has been initiated, patients may be pronounced dead in the field in the following circumstances:

1. Injuries incompatible with life; (i.e. decapitation, decomposition, incineration, rigor mortis, post mortum levidity).
2. If the performance of CPR places the rescuer at personal risk of any type.
3. Patients with a physician signed Do Not Resuscitate (DNR) Orders or Advanced Care Directives that include a DNR directive.
4. Victims of blunt or penetrating trauma who have no vital signs on arrival of the EMS and display no pupillary reflexes or who are in asystole.
5. Any traumatic cardiopulmonary arrest patient with a transport time to a health facility of greater than fifteen (15) minutes from the time the arrest is identified.
6. Cardiac arrest patients who have had no resuscitation efforts for at least (15) fifteen minutes prior to your arrival on scene (as measured from time of call received to you arrival) and who are in asystole. (See Note Below)
7. Cardiac arrest patients who have failed to respond to BLS resuscitation efforts for a period of 30 minutes or full ALS resuscitation efforts for a period of 20 minutes who are now in asystole or PEA. (See Note Below)
8. Drowning victims who are known to have been submerged longer than sixty (60) minutes.
9. Hypothermia victims whose chest is frozen and non-compliant.
10. The rescuers are exhausted and cannot continue or procedures cause significant delay in evacuation of the patient with a core temperature of less than 30° C.

Note:

When a decision is made to pronounce death in the field under points 6 and 7 the EMS practitioner may consider contacting medical control for consultation depending on the circumstances of the situation and the patient's past medical history. If the practitioner discontinues resuscitation efforts, they should note the following:

- Time of death
- Location at the time of death (Land coordinates if possible)
- Patient's identity
- Past medical history and circumstances leading up to patient's death
- (The coroner and/or police should be notified)

Resuscitation efforts should not be withheld in trauma victims in cardiopulmonary arrest where the mechanism of injury does not correlate with clinical condition thus suggesting a possible non-traumatic cause of the arrest. These patients should have standard resuscitation initiated.

EXCEPTIONS:

1. Drownings other than mentioned in point 8 above.
2. Hypothermia patients other than mentioned in point 9 above. (see Protocol TP 13)
3. Known drug overdose patients have been documented to completely recover after several hours of CPR. Therefore, these patients should undergo CPR (and ALS, if available), until arrival at a health care facility unless documented to be in asystole on a cardiac monitor, in which case the resuscitation may be terminated if the above criteria are met.

SPECIAL CONSIDERATIONS:

1. If there is any doubt as to whether CPR should be started by a BLS crew, the BLS prehospital provider should provide CPR until a physician can be contacted for further orders.
2. If a patient meets the criteria for "Death in the Field," and foul play is suspected, it is essential that the body and scene not be disturbed until the police/coroner authorize the removal of the body.
3. CPR should be continued to the hospital in cases where it is known the patient wished to participate in the organ donation program.
Non-transport of patients because of refusal of care is a common occurrence. While patients have the right to refuse medical evaluation and/or treatment, it is incumbent on the care provider to first ensure the following:

1. The patient must be orientated to person, time and place.
2. There must be no signs of significant impairment due to alcohol, drugs, mental or organic illness, (i.e., ataxia or slurred speech).
3. The vital signs must be stable.
4. The patient must have a reasonable understanding of the provisional diagnosis and the risks of refusing treatment.
5. The patient understands the instructions given him/her, or any responsible family member or friend who is present understands a reasonable plan of action should his/her condition deteriorate and how to activate the EMS system if wishing to seek medical evaluation and transportation. The patient must also be encouraged to seek medical follow-up.

In addition to the above information being carefully documented on the PCR form the following should also be documented:

- Patient name when possible to obtain.
- Date, time and location of the response.
- Vital signs if the patient allows it during their assessment.
- Mental status including orientation to person, place and time.
- The names of any witnesses to the refusal.
- The reason for refusal.

It has been accurately stated that the pre-hospital provider must use creativity and compromise to persuade patients to co-operate with further evaluation, management, and transportation. Restraints may be necessary at any time if the patient becomes uncontrollable and is considered a threat to themselves or to others. These guidelines must be followed when utilizing restraints:

1. Reasonable precautions must be taken to safeguard the welfare of the patient and the providers.
2. Apply only reasonable therapeutic force.
3. Explain restraining actions to the patient's family and friends.
4. Care must be taken to restrain the patient in a manner that allows for rapid and adequate airway maintenance.
5. Document the patient's medical and mental status on the PCR form and document serial examinations.
While there will be reluctance to use force or restraints on a patient, the risk of legal action against the pre-hospital provider for unlawful confinement or battery is considerably less than that for malpractice. It is recognized, however, that there will be circumstances where the pre-hospital provider will not be able to apply restraints on an uncontrollable patient because of concerns over injury to themselves. Again, there must be careful documentation at each step of this process.

Some patients must be transported even if they meet all the criteria for discharge in the field.

These patients include the following:

1. Patients who are a danger to themselves or others.
2. Victims of child abuse if there is the potential for further abuse.

Patients under the age of eighteen years unless considered an emancipated minor (living away from home and self sufficient from their parents) should be encouraged to receive treatment. It should be noted, that patients under the age of 18 years, who can comprehend their condition and the risk of refusing treatment can refuse care.

Another group of patients who do not undergo transportation are those where the pre-hospital provider and patient agree that transportation is not required. It must be stressed that when any doubt exists regarding transportation of a patient, the pre-hospital care provider should err on the side of safety and undertake transportation if possible. Patients who are not transported should always be advised to seek medical attention through their family physician or the nearest hospital, as indicated by their circumstances.
GP9  Conflict Between Health Care Providers

On occasion, disagreement may occur between prehospital care providers, or another health care professional (i.e. RN, RT, etc.). In these circumstances the following will take place:

1. Contact will be made with a physician where possible and further orders will be obtained. This is essential to resolving disagreements regarding patient care.

2. If a physician cannot be contacted:
   
   a) The well being of the patient must be the first priority.
   b) Prehospital care providers will not carry out any intervention that is outside their scope of practice.
   c) The health care professional with the highest level of training for that medical condition (i.e.: if it is a cardiac patient an ACLS provider) will be responsible for the care of the patient.
   d) The prehospital care provider will document in detail the circumstances of the disagreement and all steps that were taken to resolve it.
   e) A copy of the PCR and any other supporting documents will be sent to the Medical Director overseeing EMS for the involved Health Region.
   f) A prehospital care provider can refuse to carry out any order from another health care professional, including a physician, if the prehospital care provider believes that carrying out the order is not in the best interest of the patient.
When in the judgement of the EMT, EMT-A and/or EMT-P in the field, the medical orders issued by a medical control physician are contraindicated and/or are not in the best interest of patient care, the EMT, EMT-A and/or EMT-P is to take the following action:

- Inform medical control of the conflict and request a change of orders.

- If the medical control is unwilling to change the orders, the EMT-A and/or EMT-P should revert to treatment under the "A" protocols section and make an immediate transportation decision.

- The situation must be reported in writing, as soon as possible to the Regional Medical Advisor, as well as Ministry of Health. All copies of the incident reports and patient care report forms must be forwarded to:

  Ministry of Health
  Acute and Emergency Services Branch
  Saskatchewan Health
  3475 Albert Street
  Regina, Saskatchewan
  S4S 6X6
A Palliative Care patient is defined as those individuals who are suffering from a terminal illness in which there is a high probability of death within a matter of days or months. This would include patients with end-stage cancer, neurological diseases, cardiac or pulmonary diseases, AIDS or other fatal systemic diseases. These patients are under the supervision of a physician and are seen on a regular basis by the physician, a Home Care or Palliative Care nurse.

Emergency Medical Services personnel will encounter these patient's in the normal course of their duties.

When a patient as defined above dies in a private residence or a nursing home and the death is expected, the following procedure may be followed:

- The patient’s physician or attending nurse may pronounce death. In the event that the patient’s physician or attending nurse are not present the physician shall be contacted and informed of the death.

- The patient’s physician or attending nurse may authorize removal of the body to the funeral home of the family's choice. It is not necessary for the family, physician, nurse or EMS personnel to contact the coroner or the police. (See Note)

- The patient’s physician must be prepared to sign the death certificate.

**NOTE:**

In the event that there is any evidence that the death was not due to terminal illness there remains the responsibility to contact the coroner and the police. If the attending physician or nurse is present they are to make the contact with the coroner and the police and the body is not to be removed without permission of the coroner. In the event that neither the physician nor nurse is present, EMS personnel will treat this as any other unexpected death and the coroner and police will be contacted.
External Defibrillators (AED) that accurately analyze cardiac rhythms and when appropriate, advise or deliver electrical counter shock therapy have been in use for sometime by emergency responders in Saskatchewan. The AED when used by these responders, has on occasion, proved to be an essential link in the “chain of survival”. The extension of the AED for use by the public through “public access defibrillation” programs or use non-medical personnel with minimal training (e.g. security guards, hotel staff, first aid trained staff) appears to be a logical next step in the chain of survival. Public access defibrillation however poses unique challenges in ensuring that both the training and the process under which the programs are set up and delivered meets a standard that can be considered to provide safety for the public.

Electrical defibrillation by persons not charging a fee for the service, is not defined as a “medical act”, in the Saskatchewan, however, it is a recognized treatment modality within the health care system. Therefore Saskatchewan Health is recommending a process; persons seeking to place these devices in public venues may choose to follow prior to purchase and placement.

Recommendation:

(a) Prior to initiation of training, the organization contracting for the training may choose to advise the local Health Authority by letter, of their intent to be a site that provides public access AED.

(b) As there are a number of agencies that provide AED training, sites need to ensure the training they receive in the use of these devices, is compliant with the Canadian Heart and Stroke Foundation guidelines at both the instructor and provider levels.

(c) When purchasing an AED, you must ensure that it is Canadian Standards Association (CSA) approved for use in Canada.

(d) As a part of protecting you against liability, a quality assurance process should be established that allows for:
   • A process of ongoing review of the use of the device to ensure those responsible to respond with the device retain the skills required for use of the AED.
   • A recognized process of recertification should be established.

(e) When EMS arrives on scene and at the patient’s side, they assume all responsibility for patient care and as such all other rescuers come under the direction of the EMS crew.

(f) As there are risks associated to the use of the AED, the agency implementing “public access AED” should ensure that they have proper liability insurance in place to cover their staff and save them harmless from any legal action.

(g) There should be a process for Critical Incident Stress Debriefing (CISD) available to anyone responding and using the AED.
Patients with the following life threatening conditions should be transported rapidly with the on scene time as short as possible. Remember, a secondary survey should not be done on these patients at the scene as this will result in a loss of valuable time as well as distract the attention of the prehospital provider from the management of the life threatening problem(s). The secondary survey may be done enroute as long as it does not interfere with maintenance of the airway, breathing, and circulation.

1. Airway obstruction that cannot be quickly relieved by methods such as abdominal thrusts, suction, forceps or intubation.

2. Cardio respiratory arrest (except for Paramedics).

3. Shock or any condition that is likely to result in shock (i.e. bilateral fractured femurs, fractured pelvis)

4. Head injury with unconsciousness, decreasing level of consciousness, or where there is a penetrating wound to the head.

5. Respiratory distress that is not immediately relieved by oxygen.

6. Seizure activity lasting longer than fifteen minutes or where the patient does not regain consciousness between repeated seizures.

NOTE:

1. When in a service area where an EMT-A or Paramedic service is available, if the patient's condition deteriorates, arrange an ALS intercept.
Patients, who are ventilated via a tracheotomy tube are becoming more frequently encountered by ALS providers in a non-hospital setting (home, extended care facilities). Therefore, the paramedic and/or EMT-A may be called upon to provide care to a ventilated patient when a tracheotomy tube has become obstructed or dislodged.

As there is a geographic variation in the model of tracheotomy tube used and a method of reinsertion, a procedure will be developed by each Regional Medical Advisor which reflects the local standard of care for this equipment.

The procedure for tracheotomy tube replacement for your service is to be placed on the following page. Before this protocol is instituted in the field, the EMT-P and/or the EMT-A will be required to attend a training session where the medical advisor/designate will certify that the ALS provider is competent in the procedure.

This will be repeated as part of the recertification every two years. Documentation of successful completion of the initial and ongoing training must be kept by each ALS service.

The EMT-P/EMT-A may:

Having completed the training, provide emergency care for tracheotomy tubes.
The EMT, EMT-A, EMT-P may use oropharyngeal and nasopharyngeal airways for airway maintenance in unconscious patients.

The EMT who has completed the PCP bridge or the PCP trained EMT may insert a King LTA airway device into a patient who is apneic provided the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics.

The EMT-A may perform the following for airway control:

A Combitube\LMA\King LTA may be inserted prior to medical control when the patient is in a complete respiratory arrest.

Combitube\LMA\King LTA will not be inserted in any patient:

1) patients with known esophageal disease

2) patients who have ingested caustic substances.

Please refer to manufacture’s guidelines for inserting the proper size of the device.

Paramedics must receive training in the application and use of the devices prior to implementation of their use, and training materials used must be submitted to the Saskatchewan College of Paramedics and the Ministry of Health, along with documentation showing when the training was delivered.

The EMT-P may perform the following for airway control:

Intubation may be carried out prior to medical control when the patient is in a complete respiratory arrest.

1) In children up to the age of eight years, the use of a straight laryngoscope blade is preferred for intubation and an appropriately sized "noncuffed" endotracheal tube must be used.

A Browslow tape is useful for determining the size of endotracheal tube to be used in a child.

2) In all other patients who are not in a complete respiratory arrest, but there is difficulty in controlling and maintaining the airway, medical control must first be sought and approved prior to intubation.

Endotracheal metered dose inhaler or nebulizer devices may be used by EMT-Ps for the administration of salbutamol, and ipratropium bromide, provided:

- they are the same as the devices currently used within their Health Region for this purpose; and,
- they are approved by the district Medical Advisor for EMS.

Special Considerations:

In the patient in ventricular fibrillation or pulseless ventricular tachycardia, insertion of the Combitube or endotracheal tube will be according to current ACLS guidelines. Defibrillation is far more important to successful patient outcome in these patients than ventilation.

Where intubation is unsuccessful on two attempts, the EMT-P may insert a Combitube\LMA\King LTA.
Each patient may present unique challenges to airway management, therefore before any intervention is attempted, the paramedic should contemplate a plan of action that addresses the needs of the patient as well as anticipate complications and how to manage those complications, should the need arise.

Airway management is a continuum of interventions, not an “all or none” treatment. Some patients may only need airway positioning to achieve adequate ventilation and oxygenation. Others will require more invasive procedures. The paramedic should choose the least invasive method that can be employed to achieve adequate ventilation and oxygenation and only be performed when the benefits of performing the procedure outweigh the potential risk to the patient.

Pediatric airway management in the prehospital care setting is controversial and there is evidence that prehospital intubation of the pediatric patient does not contribute to improved patient outcomes. As such, pediatric intubation should be deferred whenever possible, unless the patient’s airway has an immediate risk of being compromised or that ventilation / oxygenation cannot be maintained by using less invasive measures.

**Mastery of basic airway skills is paramount to the successful management of a patient with respiratory compromise.**

Provide ventilation with a bag-valve-mask: Proper use of the BVM includes appropriate mask selection and positioning to ensure a good seal. If possible, BVM is best accomplished with two people: one person using both hands to seal the mask and position the airway, while the other person provides ventilation. If the patient has some respiratory effort, synchronize bagging with the patient’s own inhalation effort.

The paramedic should consider if the use of Continuous Positive Airway Pressure (CPAP) would be a benefit to the patient. CPAP has been shown to be effective in preventing intubation and decreasing mortality in properly selected patients with acute respiratory failure.

Only after basic procedures are deemed either inappropriate or have proved to be inadequate should more advanced methods be used. **Medicated Facilitated Intubation (MFI)** is a process of pharmacological interventions, which are provided prior to endotracheal intubation with the goal of maximizing the likelihood of successful and minimizing complications.

**Requires Medical Control for the EMT-P to perform MFI** on a patient who has an immediate need to correct a severely compromised airway or when respiratory arrest is imminent.

**NOTE:** Each application and/or attempt of the MFI portion of this protocol is subject to an internal agency/service/practitioner audit report subsequently supplied to the Saskatchewan College of Paramedics and the Saskatchewan Ministry of Health respecting HIPPA guidelines within 30 days of application and/or attempt.
**Definition:**

A pulse oximeter, a portable device for the rapid non-invasive measurement of arterial O₂ saturation, assists in the diagnosis of hypoxia. As the clinical significance of pulse oximetry in the prehospital field is currently unknown, its utilization by prehospital care services is **optional**.

**CLINICAL APPLICATIONS**

Indications for monitoring:

- Patients in respiratory distress.
- All critically ill patients (including intubated patients).
- Patients requiring O₂ concentrations of 40% or greater.
- Stable patients at risk from sudden deterioration (i.e. overdose, etc.).
- Monitoring during procedures such as suctioning and intubation.
- Pulse oximetry is an accurate method of detecting systolic blood pressure if a waveform SpO₂ monitor is used, especially in a noisy environment such as an ambulance. Inflate the blood pressure cuff until the radial pulse disappears, then slowly deflate the cuff at a rate of 2 - 3 mmHg per second. The point at which the waveform appears is the systolic blood pressure.

**TO OBTAIN READINGS**

- Remove fingernail polish and artificial nails.
- Apply probe to finger. Fifteen to 30 seconds are required for reading from this site. Probes at other sites (nose, forehead, ears) have a faster response time but are less accurate.

To confirm accuracy:

a) Pulse on the cardiac monitor should be within five beats per minute of the rate on the pulse oximeter.

b) If a waveform model is used, a regular waveform pattern should be present.

If waveform not regular:

a) Check the probe site, tape the device to the finger or immobilize the arm.

b) Reduce interference from fans or lights by turning off the instrument or covering the probe. If unsuccessful, use battery pack or plug in at a different site. Interference has also been reported from bright sunlight so covering the probe may improve accuracy.
INTERPRETATION OF SpO\textsubscript{2} RESULTS

- An SpO\textsubscript{2} greater than 91% usually indicates adequate oxygenation. However, as these devices may be inaccurate by as much as five percent, the SpO\textsubscript{2} level should be kept above 95% except in patients with COPD where O\textsubscript{2} therapy should be guided by the patient's clinical status, not the SpO\textsubscript{2} results.
- O\textsubscript{2} flow rates may be decreased to improve patient comfort and conserve oxygen if the SpO\textsubscript{2} is above 95%.
- **IF AFTER DECREASING THE OXYGEN FLOW RATE THE PATIENT COMPLAINS OF INCREASED SHORTNESS OF BREATH OR SHOWS EVIDENCE OF INCREASED RESPIRATORY DISTRESS, THE OXYGEN FLOW RATE MUST BE INCREASED TO ITS PREVIOUS LEVEL EVEN IF THE SPO\textsubscript{2} IS ABOVE 95% AT THE LOWER FLOW RATE.**
- SpO\textsubscript{2} results are inaccurate in carbon monoxide patients. Therefore, patients suspected of carbon monoxide poisoning must receive 100% O\textsubscript{2} regardless of the SpO\textsubscript{2} reading.
- If SpO\textsubscript{2} readings continue to drop despite maximum O\textsubscript{2} concentrations (i.e. 100%) suctioning of secretions, etc., be prepared to ventilate the patient.
- SpO\textsubscript{2} readings may not be obtained in the following circumstances:
  - a) Severe peripheral vascular disease.
  - b) Use of vasoconstrictors (Dopamine).
  - c) Severe anemia (i.e.: Hgb below 5 mg).
  - d) **Hypothermia:** A quality signal may be unobtainable in 10% of patients with a temperature < 35° C, with a signal failure occurring at temperatures < 28.5 ° C.
  - e) **Hypotension:** Accurate readings have been obtained to values as low as 25 mmHg for mean arterial pressure although this is highly variable.
  - f) Placement distal to a tourniquet, blood pressure cuff.

Special Considerations

The model of pulse oximeter chosen should be made after consultation with the Health District to ensure consistency and quality control.
Oxygen may be administered using the following devices:

1. **Nasal Prongs**
   - The method of choice for providing low flow rates of O\(_2\) (i.e. two to three litres).
   - Provides up to 44% O\(_2\).
   - Flow rates greater than six litres per minute do not improve oxygenation (see Oxygen Delivery Chart).

2. **Facial Masks**
   - Provides up to 60% O\(_2\).
   - Do not use flow rates less than six litres per minute as this will result in the rebreathing of exhaled carbon dioxide (see Oxygen Delivery Chart).
   - Flow rates greater than eight to ten litres per minute do not improve oxygenation and may cause drying and irritation of the mucous membranes (lining) of the nose.

3. **Non-Re-breathing Masks**
   - Do not use flow rates less than six litres per minute as this will result in the re-breathing of exhaled carbon dioxide (see Oxygen Delivery Chart).
   - This is the device of choice for providing high concentrations of oxygen (i.e. 100% O\(_2\)).
   - The reservoir bag should not collapse completely when the patient inhales. If this does occur increase the oxygen flow rate by two litres per minute until the bag remains inflated (usually requires 10 to 12 litres per minute).
   - All other patients in respiratory distress, shock or where carbon monoxide poisoning is suspected (headache, nausea, vomiting, decreased level of consciousness after exposure to smoke or fumes from a vehicle in an enclosed space such as a garage) should receive 100% oxygen.

4. **Venturi Masks**
   - Provides O\(_2\) at a fixed concentration of oxygen (i.e. 24%, 28% etc.).
   - These are sometimes used during inter-facility transfer.

Administer oxygen to a child in any manner that is acceptable to the patient. As children may not tolerate nasal prongs or a facemask, hold the prongs or mask as close to the face as the child will allow. Allowing a patient or other caregiver to do this may make it more acceptable to the child. **THERE ARE NO CONTRAINDICATIONS TO PROVIDING HIGH FLOW OXYGEN TO CHILDREN.**

Patients with known COPD should initially only receive two to three litres per minute by nasal prongs. Patients with COPD who do receive O\(_2\) flow rates higher than three litres per minute are prone to develop a respiratory arrest, usually preceded by a decreasing level of consciousness and a decreasing respiratory rate.
If this occurs these patients may require bag valve mask ventilation (and intubation if a Paramedic is present) until a hospital is reached. If the patient remains in respiratory distress while receiving two to three litres of $O_2$ per minute, increase the flow rate until the patient experiences an improvement in symptoms (usually dyspnea). This may require the use of a non re-breathing mask.

**OXYGEN DELIVERY CHART**

<table>
<thead>
<tr>
<th>Flow Rate (L/minute)</th>
<th>Nasal Cannula</th>
<th>Face Mask</th>
<th>Non Re-breathing Mask</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>24% contraindicated</td>
<td>contraindicated</td>
<td>contraindicated</td>
</tr>
<tr>
<td>2</td>
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</tr>
<tr>
<td>3</td>
<td>32% contraindicated</td>
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</tr>
<tr>
<td>4</td>
<td>36% contraindicated</td>
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</tr>
<tr>
<td>5</td>
<td>40% contraindicated</td>
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</tr>
<tr>
<td>6</td>
<td>44% 40%</td>
<td>60%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>44% 50%</td>
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<td></td>
</tr>
<tr>
<td>8</td>
<td>44% 60%</td>
<td>80%</td>
<td></td>
</tr>
<tr>
<td>9</td>
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<td>10</td>
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<td>95%+</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td></td>
<td>95%+</td>
<td></td>
</tr>
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INDEX
### OXYGEN ENDURANCE CHART

<table>
<thead>
<tr>
<th>Cylinder Size</th>
<th>D (litres)</th>
<th>E (litres)</th>
<th>G (litres)</th>
<th>Q (litres)</th>
<th>M (litres)</th>
<th>H/K (litres)</th>
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<tbody>
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<td>Capacity</td>
<td>300</td>
<td>600</td>
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<td>3,450</td>
<td>6,500</td>
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<td>Flow Rate</td>
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<td></td>
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</tr>
<tr>
<td>(litres per minute)</td>
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<td>2</td>
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<td>8:20</td>
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<td>2:30</td>
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<td>27:00</td>
</tr>
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<td>7:10</td>
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<td>3:20</td>
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<tr>
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<td>0:12</td>
<td>0:24</td>
<td>0:40</td>
<td>1:20</td>
<td>2:20</td>
<td>4:20</td>
</tr>
</tbody>
</table>

**NOTE:** Endurance times in hours and minutes are approximations based on full bottle pressure at start of flow rate.
### Acetaminophen
- **< 6 years oral dose**: 15mg/kg to a maximum dose of 320 mg
- **< 6 years rectal dose:**
  - **a)** less than 10 kg - 120 mg acetaminophen suppository
  - **b)** 10 – 20 kg - 160 mg acetaminophen suppository
  - **c)** > 20 kg - 325 mg acetaminophen suppository

### Adenosine
- **1st dose**: 0.1 mg/kg IV as rapidly as possible followed by a 5 ml bolus of normal saline, maximum dose 6 mg.
- **2nd dose**: 0.2 mg/kg IV as rapidly as possible followed by a 5 ml bolus of normal saline, maximum dose is 12mg.

### Amiodarone
- If amioderone is used as the antiarrhythmic administer one dose of 5 mg/kg diluted to a max of 300 mg in 20 – 30 mls of D5W IV or IO bolus. This may be repeated once at 2.5 mg/kg to a max of 150 mg.

### Atropine
- 0.02 mg/kg IV push with a minimum dose of 0.1 mg and a maximum dose of 0.5 mg in a child and 1.0 mg in an adolescent. This dose may be repeated in three to five minutes to a maximum dose of 1.0 mg in a child and 2.0 mg in an adolescent.

### Atrovent
- **Age five to twelve years**: 0.5 ml - 1.0 ml (250 ug/ml)

### Dimenhydrinate
- **Under 12 years**: 1.0 mg/kg over 2 minutes, not to exceed 50 mg
- **IM Gravol**:
  - Over 12 yrs: 50 mg q4hrs
  - 8 – 12 years: 25 – 50 mg q8 hrs
  - 6 – 8 years: 12.5 – 25 mg q8hrs

### Diphenhydramine
- Not for infants <3 months old: 1.0 mg/kg IM Maximum of 50mg

### 25% Dextrose
- 25% dextrose (0.25 g/ml); give 2-4ml/kg

### Lorazepam
- 0.5 - 0.1 mg/kg up to 4mg IV, repeat 10-15 min using same dose if seizure activity continues

### Midazolam
- 0.2 mg/kg IM to a max of 7 mg or;
- 0.1 – 0.2 mg/kg intra-nasal to a max of 7 mg or;
- 0.1 mg/kg IV to a max of 7 repeated x 1 in 10 minutes
- For cardioversion 0.1mg/kg to a max of 4mg

### Epinephrine
- **For cardiac arrest** - 0.01 mg/kg (0.1 ml/kg) of 1:10,000 solution IV or IO for first dose in cardiac arrest and 0.01 mg/kg (0.1 ml/kg) of 1:10,000 solutions for all subsequent IV or IO doses.
- **For anaphylaxis** - 0.01 ml/kg of 1:1,000 solution subcutaneous.

### Glucagon
- **Under age 12**: 0.1 mg/kg (0.1 ml/kg) up to 1.0 mg (1.0 ml).
- **12 years and older**: 1.0 mg (1.0 ml).

### Lidocaine
- 1.0 mg/kg IV push to a volume of normal saline to create a total volume of 10 ml.
- 120 mg of Lidocaine in 100 ml D5W = 1200 mcg/ml. Infuse at 1 - 2.5 ml/kg per hour (delivery 20 - 50 mcg/kg per minute).

### Morphine
- 0.1 mg/kg SQ/IM or IV, maximum dose is 2.5 mg Q 15 minutes. A Broselow Tape must be used if the weight is uncertain.

### Naloxone
- 0.1 mg/kg, maximum dose 2.0 mg., titrate to respiratory increase

### NaHCO₃
- 1.0 MEq/kg IV push.

### Ventolin
- 1.25 mg initial dose, and 2.5mg second dose
<table>
<thead>
<tr>
<th>Category</th>
<th>Age</th>
<th>Weight</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>kg</td>
<td>lb</td>
</tr>
<tr>
<td>Infants</td>
<td>0.5 - 1.0</td>
<td>9</td>
<td>20</td>
</tr>
<tr>
<td>Children</td>
<td>1 - 3</td>
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</tr>
<tr>
<td></td>
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<td>20</td>
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</tr>
<tr>
<td></td>
<td>7 - 10</td>
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<td>62</td>
</tr>
<tr>
<td>Males</td>
<td>11 - 14</td>
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</tr>
<tr>
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<tr>
<td></td>
<td>19 - 22</td>
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</tr>
<tr>
<td></td>
<td>76+</td>
<td>55</td>
<td>120</td>
</tr>
</tbody>
</table>
### Pediatric Endotracheal Tube and Suction Catheter Sizes

<table>
<thead>
<tr>
<th>Age</th>
<th>Endotracheal Tube</th>
<th>Suction Catheter</th>
</tr>
</thead>
<tbody>
<tr>
<td>newborn</td>
<td>3.0 mm</td>
<td>8 F</td>
</tr>
<tr>
<td>six months</td>
<td>3.5 mm</td>
<td>8 F</td>
</tr>
<tr>
<td>eighteen months</td>
<td>4.0 mm</td>
<td>8 F</td>
</tr>
<tr>
<td>three years</td>
<td>4.5 mm</td>
<td>8 F</td>
</tr>
<tr>
<td>five years</td>
<td>5.0 mm</td>
<td>10 F</td>
</tr>
<tr>
<td>six years</td>
<td>5.5 mm</td>
<td>10 F</td>
</tr>
<tr>
<td>eight years</td>
<td>6.0 mm</td>
<td>10 F</td>
</tr>
<tr>
<td>twelve years</td>
<td>6.5 mm</td>
<td>10 F</td>
</tr>
<tr>
<td>sixteen years</td>
<td>7.0 mm</td>
<td>10 F</td>
</tr>
</tbody>
</table>

- One size larger or smaller should be allowed for individual variations.
- Reduce size by 0.5 - 1.0 mm if croup or epiglottitis precipitated the respiratory arrest.

**INDEX**
The EMT-A and/or EMT-P will initiate an IV in the following cases:

a) For volume expansion in patients with the clinical diagnosis of shock (hypovolemic, neurogenic or anaphylactic). Patients with suspected cardiogenic shock will have an intravenous initiated TKO, with medical control required to establish the rate of flow.

b) To obtain an intravenous route for administration of essential emergency drugs in the following circumstances:
   - cardiac arrest
   - diabetic shock
   - anaphylactic shock
   - unconsciousness of unknown etiology or significant trauma.

c) A peripheral intravenous saline lock may be used in those patients where IV access has been obtained for the purpose of administering IV medications. A saline lock is not to be used for those patients who require or may require bolus IV fluid therapy for hypotension.
   - The procedure to be used for saline lock placement will be that which is in current use within the regional health authority where the service is located.

Normal saline is the IV solution of choice, except in:

a) patients with documented hypoglycemia where D5W will be used; or
b) in children, who are not hypotensive, where D5W may be used.

Because of the increased risk of phlebitis in IVs started in the prehospital scene, strict attention must be placed on an aseptic technique and secure taping of the IV.

The EMT-P will ensure that:

- Each dose of IV medication administered during a cardiac arrest is followed by a bolus of IV fluid (to accelerate its entry to the central circulation) as follows:
  a) Under the age of six years: 5 ml (including IO infusions)
  b) Between six and twelve years: 10 ml
  c) Over the age of 12 years: 20 ml

The IVs should be established enroute unless:

a) there is delay in extrication of the patient;

b) airway management during transportation will not allow for IV initiation;

c) in patients with "controlled hemorrhage" where ongoing blood loss will not be a problem; or

d) transport time of greater than 30 minutes in length.
Intraosseous Infusion:

Intraosseous infusions are now an "A" category intervention, not requiring medical control.

Remember that securing an airway; maintaining adequate ventilation, and controlling hemorrhage have priority over the initiation of an intraosseous infusion.

The EMT-P may attempt an intraosseous infusion may be initiated in the following circumstances:

1. Children under the age of six years in a cardiac arrest where a peripheral vein is not visible (including the external jugular vein), or an IV has been unsuccessful on two attempts or 90 seconds has elapsed and a vein has not been successfully cannulized.

2. Children under the age of six years who are hypotensive where a peripheral vein is not visible (including the external jugular vein), or an IV has been unsuccessful on two attempts or 90 seconds has elapsed and a vein has not been successfully cannulized.

3. In adults where peripheral vein cannulation has been unsuccessful on two attempts or 90 seconds has elapsed and a vein has not been successfully cannulized.

Intraosseous infusions, as with IV cannulations, are to be carried out enroute. Therefore, this procedure may be initiated at the scene only in the following circumstances:

- if the patient is in cardiac arrest;
- if there is a delay in the extrication of the patient;
- airway management during transportation will not allow for intraosseous initiation;
- in those patients with "controlled hemorrhage" where ongoing blood loss will not be a problem (ie: isolated soft tissue injury that can be controlled by pressure); and/or
- if the transport time is greater than 30 minutes in length.

Only those needles, which have been specifically designed for intraosseous infusions may be used for this purpose.

Select appropriate sized needle.

- **Under eighteen months**: use #18 or smaller IO needle.

- **Over eighteen months**: use #18 or larger IO needle.

Remember that there are effective alternate routes of administration for certain drugs such as rectal, buccal or Intra-nasal administration.
A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

The **EMT-P** may carry out the following procedure:

**Intravenous Cannulation of the external jugular vein**

Percutaneous cannulation of the external jugular vein may be carried out if the following criteria are met:

a) This route is only to be used for the administration of drugs or volume replacement in patients with hypovolemic shock where cannulation of a peripheral vein is not possible or has not been successful.

b) Cannulation of the external jugular vein will occur en route to the health care facility unless an exception is present as described previously for peripheral IV initiation.

c) Whenever this procedure is carried out (including unsuccessful attempts) the "other" box under procedural skills must be checked off and a description of the procedure documented on the bottom of the form.

d) The external jugular vein is **not** to be used for the purpose of insertion of a Central Venous Pressure (CVP) line.

**Central Lines**

The **EMT-P** may access central lines (not portacaths) for the purpose of fluid and medication administration as needed.

INDEX
Health Care Directives

Introduction:

It is accepted that a patient has the right to accept or reject any treatment recommended by a health care professional, including CPR. Unfortunately, in circumstances where the patient has become incompetent, he or she is no longer able to make their wishes known regarding treatment decisions. For this reason, Health Care Directives have been developed. A Health Care Directive is a written document, prepared by an individual, indicating the care that they wish to receive or not receive, should they be in a situation where they cannot make their wishes known. In 1997, the Government of Saskatchewan passed legislation governing Health Care Directives entitled The Health Care Directives and Substitute Health Care Decision Makers Act (the “Act”).

The Act provides for two types of health care directives:

1. The first type gives specific direction to treatment providers as to the treatments consented to or refused should the patient not have the capacity to make a health care decision.

2. The second type names another person (called a "proxy”) to make health care decisions on behalf of the patient, when the patient does not have the capacity to make those decisions.

A directive can also be a combination of both these types, including specific treatment decisions for certain situations, as well as a proxy named for other health care decisions.

A Health Care Directive must be in writing, and is valid if the following criteria are met:

1. The patient is 16 years of age or older, and is considered competent

2. The Health Care Directive is signed and dated by the patient. THERE IS NO EXPIRATORY DATE ON HEALTH CARE DIRECTIVES THEREFORE RENEWAL IS NOT REQUIRED.

A Directive may be handwritten or typed, and a specific form is not required. It also does not need to be witnessed.

If a Health Care Directive, which directs treatment for prehospital care, meets the above criteria, the prehospital provider must follow its directions unless:

1. There is an indication from a bystander (ie: family member or friend) that the patient cancelled the Health Care Directive. Directives can be cancelled orally, in writing, or by destroying the document.

   Example: A patient has a valid Health Care Directive refusing CPR, however, a family member states that just prior to collapsing, the patient requested that CPR be administered. In these circumstances, the most recent information indicates that the patient wished to undergo CPR, and therefore, CPR should be immediately started.

2. The Directive does not clearly anticipate, and give direction as to the specific circumstances, which exist. In such a case, the directive is to be used as guidance to the wishes of the patient respecting proposed treatment.
IN A LIFE THREATENING SITUATION DO NOT DELAY TREATMENT IN ORDER TO LOCATE A WRITTEN HEALTH CARE DIRECTIVE. TREATMENT SHOULD BE STARTED IMMEDIATELY AS PER THE EMERGENCY TREATMENT PROTOCOL MANUAL FROM SASKATCHEWAN HEALTH UNLESS A FAMILY MEMBER STATES THAT THE PATIENT DID NOT WISH TO RESUSCITATED. This request will be honoured, however it is essential that the prehospital provider is satisfied as to the identity of the patient and family member. The prehospital provider must document in as great a detail as possible what was said and by whom.

Where a Health Care Directive appoints a proxy, the proxy is responsible to make the treatment decisions on behalf of the incapacitated patient. In life threatening situations, treatment should not be delayed in order to contact a proxy who is not immediately available at the scene. Immediately initiate resuscitation as described in the Emergency Treatment Protocol Manual from Saskatchewan Health.

The Act specifically protects from legal action any health care worker who follows a Health Care Directive, even if it results in death. It also provides protection where the prehospital provider provided care contrary to the Health Care Directive because the existence of the Directive was not known, it was reasonably believed that the Directive had been revoked, or if the Directive was too vague to be followed.

IF THERE ARE ANY DOUBTS REGARDING THE VALIDITY OR INTENTION OF A HEALTH CARE DIRECTIVE, FOLLOW THE USUAL PROTOCOLS AS STATED IN THE EMERGENCY TREATMENT PROTOCOL MANUAL FROM SASKATCHEWAN HEALTH.

If a Health Care Directive is not followed, document your reasons fully including discussions with the family and health care professionals (ie: telephone conversation with a physician).

Every time a patient is encountered, ask the patient or family if a Health Care Directive exists regarding the treatment of the patient or appointing a proxy to make decisions on the patient's behalf. If a Health Care Directive exists, attach it to the patient's PCR and hand it over to the staff at the receiving health care facility.

In summary:
1. Always ask a patient (or relative if the patient cannot communicate) if there is a written Health Care Directive.
2. Document the existence of a written Health Care Directive on the PCR.
3. Respect the Health Care Directive unless its directions are not clear, and/or identity of the patient and family members cannot be substantiated.
4. Make the staff at the receiving health care facility aware of the existence of a Health Care Directive.
5. IF YOU ARE UNABLE TO IMMEDIATELY LOCATE A HEALTH CARE DIRECTIVE OR PROXY IN A LIFE THREATENING SITUATION, INITIATE TREATMENT AND CONTACT A PHYSICIAN FOR ADVICE AS QUICKLY AS POSSIBLE.
6. DOCUMENT, DOCUMENT, DOCUMENT.
A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

For patients who have been assessed by and are receiving services from Home Care, the EMT, EMT-A or EMT-P may perform urinary catheterization and catheter care in the patient’s home without the need for transport provided:

- There is no other care provider immediately available on site who can perform the procedure;
- A physician’s order for catheterization exists;
- The patient is experiencing no complications that require transport for further medical assessment/intervention.

COMPLICATIONS:

The four most common complications of urinary catheterization are as follows:

- **Blockage:**
  If no urine has drained for 3 hours, check for kinks or bends in the tubing. Make sure nothing is lying on the tubing. Catheter irrigation may be necessary. If irrigation is unsuccessful, remove and replace the catheter.

- **Bleeding:**
  Urine is red, pink or tea colour. (Some foods such as beets, vitamins or medications may cause reddish colour in urine). If bleeding is suspected, transport to ER.

- **Bypass:**
  Urine is draining around the outside of the catheter. If due to blockage, irrigation or replacement may be required. If the catheter appears patent, pad the area with clean, dry, absorbent material for patient comfort and transport to ER.

- **Infection:**
  Urine may be very cloudy and/or have a foul odour. The patient may complain of a burning sensation in the urethra or pain in the bladder region, (bladder spasm). This must be documented and relayed to Home Care staff. If these signs and symptoms are associated with fever and/or chills, the patient must be transported to ER.
GP24 Pandemic Protocol

In the event of a pandemic, EMS practitioners will play an important role in the education, prevention, and treatment of patients. Immunization of the public is the primary means to decrease morbidity and mortality in the event of an epidemic and pandemic. Dependent on each health region’s pandemic plan and the availability of resources EMS practitioners may be a part of the interdisciplinary health care team in mitigating a pandemic crisis.

Based on specific needs during a pandemic, regional health authorities will have the responsibility of educating and informing EMS services and staff on the overall response plan and the role that EMS practitioners will play in it. Regional Health Authorities will work with the Saskatchewan College of Paramedics to ensure their immunization training is an approved method and that it meets the regulatory bylaws of the college. Please note that this protocol may be amended periodically dependent on the pandemic and health region plan(s).

Assessment

1.) EMS personnel should stay more than 6 feet away from patients and bystanders with symptoms until appropriate routine respiratory droplet precautions can be instituted and ensure all appropriate personal protective equipment (PPE) is donned while assessing all patients for suspected influenza-like-illnesses.

2.) Assess all patients for symptoms of acute febrile respiratory illness:
   a. Fever plus one or more of the following:
      i. nasal congestion
      ii. rhinorrhea
      iii. sore throat
      iv. cough
      v. fatigue, lethargy, headaches

3.) If no acute febrile respiratory illness, proceed with normal EMS care.
   a. Place a standard surgical mask or oxygen mask on the patient (if tolerated) and use appropriate PPE.

Personal Protective Equipment (PPE)

When treating a patient with a high suspicion of a pandemic illness, the following PPE should be worn:

While performing a potential aerosol producing procedure. (e.g., endotracheal intubation, administering nebulized medications, resuscitation, etc). Fit-tested disposable N95 respirator and eye protection (e.g., goggles; eye shield), disposable non-sterile gloves, and gown. If at all possible and in congruence with the practitioner’s health region’s pandemic response plan the use of metered-dose inhaler (MDI) may be warranted by the EMT-A/EMT-P practitioner to reduce the risk of transmission.
For all other situations, place a standard surgical mask or oxygen mask on the patient, if tolerated. If not tolerated, EMS personnel may wear a standard surgical mask.

Use good respiratory hygiene – use non-sterile gloves for contact with patient, patient secretions, or surfaces that may have been contaminated. Follow hand hygiene including hand washing or cleansing with alcohol based hand disinfectant after contact.

Encourage good patient compartment vehicle airflow/ ventilation to reduce the concentration of aerosol accumulation when possible.

Refer to the Saskatchewan Health website, your health region’s pandemic plan and other resources for further information on PPE, immunizations and provincial occupational health and safety standards (OHS).
Each regional health authority will be responsible for the training, management and administration of the vaccination based on the needs of the region and the resources available. Please refer to your health region’s pandemic response plan.

Here is a guide to be used in combination with your region’s pandemic plan for the delivery of a vaccination to the public:

Based on your Regional Health Authority’s Pandemic Response plan, the EMT (who has been PCP trained)/EMT-A/ and EMT-P may do the following:

Procedure

- Will be largely dependent on your health region’s pandemic response plan.
- The appropriate dose should be verified and prepared
- The injection site (L or R deltoid or L or R anterolateral aspect of thigh) should be identified and cleansed with alcohol pad.
- A 21-25 gauge needle 1-1.5 inches long should be used for adults.
- In those less than 60kg, a 5/8 to ¾ inch needle is preferred
- The needle should be inserted at a 90 degree angle into the appropriate muscle
- An attempt at aspiration should be made
- If blood is obtained on aspiration, the needle should be removed without administration of the vaccine, and the vaccine should be disposed of and a second attempt shall be made with a new needle, syringe, and dose.
- If no aspiration occurs, the appropriate dose of vaccine should be delivered in the muscle in a quick, steady manner
- The needle and syringe should then be removed and disposed of in a sharps container
- Apply bandage to site of injection as needed
Contraindications

- Age less than 6 months
- History of Guillian-Barre
- Serious allergic reaction to a previous dose of Influenza vaccine (intranasal or intramuscular)
- Allergic reaction to egg or egg products
- Different manufacturers have additional allergy contraindications which may include gentamicin, neomycin, polymyxin, thimersol, gelatin, and latex. It is ESSENTIAL that anyone utilizing this protocol understands the packaging insert(s) and contraindications for the specific manufacturers’ product(s) being used
- Any acute illness more severe than the common cold
- Oral (or equivalent) temperature elevation > 101.5°F (38.6°C).

Reactions

- Pain, redness and or swelling at the injection site and mild fever. If the patient does have a severe enough reaction, please refer to Saskatchewan Protocol (MP1) Anaphylaxis.

Schedule

- One dose if vaccinated for the seasonal flu in any previous year
- Children 6 months through 9 years of age: Two doses separated by at least 21-28 days if they have never received a seasonal flu vaccination in the past, or if their first seasonal flu vaccine was last year and they only received one dose

Cleansing Agent

- Alcohol pad or equivalent (chlorascrub skin preparation)

Dosage

- Please refer to the manufacturer’s guidelines and your health region’s pandemic response plan.
CARDIAC PROTOCOLS

CP1  Chest Pain
CP2  Pulmonary Edema
CP3  Cardiac Arrest
CP4  V-fib/Pulseless V-tach
CP5  Asystole/PEA
CP6  Bradycardias
CP7  Tachycardias
CP8  Saskatchewan STEMI Protocol

SCOPE OF PRACTICE

GENERAL PROTOCOLS

TREATMENT PROTOCOLS

CARDIAC

TRAUMA

MEDICAL

INTER-FACILITY TRANSFER PROTOCOLS
Basic Life Support

- Obtain a pertinent medical history from the patient regarding onset, activity at onset, location, quality, duration and radiation of pain and associated nausea/vomiting.
- Have the patient chew and swallow 160 to 325 mg of uncoated ASA.
- Obtain and record vital signs every five minutes.
- Transport to the receiving hospital.
- If the responding crew is trained to do so, obtain a 12 Lead ECG. If the crew responding is not trained in 12 Lead ECG they should begin cardiac monitoring and provide a copy of the ECG strip to the receiving hospital on arrival.
- EMRs and First Responders may assist the patient in taking Nitroglycerine as per the patient’s own prescription, using the patient’s Nitroglycerine. The patient must not be hypotensive and must not have a heart rate below 50 BPM.

B. REQUIRES DIRECT MEDICAL CONTROL

- If the patient is being attended to, by a basic life support crew and the patient does not have a prescription for nitroglycerine, medical control must be obtained prior to administration. If 3 doses of nitroglycerine have not relieved the patient’s chest pain, contact medical control for further orders.

Advanced Life Support (Does not require Medical Control)

If chest discomfort is suggestive of ischemia or cardiac origin:

- Monitor, support ABCs. Be prepared to provide CPR and Defibrillation
- If available, obtain 12-lead ECG; if ST-elevation:
  - Notify receiving hospital with transmission or interpretation
  - Begin fibrinolytic checklist
- Notified hospital mobilize hospital resources to respond to STEMI alert

The EMT-A/EMT-P may proceed as follows:

- Initiate an IV
- Administer Nitrous Oxide prn for pain if required. (It should be remembered you are not providing 100% oxygen and so you may wish to supplement with a nasal cannula.)
The EMT-P may proceed as follows:

- If dysrhythmia is noted by the paramedic treat according to the appropriate protocol.
- If the pain is unresponsive to Nitroglycerine, the EMT-P may administer Nitrous Oxide, or IV Morphine
  - 2-5mg (2-5ml) of solution, slow IV push (no faster than 2mg/minute)
  - dose may be repeated in ten minutes
  - medical control must be contacted for additional repeat doses

NOTE:

- ASA is contraindicated in patients with a history of:
  - hypersensitivity to ASA or other NSAID’s such as ibuprofen
  - active peptic ulcer disease
- ASA is not contraindicated in patients already taking ASA, Warfarin (coumadin).
- Nitroglycerine is contraindicated for male or female patients who are using the drug Viagra, Levitra, Cialis or similar drugs and has taken it within the preceding 24 hours as it may result in profound and sudden hypotension

When in a service area where an EMT-A or Paramedic service is available, if the patient's condition deteriorates, arrange an ALS intercept.
CP2

Pulmonary Edema

Basic Life Support

- Primary survey.
- Place patient in low or high Fowler’s position; loosen tight clothing and reassure.
- Administer high flow oxygen.
- Obtain and record pertinent medical history.
- Record history regarding onset, activity at onset, location, quality, duration and radiation of pain and associated nausea/vomiting.
- Record medication taken and its effects.
- If a cardiac monitor is maintained as part of the equipment on the responding ambulance, the patient should be monitored and an ECG strip (eight seconds in duration) obtained for reference of the receiving physician. This should be done during transport to avoid delays in reaching a health care facility. A 12 Lead ECG should be obtained if the responding crew is trained to do so.
- This is a medical emergency and BLS transport to a medical facility should not be delayed.
- If the patient is being attended to, by a basic life support crew and the patient does not have a prescription for nitroglycerine, medical control must be obtained prior to administration. If chest pain is present, and the systolic blood pressure is greater than 100 mmHg and the heart rate has not dropped below 50 BPM, administer one 0.3 mg sublingual tablet or one spray of Nitroglycerine every five to ten minutes to a total of three doses. Check blood pressure before giving the second and third dose to ensure that the systolic blood pressure is remaining above 100 mmHg. If 3 doses of nitroglycerine have not relieved the patient’s chest pain, contact medical control for further orders.
- **BLS providers** will not administer nitroglycerine for any other purpose without first contacting medical control.

If patient’s condition doesn’t improve with initial treatments, if available and the responding crew is trained to do so the EMT who has completed the PCP bridge or the PCP trained EMT and/or EMT-A/EMT-P may consider the application of CPAP.

Inclusion Criteria

- Patient must be alert and able to follow commands (GCS >13)
- Be able to maintain an open and patent airway on their own
- Patient is over 12 years of age and must be able to fit the CPAP mask

CPAP should be considered in the following types of patients:

- Hypoxemia secondary to congestive heart failure
- Acute cardiogenic shock
- Pulmonary edema
- Asthma/ COPD
- Respiratory distress (A respiratory rate >25bpm, SpO2 <92%, accessory muscle use during respiration.)

Contraindications

- Pneumothorax or chest trauma
- Hemodynamically unstable patients
- Altered mental state, uncooperative or unresponsive patients
- Patient has a tracheotomy
- Patient is actively vomiting
- Patient has an upper GI bleed
NOTE:

- The Practitioner should follow the instructions for application of CPAP according to the manufacturer's instructions for the device they are using. The operator adjusts flow and FiO2 depending on the patient's tolerance to the mask, pulse oximetry and dyspnea.

- The practitioner should watch for gastric distension, which can result in vomiting. CPAP therapy needs to be continuous and should not be removed unless the patient cannot tolerate the mask or experiences respiratory/cardiac arrest or begins to vomit. If the CPAP therapy needs to be discontinued intermittent positive pressure ventilation with a Bag-Valve-Mask device and/or placement of an endotracheal tube should be considered.

- On arrival at the hospital do not remove CPAP until hospital therapy is ready to be placed on patient.

Advanced Life Support

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- Start IV with normal saline TKO.
- If the patient’s systolic blood pressure is greater than 100 mmHg and the heart rate has not dropped below 50 BPM, administer one 0.3 mg sublingual tablet or one spray of Nitroglycerine every five to ten minutes.

The EMT-A may proceed as follows:

B. REQUIRES DIRECT MEDICAL CONTROL

- Administer one dose of salbutamol/ipratropium bromide if bronchospasm is present and the patient is not complaining of chest pain, which may be cardiac in origin.

- Administer repeat doses of salbutamol/ipratropium bromide as indicated if bronchospasm persists.

- If the patient remains normotensive, the EMT-A may discuss further use of nitroglycerine with medical control. Blood pressure must be monitored carefully in this case.

The EMT-P may proceed as follows without medical control:

- Administer one dose of salbutamol/ipratropium bromide if bronchospasm is present and the patient is not complaining of chest pain, which may be cardiac in origin.

- Administer repeat dose of salbutamol/ipratropium bromide if bronchospasm persists.

Administer furosemide to patients with respiratory distress (e.g. anxious, accessory muscle use, tachypneic) who have diffuse crackles.
**Furosemide Dosage**

- If the patient is not already on furosemide, administer 40 mg IV over two minutes.
- If the patient is on furosemide as an oral medication, administer twice the daily oral dose, IV, up to a maximum of 200 mg and at a rate no greater than 40 mg per minute.

(Peak diuretic effect of furosemide is 30 minutes. If no urine output is seen after 30 minutes contact medical control for further orders)

**NOTE:**

- Furosemide should not be given to patients who are hypotensive.
- Furosemide should not be used to treat pulmonary edema caused by end-stage renal failure (e.g. dialysis patients).
- Furosemide is a sulphonamide and therefore should not be given to patients with a history of sulphur allergies. If a patient with a history of a sulfa allergy is currently taking oral furosemide without symptoms of allergy [urticaria, etc., IV furosemide may still be administered.
- Ototoxicity can result if furosemide is given too quickly.
Potential adverse reactions of furosemide include dizziness, headache, leg cramps and bladder spasms, hypotension, allergic reactions, arrhythmias, potassium depletion and metabolic alkalosis.

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The **EMT who has completed the PCP bridge or the PCP trained EMT** may only use CPAP on patients if the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics.
# Cardiac Arrest

**Adult Cardiac Arrest**

**CPR Quality**
- Push hard (≥2 inches [5 cm]) and fast (≥100/min) and allow complete chest recoil
- Minimize interruptions in compressions
- Avoid excessive ventilation
- Rotate compressor every 2 minutes
- If no advanced airway, 30:2 compression:ventilation ratio
- Quantitative waveform capnography
  - If PETCO₂ <10 mm Hg, attempt to improve CPR quality
- Intra-arterial pressure
  - If relaxation phase (diastolic) pressure <20 mm Hg, attempt to improve CPR quality

**Return of Spontaneous Circulation (ROSC)**
- Pulse and blood pressure
- Abrupt sustained increase in PETCO₂ (typically ≥40 mm Hg)
- Spontaneous arterial pressure waves with intra-arterial monitoring

**Shock Energy**
- Biphasic: Manufacturer recommendation (eg. initial dose of 120-200 if unknown, use maximum available. Second and subsequent dose should be equivalent, and higher doses may be considered.
- Monophasic: 360 J

**Drug Therapy**
- Epinephrine IV/Io: 1 mg every 3-5 minutes
- Vasopressin IV/Io: 40 units can replace first or second dose of epinephrine
- Amiodarone IV/Io: First dose: 300 mg bolus. Second dose: 150

**Advanced Airway**
- Supraglottic advanced airway or endotracheal intubation
- Waveform capnography to confirm and monitor ET tube placement
- 8-10 breaths per minute with continuous chest compressions

**Reversible Causes**
- Hypovolemia
- Hypoxia
- Hypo-/hyperkalemia
- Hypothermia
- Tension pneumothorax
- Tamponade, cardiac
- Toxins
- Thrombosis, pulmonary
- Thrombosis, coronary

## EMR/EMT

- CPR for 2 minutes:
  - Compressions 2 inches deep at a rate over 100/minute
  - 30:2 compression:ventilation if no advanced airway
  - Provide Supplemental oxygen
  - Follow AED prompts
  - Continuous compression if advanced airway is in place

  **Children/infants 15:2 compression/ventilation rate with 2 Health Care Providers**

---

## EMT-A

- CPR for 2 minutes:
  - Compressions 2 inches deep at a rate over 100/minute
  - 30:2 compression:ventilation if no advanced airway
  - Provide Supplemental oxygen
  - Analyze rhythm
  - Defibrillate
  - Insert subglottic airway
  - Obtain vascular access
  - Continuous compression if advanced airway is in place

  **Children/infants 15:2 compression/ventilation rate with 2 Health Care Providers**

---

## EMT-P

- CPR for 2 minutes–analyze
- Defibrillation
- Continue CPR following defibrillation
- Obtain vascular access
- Epinephrine 1 mg IV/Io every 3 – 5 minutes (or Vasopressin 40 Units IV/Io x1 dose)
- Consider advanced airway, monitor with waveform capnography, ventilate at 8 – 10 breaths / min.
- Following 2 minutes of CPR-analyze
- Defibrillation
- Continue CPR following defibrillation
- If VF/ VT, Amiodarone 300 mg IV/Io push (repeat in 5 minutes with 150 mg IV/Io)
- Assess for and treat reversible causes

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**The EMT who has completed the PCP bridge or the PCP trained EMT may insert a King LTA device if the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics.**

The EMT-A may insert a Combitube/LMA/King LTA

- If EtCO₂ is below 20, focus on improving the quality of chest compressions
- ROSC is often indicated by sharp rise in EtCO₂ to over 40 mmHg before pulse is palpable
Assessment

EMR
EMT
EMT-A
EMT-P

Manage airway with OPA/NPA and BVM
5 Cycles of CPR
Consider potential cause
Consider additional resources (ALS intercept)

No

Shock Advised?

Yes

EMR
EMT
EMT-A
EMT-P

5 cycles of CPR

Shock Advised?

No

EMR
EMT
EMT-A
EMT-P

Check Pulse
Analyze rhythm

Yes

EMR
EMT
EMT-A
EMT-P

Check Pulse
Analyze rhythm
Repeat PRN

BEGIN CPR

EMR
EMT
EMT-A
EMT-P

Return of spontaneous circulation (ROSC)
Reassess patient
Support as needed
Obtain 12-lead ECG if available

CPR compressions should be hard and fast (100/min) with adequate chest recoil.

CPR compressions should not be interrupted for greater than 10 seconds.

Once an advanced airway has been placed, perform continuous compressions without pauses for ventilations.

If unwitnessed cardiac arrest, perform 5 cycles of CPR prior to rhythm analysis.
CP4

V-Fib/Pulseless V-Tach

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<th>EMT</th>
<th>Assessment</th>
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<td>EMT-A</td>
<td>EMT-P</td>
<td>Manage airway with OPA/NPA &amp; BVM 5 cycles of CPR Consider possible causes Consider additional resources (ALS intercept)</td>
</tr>
<tr>
<td>EMT</td>
<td>Use AED mode, take action as prompted</td>
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</tr>
<tr>
<td>EMT-A</td>
<td>EMT-P</td>
<td>Assess rhythm</td>
</tr>
<tr>
<td>EMT-A</td>
<td>EMT-P</td>
<td>Defibrillate X 1</td>
</tr>
<tr>
<td>EMT-P</td>
<td>Place advance airway (may consider later if ventilation is adequate with OPA/NPA &amp; BVM</td>
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<tr>
<td>EMT-P</td>
<td>EMT-P</td>
<td>Analyze rhythm after every five cycles of CPR Establish vascular access</td>
</tr>
<tr>
<td>EMT-P</td>
<td>Defibrillate X 1 Epinephrine (1:10,000) 1 mg IV/IO q 3-5 minutes PRN Vasopressin IV/IO 40 units can replace 1st or 2nd dose of epinephrine</td>
<td></td>
</tr>
<tr>
<td>EMT-P</td>
<td>5 cycles of CPR Analyze rhythm Defibrillate X 1 Amiodarone (1st dose: 300 mg bolus) (2nd dose: 150 mg)</td>
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</tr>
<tr>
<td>EMR</td>
<td>EMT</td>
<td>5 cycles of CPR Repeat PRN</td>
</tr>
<tr>
<td>EMT-P</td>
<td>If prolonged arrest, suspected pre-existing hyperkalemia or TCA OD, consider Sodium Bicarbonate: 1 mEq/Kg SIVP/IO</td>
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</tbody>
</table>

Differential Diagnosis and Potential Causes:
- Hypovolemia
- Hypoxia
- Hydrogen ions (acidosis)
- Hypo/Hyperkalemia
- Hypoglycemia
- Hypothermia
- Tablets/Toxins
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis (coronary)
- Thrombosis (pulmonary)
- Trauma

ETCO2
- All ET intubations will have waveform capnography to confirm and monitor ET placement.
- If ETCO2 is below 20, focus on improving the quality of chest compressions.
- ROSC is often indicated by sharp rise in ETCO2 to over 40 mmHg before pulse is palpable.

Refer to protocol for discontinuing resuscitation efforts
The **EMR** may proceed as follows:

- Assess the patient
- CPR for 2 minutes: Compressions 2 inches deep at a rate over 100/minute
- Attach AED/ Follow AED prompts
- If possible rotate compressor every 2 minutes
- 30:2 compressions: ventilation if no advanced airway.
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- Insert OPA and use supplemental oxygen with BVM
- If available and ALS intercept should be arranged
- After 2 minutes of CPR/Analyze/Follow AED prompts
- Transport to a medical facility

The **EMT** may proceed as follows:

- Assess the patient
- CPR for 2 minutes: Compressions 2 inches deep at a rate over 100/minute
- Attach AED/ Follow AED prompts
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- Insert OPA and use supplemental oxygen with BVM
- If available and ALS intercept should be arranged
- After 2 minutes of CPR/Analyze/Follow AED prompts
- Transport to a medical facility

The **EMT who has** completed the PCP bridge or the PCP trained EMT may insert a King LTA device if the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics

The **EMT-A** may proceed as follows:

- Assess the patient
- CPR for 2 minutes: Compressions 2 inches deep at a rate over 100/minute
- Attach cardiac monitor/Analyze rhythm – defibrillate X 1 (immediately resume 2 minutes of CPR)
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- Insert OPA and use supplemental oxygen with BVM
- If available and ALS intercept should be arranged
- After 2 minutes of CPR analyze rhythm – defibrillate X 1 (immediately resume 2 minutes of CPR)
- Obtain vascular access (IV)
- The EMT-A may insert a subglottic airway (if available)
- Transport to a medical facility

The **EMT-P** may proceed as follows.

- Assess Patient
- CPR for 2 minutes-analyze-Defibrillation X 1 (immediately resume 2 minutes of CPR)
- Insert OPA/NPO and use supplemental O2 with BVM
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- Obtain vascular access
- **Epinephrine** 1 mg IV/IO every 3 – 5 minutes (or Vasopressin 40 Units IV/IO x 1 dose)
- -Consider advanced airway, monitor with waveform capnography
- Following 2 minutes of CPR-analyze-Defibrillation X 1 (immediately resume 2 minutes of CPR)
- If VF/ VT, **Amiodarone** 300 mg IV/IO push (repeat in 5 minutes with 150 mg IV/IO)
- Assess for and treat reversible causes
- If prolonged arrest, or suspected pre-existing hyperkalemia or TCA OD, consider **Sodium Bicarbonate**: 1 mEq/Kg SIVP/IO
For **Pediatric** patients in V-fib/V-tach the **EMT-P** may treat as follows:

- Initial Defibrillation >1 year  2J/kg repeated at 4J/Kg (Use Browslow Tape)
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- **Epinephrine** 0.01 mg/kg (0.1 ml/kg) of 1:10,000 solution IV, IO
- Repeat doses of epinephrine 0.01mg/kg (0.1 ml/kg) of 1: 10,000 solution IV, IO q 3-5 mins.
- **Amioderone** should be the antiarrhythmic of choice administer one dose of 5 mg/kg diluted to a max of 300 mg in 20 – 30 mls of D5W IV or IO bolus. This may be repeated once at 2.5 mg/kg to a max of 150 mg.

  **If Amiodarone is not available Lidocaine may be used**

- **Lidocaine** initial dose of 1.0-1.5 mg/kg IV, IO Repeat doses of Lidocaine 0.5-0.75 mg/kg IV IO to a maximum of 3 mg/kg
- Further repeat doses of amioderone are not indicated, nor are further doses of lidocaine following administration of amioderone.
- Administer a 20-ml/kg bolus of fluid IV or IO and repeat once if previous treatments are ineffective.

**Note:**

- Termination of the resuscitation and pronouncement of death are outlined in the Death in the Field protocol.
- Transport the patient for further resuscitation to a health care facility.

**Note:**

- Nitroglycerine patches must be removed from the chest wall prior to defibrillation as they may cause arching, skin burns, etc.
- Ideally use the pediatric quick combo pads, however the small pediatric defibrillation paddles must be used in patients weighing less than ten kilograms.
- Avoid placing defibrillator pads or paddles over the generation unit of implanted pacemakers, cardioverters or defibrillators.
- Patients with a core temperature below 30° C are to receive the initial defibrillatory shock. If this is ineffective, carry out CPR and do not administer further defibrillatory shocks or any drugs until the patient's core temperature is greater than 30° C.
- Each IV/IO dose of medication must be followed by a bolus of normal saline as follows:
  - Under 6 years of age: 5 ml
  - Ages 6 to 12 years of age: 10 ml
  - Over 12 years of age: 20 ml
- If an IV cannot be successfully established in a child under the age of six within 90 seconds of initiation of the resuscitation attempt, the paramedic may start an intraosseous infusion.
- If a peripheral IV cannot be established in an adult within 90 seconds of initiating the resuscitation attempt the paramedic may attempt external jugular cannulation or establish an intraosseous infusion.
CP4       V-Fib/Pulseless V-Tach

Note:

ETCO2:

- All ET intubations will have waveform capnography to confirm and monitor ET placement.
- If ETCO2 is below 20, focus on improving the quality of chest compressions.
- ROSC is often indicated by sharp rise in EtCO2 to over 40 mmHg before pulse is palpable.

Bystander CPR:

- If unwitnessed cardiac arrest, perform 5 cycles of CPR prior to rhythm analysis.
- If witnessed by EMS or the patient has received bystander CPR analyze rhythm without delay.
- CPR compressions should no be interrupted for greater than 10 seconds.
- Once an advanced airway has been placed, perform continuous compressions without pauses for ventilations.

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**Differential Diagnosis and Potential Causes:**
- Hypovolemia
- Hypoxia
- Hydrogen ions (acidosis)
- Hypo/Hyperkalemia
- Hypoglycemia
- Hypothermia
- Tablets/Toxins
- Tamponade (cardiac)
- Tension pneumothorax
- Thrombosis (coronary)
- Thrombosis (pulmonary)
- Trauma

**ETCO2**
- All ET intubations will have waveform capnography to confirm and monitor ET placement.
- If ETCO2 is below 20, focus on improving the quality of chest compressions.
- ROSC is often indicated by sharp rise in ETCO2 to over 40 mmHg before pulse is palpable.
CP5

Asystole/PEA

The **EMR** may proceed as follows:

- Assess the patient
- CPR for 2 minutes: Compressions 2 inches deep at a rate over 100/minute
- Attach AED/ Follow AED prompts
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- Insert OPA and use supplemental oxygen with BVM
- If available and ALS intercept should be arranged
- After 2 minutes of CPR/Analyze/Follow AED prompts
- Transport to a medical facility

The **EMT** may proceed as follows:

- Assess the patient
- CPR for 2 minutes: Compressions 2 inches deep at a rate over 100/minute
- Attach AED/ Follow AED prompts
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- Insert OPA and use supplemental oxygen with BVM
- If available and ALS intercept should be arranged
- After 2 minutes of CPR/Analyze/Follow AED prompts
- Transport to a medical facility
- The **EMT who has** completed the PCP bridge or the PCP trained EMT may insert a King LTA device if the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics

The **EMT-A** may proceed as follows:

- Assess the patient
- CPR for 2 minutes: Compressions 2 inches deep at a rate over 100/minute
- Attach cardiac monitor/Analyze rhythm – (immediately resume 2 minutes of CPR)
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- For children/infants 15:2 compression/ventilation rate with 2 Health Care Providers
- Insert OPA and use supplemental oxygen with BVM
- If available and ALS intercept should be arranged
- After 2 minutes of CPR analyze rhythm – (immediately resume 2 minutes of CPR)
- Obtain vascular access (IV)
- The EMT-A may insert a subglottic airway (if available)
- Transport to a medical facility

The **EMT-P** may proceed as follows.

- Assess Patient
- CPR for 2 minutes-analyze- (immediately resume 2 minutes of CPR)
- Insert OPA/NPO and use supplemental O2 with BVM
- If possible rotate compressor every 2 minutes
- 30:2 compression: ventilation if no advanced airway
- Obtain vascular access
- **Epinephrine** 1 mg IV/IO every 3 – 5 minutes (or Vasopressin 40 Units IV/IO x 1 dose)
- -Consider advanced airway, monitor with waveform capnography
- Following 2 minutes of CPR-analyze- (immediately resume 2 minutes of CPR)
- If prolonged arrest, or suspected pre-existing hyperkalemia or TCA OD, consider **Sodium Bicarbonate**: 1 mEq/Kg SIVP/IO
NOTE:

- Termination of the resuscitation and pronouncement of death are outlined in the Death in the Field protocol.
- Transport the patient for further resuscitation to a health care facility.

NOTE:

1. Nitroglycerine patches must be removed from the chest wall prior to defibrillation as they may cause arching, skin burns, etc.

2. The small pediatric defibrillation paddles must be used in patients weighing less than ten kilograms.

3. Avoid placing defibrillator pads or paddles over the generation unit of implanted pacemakers, cardioverters or defibrillators.

5. Patients with a core temperature below 30°C are to receive the initial defibrillatory shock. If this is ineffective, carry out CPR and do not administer further defibrillatory shocks or any drugs until the patient's core temperature is greater than 30°C.

6. Each IV/IO dose of medication must be followed by a bolus of normal saline as follows:

   - Under 6 years of age: 5 ml
   - Ages 6 to 12 years of age: 10 ml
   - Over 12 years of age: 20 ml

7. If an IV cannot be successfully established in a child under the age of six within 90 seconds of initiation of the resuscitation attempt, the paramedic may start an intraosseous infusion.

8. If a peripheral IV cannot be established in an adult within 90 seconds of initiating the resuscitation attempt the paramedic may attempt external jugular cannulation or establish an intraosseous infusion.

11. Transcutaneous pacing (TCP) by the Paramedic, may be effective:

   - In asystole that occurs following intense vagal stimulation such as endotracheal intubation.
   - In asystole that occurs when the paramedic is present and witnesses the arrest.

Transcutaneous pacing is not otherwise recommended in asystole, and is rarely effective even with post defibrillation asystole.

ETCO2:

- All ET intubations will have waveform capnography to confirm and monitor ET placement.
- If ETCO2 is below 20, focus on improving the quality of chest compressions.
- ROSC is often indicated by sharp rise in EtCO2 to over 40 mmHg before pulse is palpable.

Bystander CPR:

- If unwitnessed cardiac arrest, perform 5 cycles of CPR prior to rhythm analysis.
- If witnessed by EMS or the patient has received bystander CPR analyze rhythm without delay.
- CPR compressions should not be interrupted for greater than 10 seconds.
- Once an advanced airway has been placed, perform continuous compressions without pauses for ventilations.
Assess appropriateness for clinical condition. Heart rate typically <50/min if bradycardia.

**Identify and treat underlying cause**
- Maintain patent airway; assist breathing as necessary
- Oxygen (if hypoxemic)
- Cardiac monitor to identify rhythm; monitor blood pressure and oximetry
- IV access
- 12-Lead ECG if available; do not delay therapy

**Monitor and observe**
- Hypotension
- Acutely altered mental status
- Signs of shock
- Ischemic chest discomfort
- Acute heart failure

**Persistent bradycardia causing:**

**Atropine**
- If atropine ineffective:
  - Transcutaneous pacing
  (if patient’s condition allows consider sedation with midazolam prior to initiation of pacing).
  - Epinephrine infusion

**Dose/Details:**

**Atropine IV Dose:**
- First dose: 0.5 mg bolus
- Repeat every 3-5 minutes
- Maximum: 3 mg

**Epinephrine IV infusion**
- 2-10 mcg per minute

(Mix 1 mg of Epinephrine 1:1000 in 500 ml bag of NaCl or Ringers Lactate which will give you a mixture of 2 mcg/ml).

Begin the infusion at 60 ml/hr (2 mcg/min) and then titrate until desired effect or till 300 ml/hr (10 mcg/min) has been reached.

An infusion pump must be used for this purpose.
Most patients should receive sedation prior to pacing. If the patient is rapidly deteriorating, it may be necessary to begin pacing without sedation.

   o Benzodiapines should be used for anxiety and muscle contractions
   o Narcotics for analgesia

If symptomatic or with signs of hypoperfusion as above administer Atropine 0.5 mg - 1.0 mg IV every three to five minutes to a maximum of 0.03 mg/kg if the signs or symptoms are mild, or 0.04 mg/kg if the signs or symptoms are severe.

**Pediatric dose of Atropine:**

   • 0.02 mg/kg with a minimum dose of 0.1 mg and a maximum dose of 0.5 mg in a child and 1.0 mg in an adolescent. This dose may be repeated once in five minutes to a maximum dose of 1.0 mg in a child and 2.0 mg in an adolescent.
   • In children with a bradycardia who are symptomatic or with signs of hypoperfusion as above, and are unresponsive to Atropine, administer Epinephrine as follows:

**Pediatric dose of Epinephrine:**

   • 0.01 mg/kg (0.1 ml/kg) of 1:10,000 solution IV or IO. This dose may be repeated every three to five minutes.

**NOTE:**

When performing TCP, if electrical capture has been obtained without mechanical capture:

1) Infuse 250-500 ml of normal saline in an adult and (20ml/kg) in a child. Repeat as ordered by medical control.

2) If IV fluids are not successful in improving the BP infuse Epinephrine at 2 - 10 µg/min. (Mix 1 mg of Epinephrine 1:1000 in 500 ml of normal saline or Ringers Lactate which resulting in a mixture of 2 µg/ml.) Begin the infusion at 60 ml/hr (2 µg/min) and then titrate until the desired clinical response is achieved or 300 ml/hr (10 µg/min) has been reached. An infusion pump must be used for this purpose.

3) If patient’s condition allows, consider sedation with midazolam prior initiation of pacing. Ongoing pacing will require sedation for comfort and pain control.

**EMT**

   • Assess ABC, provide high flow oxygen, through non-rebreather mask if patient breathing. If the patient has agonal respirations assist ventilations.
   ß Obtain 12-lead ECG if trained and authorized to do so.
   • If not trained in 12 lead ECG, and a cardiac monitor is maintained as part of the equipment on the responding ambulance, the patient should be monitored and an ECG strip (eight seconds in duration) obtained for reference of the receiving physician.

**B. REQUIRES DIRECT MEDICAL CONTROL**

The use of TCP for bradycardia patients, other than those with hypotension, requires direct medical control.
EMT-A/EMT-P

- If the patient is unconscious and unable to maintain an airway insert a Combitube/LMA/King LTA and ventilate. The Paramedic may perform endotracheal intubation if required to maintain the airway.
- Obtain 12-lead ECG if trained and authorized
- If a cardiac monitor is maintained as part of the equipment on the responding ambulance, the patient should be monitored and an ECG strip (eight seconds in duration) obtained for reference of the receiving physician.

**NOTE:**

1. Each IV dose of medication must be followed by a bolus of normal saline as follows:
   - Under the age of six years: 5 ml (and after IO injections)
   - Ages six to twelve years: 10 ml
   - Over the age of twelve years: 20 ml
2. Bradycardia should be treated in any child with a heart rate less than 80 beats per minute if there is poor systemic circulation even when the blood pressure is normal.
3. The most common cause of bradycardia in a child is hypoxia. Therefore, priority is given to the assessment and management of hypoxia rather than the use of Atropine in the pediatric age group.
4. There is controversy as to whether Atropine or Epinephrine is the drug of choice in the treatment of symptomatic pediatric bradycardia.
5. If an IV cannot be successfully established in a child under the age of six years within 90 seconds of initiating the attempt, start an intraosseous infusion.
6. Lidocaine **must not** be used in the presence of PVCs in the bradycardic patient as this can lead to asystole.
7. Post transplant hearts will not respond to Atropine as the heart is denervated. In these circumstances proceed directly to TCP, if available.
CP7

Tachycardias

Dose/Details:

Synchronized Cardioversion
Initial recommended doses:
- Narrow regular: 50-100 J
- Narrow irregular: 120-200 J biphasic or 200 J monophasic
- Wide regular: 100 J
- Wide irregular: defibrillation dose (not synchronized)

Adenosine IV Dose:
First dose: 6 mg RIVP; follow with NaCl flush
Second dose: 12 mg follow with NaCL flush

Do not administer adenosine of the patient is taking carbamazepine (Tegretol) or dipyridamole (persantine) (consult medical control)

Amiodarone IV dose:
First dose: 150 mg over 10 minutes.
Repeat as needed if VT reoccurs.
Max dose of 2.2 g given in a 24-hour period.

Maintenance infusion:
450 mg of amiodarone in 250 mls of D5W and run it over 6 hours (33ml/hr)

If amiodarone is not available, Lidocaine may be considered for the treatment of monomorphic VT:

Lidocaine is administered at a dose of 1 to 1.5 mg/kg IV/IO bolus

Maintenance infusion:
1 to 4 mg/min (30 to 50 mcg/kg per minute).
Basic Life Support

- Assess and support ABCs as needed
  - Give oxygen
  - Monitor ECG (identify rhythm), blood pressure, oximetry
- If the patient is stable and the EMT is trained to do so, obtain 12 Lead ECG.
- Transport to the nearest hospital continuing to monitor cardiac status and overall patient condition.

EMT-A

- See box 2 above
- Initiate IV with normal saline.
- Rule out hypovolemia as a cause of the tachycardia.
- If the patient is stable and the EMT-A is trained to do so, obtain 12 Lead ECG.
- Transport to the nearest hospital continuing to monitor cardiac status and overall patient condition.

The EMT-P may proceed as follows:

- Adults in a supraventricular tachycardia greater than 150 beats/minute that are in overt shock, or are hemodynamically unstable, (hypotension and associated symptoms such as chest pain, decreased level of consciousness) may undergo synchronized cardioversion as follows:
  - Initial cardioversion:
    - Narrow QRS ($\leq 0.12$), regular: 50-100 J
    - Narrow QRS ($\leq 0.12$), irregular: 120-200 J biphasic or 200 J monophasic
    - Wide QRS ($> 0.12$), regular: 100 J
    - Wide QRS ($> 0.12$), irregular: defibrillation dose (not synchronized)
  - If synchronized cardioversion has been unsuccessful after 4 attempts contact medical control for further orders.

If the patient's condition allows sedation with midazolam may be administered as follows:

2-5 mg IV, repeat at 1 mg IV to a max of 5 mg

This medication may worsen hypotension.
**Pediatric Adenosine:**

Hemodynamically stable children with a known or documented history of PSVT may be administered adenosine as follows:

1. **1st dose:** 0.1 mg/kg IV as rapidly as possible followed by a 5 ml bolus of normal saline, maximum dose 6 mg.
2. **2nd dose:** 0.2 mg/kg IV as rapidly as possible followed by a 5 ml bolus of normal saline, maximum dose is 12mg.
   - If ineffective, transport immediately to a healthcare facility.

**For Adults in Stable Ventricular Tachycardia**

- Administer Amiodarone 150 mg in 100 mls of D5W over 10 minutes, repeat as needed, maximum dose of 2.2 g is given in a 24-hour period. If an infusion is initiated mix 450 mg of Amiodarone in 250 mls of D5W and run it over 6 hours (33ml/hr).
  
  If Amiodarone is unavailable, lidocaine may be considered

- Lidocaine 1.0 – 1.5 mg/kg IV (2 – 4 mg/kg via endotracheal route) may be administered. For refractory VF Lidocaine may be repeated at 0.5 – 0.75 mg/kg IV push every 5 – 10 minutes, to a maximum of 3.0mg/kg.

**For Pediatric patients in stable Ventricular Tachycardia:**

- Amiodarone 5 mg/kg IV to a single max dose of 300 mg (dilute in 250 ml of D5W bag and infuse over 60 minutes).
  
  If Amiodarone is unavailable, lidocaine may be considered

- Administer Lidocaine 1.0 mg/kg IV, IO or via the endotracheal route
  Repeat doses of Lidocaine 1.0 mg/kg IV IO or via endotracheal route to a maximum of 3 mg/kg.

- Administer a 20-ml/kg bolus of fluid IV or IO and repeat once if ineffective.
- Repeat doses of amioderone are not indicated, nor are further doses of lidocaine following administration of amioderone.

**NOTE:**

1. Adenosine may cause brief bradycardia and/or asystole lasting several seconds. Treatment is not required unless prolonged. (if prolonged see Bradycardia/Asystole protocol)
2. Obtain monitor strip during treatment with adenosine (for each bolus).
3. Adenosine is contraindicated in patients on **dipyridamole** (Persantine) and **carbamazepine** (Mazepine).
4. As heart transplant patients are very sensitive to this drug, discuss a smaller dose regime with medical control
5. Use Adenosine with caution in asthmatics (inhaled Adenosine has been reported to precipitate bronchospasm in asthmatics; this has not been reported following IV Adenosine).
6. **Adenosine may be used if hypotension is present with associated symptoms, however, if at any time the patient develops shock, immediate synchronized cardioversion is indicated.**
MEDICAL PROTOCOLS

MP1  Allergy/Anaphylaxis
MP2  Asthma / COPD
MP3  Dyspnea
MP4  Hypoglycemia
MP5  Seizures
MP6  Unconsciousness of Unknown Etiology
MP7  Stroke
MP8  Childbirth
MP9  Poisoning
MP10 Cyclic Antidepressant Overdose
MP11 Pyrexic Child
MP12 Psychiatric Emergencies
MP13 Acute Abdominal Pain (non-traumatic)
MP14 Nausea & Vomiting
MP15 Severe Sepsis/Septic Shock

SCOPE OF PRACTICE

GENERAL PROTOCOLS

TREATMENT PROTOCOLS

CARDIAC

MEDICAL

TRAUMA

INTER-FACILITY TRANSFER PROTOCOLS

INDEX
Basic Life Support

Primary Survey.

- Assess ABC’s
- Administer high flow oxygen.
- If the patient is in severe respiratory distress this is a load and go situation

Secondary Survey.

- Note the presence of, and extent of, related signs indicating the severity of reaction; respiratory status, skin color, swelling, urticaria (hives), abdominal cramps, nausea/ vomiting and vital signs.

a) Known sensitivities and allergies.
b) Onset of symptoms.
c) Possible source of toxin.
d) Medical identification, such as medic alert.
e) Prophylactic medications in patient’s possession.
f) If a stinger from a bee or other stinging insect is imbedded in the skin, remove by scraping with a fingernail. Do not grasp to remove.

NOTE:

The EMT who has completed the PCP bridge or the PCP trained EMT may administer epinephrine as follows:

- If the patient is normotensive, a physician’s order can be obtained for administering 0.5 ml of 1:1000 epinephrine subcutaneously into the upper arm or IM into the deltoid muscle (the anterolateral aspect of the thigh in infants and small children.

- The pediatric dose of epinephrine is 0.01 mg/kg or 0.01 ml/kg of 1:1000 epinephrine to a maximum of 0.5 ml.

The EMT who is not PCP trained, the EMR and First Responder may proceed as follows:

Using an EpiPen:

- Remove the grey safety cap to access the pen and follow the manufacturers instructions for use.
- Do not place your thumb over the black tip at any time.
- Following use place the pen back in its container and replace the grey safety cap.
- Transport to a medical facility immediately following treatment.

NOTE:

When in a service area where EMT-A or an EMT-P practitioner is available, if the patient's condition deteriorates, arrange an ALS intercept.
**Advanced Life Support**

**A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL**

- Initiate an IV TKO.
- If the patient requires and advanced airway the EMT-A/Paramedic may insert a Combitube\LMA\King LTA and ventilate.
- The EMT-P may choose to intubate and ventilate.
- Initiate cardiac monitoring, especially when medication will be used.

The **EMT-A** may proceed as follows:

If the patient is normotensive, 0.5 ml of 1:1,000 Epinephrine.

  a) Subcutaneously - into upper arm.
  b) Inject IM into the deltoid muscle (into the anterolateral aspect of the thigh in infants and small children)

Pediatric dose of Epinephrine is 0.01 mg/kg or 0.01 ml/kg of 1:1000 Epinephrine to a maximum of 0.5 ml subcutaneously

The **EMT-P** may proceed as follows:

If signs of moderate allergic reaction (i.e. itching, and/or urticaria only, no respiratory compromise) the **EMT-P** may administer:

Diphenhydramine 1mg/kg to a maximum dose of 50 mg by oral, IM or IV route.

If the decision is to administer via IV route, the dose of diphenhydramine will be placed in a 50 or 100 ml minibag of normal saline and infused over 10 to 15 minutes.

If the patient is normotensive, 0.5 ml of 1:1,000 Epinephrine (pediatric dosage is 0.01 ml/kg of Epinephrine 1:1000 or 0.1 ml/kg of Epinephrine 1:10,000) by one of the following routes, providing sufficient respirations exist:

  a) Subcutaneously - into upper arm.
  b) Inject IM into the deltoid muscle (into the anterolateral aspect of the thigh in infants and small children)
  c) 2.0 - 3.0 mg by the endotracheal route in an adult.

If the patient is hypotensive, administer 1.0 ml of 1:10,000 Epinephrine IV push slowly over several minutes in an adult. May be repeated once after five minutes if necessary. If bronchospasm is present, consider the use of Salbutamol.

Following the injection of epinephrine:

  a) Diphenhydramine 1mg/kg to a maximum dose of 50 mg by oral, IM or IV route. If the decision is to administer via IV route, the dose of diphenhydramine will be placed in a 50 or 100 ml minibag of normal saline and infused over 10 – 15 minutes, followed by;
  b) Methylprednisolone 1 mg/kg IV, to a maximum of 125 mg, in a 50 to 100 ml minibag of normal saline over 15-20 minutes.
Basic Life Support

CONSCIOUS PATIENT

Primary survey

- Assess for the presence or absence of cyanosis, altered level of consciousness, abnormal respiratory pattern.
- Administer oxygen be prepared to assist respirations.
- Allow patient to seek position of comfort (usually sitting) loosen tight clothing.

Secondary survey

- Obtain and record vital signs, including bilateral breath sounds every 10 to 15 minutes.
- Obtain pertinent medical history, such as:
  a) onset and duration of problem;
  b) previous similar episode;
  c) current medications: prescription, non-prescription, last taken; and
  d) known allergies.

- Transport patient in position of comfort, reassure.
  o A EMT who has completed the PCP bridge or the PCP trained EMT practitioner
     who has successfully completed a learning module that has been approved by the
     Saskatchewan College of Paramedics, may use their discretion and administer CPAP (if
     available) to a patient if the patient’s condition warrants it.

UNCONSCIOUS PATIENT

Primary survey

a) Protect airway.
   b) Suction secretions, if needed.
   c) Insert oropharyngeal airway if supine.

- Administer oxygen
  a) Prepare to assist respirations.
  b) Respiratory rate of less than eight or greater than 30 per minute indicates respiratory
     distress in an adult. Healthy infants may have respiratory rates of up to 40 per minute.

Secondary Survey

- Obtain pertinent medical history.
  a) Look for medical identification tags (i.e., medic alert).
  b) Obtain and record vital signs, including bilateral breath sounds every five minutes.

- Transport patient on side.
  a) Prepare to assist respirations.
  b) Prepare to suction secretions.
  c) Prepare to initiate CPR.

- Notify health care facility enroute.
NOTE:
When in a service area where EMT-A or Paramedic service is available, if the patient's condition deteriorates, arrange an ALS intercept.

Advanced Life Support:
The EMT-A and/or EMT-P may proceed as follows:

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- Place patient in a position of comfort.
- If shortness of breath is moderate to severe with asthma, provide high flow oxygen by non-rebreather mask.
- If shortness of breath is moderate to severe with emphysema, provide low flow oxygen, by a mask or nasal cannula, and increase as needed.
- Never withhold oxygen from a patient with COPD.
- Monitor cardiac status.
- Initiate and IV of N/S
- If bronchospasm is present administer salbutamol/ipratropium through a nebulizer mask.

There are two different ways that salbutamol/ipratropium can be mixed:

For adult patients:

1. Using a multidose vial 50 mg in 10 ml (5 mg/ml), draw up 2.5 mg (0.5 ml) of salbutamol and add 2 - 4 ml of NaCl. In severe cases of bronchospasm, administer 5 mg of salbutamol and add 2 - 4 ml of NaCl.

2. Salbutamol Nebules (premixed Salbutamol)
   - Concentration - 2.5 mg/2.5 ml.
   - Adult Dosage - one nebuše (2.5 mg)
   - In severe shortness of breath - two nebulules (5.0 mg).
   - Set the oxygen flow rate at six to eight litres per minute.

For pediatric patients:

1. Using a multidose vial 50 mg in 10 ml (5 mg/ml), draw up 1.25 mg (0.25 ml) of salbutamol and add 2 - 4 ml of NaCl. In severe cases of bronchospasm, administer 2.5 mg of salbutamol and add 2 - 4 ml of NaCl.

2. Salbutamol Nebules (premixed salbutamol)
   - Concentration - 1.25 mg/2.5 ml.
   - Pediatric Dosage - one nebuše (1.25 mg)
   - In severe shortness of breath - two nebulules (2.5 mg).
   - Set the oxygen flow rate at six to eight litres per minute.
   - If adequate relief of bronchospasm is not achieved with the initial dose of Salbutamol, repeat the salbutamol and/or provide a mixture of salbutamol/ipratropium bromide.
Administer Atrovent if the patient:

a) has not responded to previous doses of salbutamol;
b) is not allergic to ipratropium bromide; or
c) has not received ipratropium in the previous four hours.

**Dosage of Atrovent:**

- Not recommended for children under five years.
- Five to twelve years: 0.5 ml
- Twelve years and older: 1.0 - 2.0 ml
- If adequate relief of bronchospasm is not achieved with the initial dose of salbutamol/ipratropium repeat doses of salbutamol/ipratropium may be administered.
- Patients with a history of glaucoma who are in severe bronchospasm may still receive nebulized ipratropium, preferably while wearing goggles.
- Patients with mild or moderate bronchospasm and a history of glaucoma should not receive ipratropium unless they are wearing goggles.

When “status asthmaticus” exists, or;

- where the asthmatic episode is a part of an anaphylactic reaction associated with symptoms such as urticaria, and upper airway edema, etc;
- where the patient is unable to inhale nebulized salbutamol/ipratropium as a result of inadequate air exchange;
- where the patient is deteriorating despite oxygen, and nebulized bronchodilators salbutamol/ipratropium

Administer Epinephrine as follows:

**Adults:** 0.3ml to 0.5ml of 1/1000 epinephrine subcutaneously - into the upper arm.

**Children:** 0.01ml/kg (0.1 ml/kg) of 1/1000 epinephrine to a maximum of 0.5ml subcutaneously – into the upper arm.

| Epinephrine is not indicated in COPD unless the patient’s dyspnea was precipitated by an anaphylactic reaction. |

The EMT-P may proceed as follows:

**Oral prednisone 2mg/kg to a maximum dose of 40mg, or;**

If the patient is vomiting or in extremus, mix IV methylprednisolone 1mg/kg, to a maximum dose of 125 mg, in a 50 to 100 ml minibag bag of normal saline and administer over 15 to 20 minutes.

**If available and at the discretion of the EMT/EMT-A/EMT-P the consideration of the application of continuous positive airway pressure device (CPAP) if patient’s condition doesn’t improve with initial treatments may be warranted.**
**Inclusion Criteria**

- Patient must be alert and able to follow commands (GCS >13)
- Be able to maintain an open and patent airway on their own
- Patient is over 12 years of age and must be able to fit the CPAP mask

**CPAP should be considered in the following types of patients:**

- Hypoxemia secondary to congestive heart failure
- Acute cardiogenic shock
- Pulmonary edema
- Asthma/COPD
- Respiratory distress (A respiratory rate >25bpm, SpO2 <92%, accessory muscle use during respiration.)

**Contraindications**

- Pnuemothorax or chest trauma
- Hemodynamically unstable patients
- Altered mental state, uncooperative or unresponsive patients
- Patient has a tracheotomy
- Patient is actively vomiting
- Patient has an upper GI bleed

**NOTE:**

- The Paramedic should follow the instructions for application of CPAP according to the manufacturers instructions for the device they are using.
- The operator adjusts flow and FiO2 depending on the patient’s tolerance to the mask, pulse oximetry and dyspnea.
- The practitioner should watch for gastric distension, which can result in vomiting.
- CPAP therapy needs to be continuous and should not be removed unless the patient cannot tolerate the mask or experiences respiratory/cardiac arrest or begins to vomit. If the CPAP therapy needs to be discontinued intermittent positive pressure ventilation with a Bag-Valve-Mask device and/or placement of an endotracheal tube should be considered.
- On arrival at the hospital do not remove CPAP until hospital therapy is ready to be placed on patient.

**The EMT who has completed the PCP bridge or the PCP trained EMT may only use CPAP on patients following successfully completion of a teaching module approved by the Saskatchewan College of Paramedics.**
Basic Life Support

Primary survey

- Perform ABC’s.
- Suction secretions, as needed and turn patient on their side to maintain proper airway management.
- Administer oxygen.
- Maintain airway support if needed using BVM.
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so.

Secondary Survey:

- If possible determine the cause of the dyspnea and treat according to the appropriate protocol.
- If the cause cannot be readily identified transport immediately to a health care facility.

**NOTE:**

The use of paper bags with hyperventilation syndrome is no longer considered appropriate medical treatment.

Advanced Life Support

Croup

At certain times of the year, EMT-A and EMT-P personnel will encounter pediatric patients with croup. Should you encounter these patients and “stridor” is present treat as follows:

Children < 5 Kg – administer .5mg/kg (.5 mls/kg) of 1:1000 eprinephrine (max of 2.5 mg) diluted in 2.5 – 3 mls of N\S via nebulizer mask

Children > 5 Kg – administer 2.5 – 5 mg (max of 5 mg) of 1:1000 epinephrine diluted in 2.5 – 3 mls of N\S via nebulizer mask
Basic Life Support

Primary survey.
- Assess ABC

Secondary survey.
- Suspect hypoglycemia in a patient with a decreasing level of consciousness, confusion, agitation or other behavioural change.
- Obtain pertinent medical history, such as:
  a) how much, when, and type of insulin taken
  b) when did patient last eat
  c) recent or current illness, heavy exercise or high stress (i.e. flu, athletic activity, accident)
  d) pregnancy
- Maintain body heat.
- Protect the airway and provide supplemental oxygen suction secretions if needed.
- Perform a blood glucose test to determine the presence and extent of the hypoglycemia (a reading of 4.5 mmol/L or less indicates hypoglycemia).
- If the patient is conscious or arousable with an intact gag reflex attempt to administer oral glucose tablets or oral glucose in paste form by applying to oral mucosa or gums in repeated, small doses.
- When possible, monitor the cardiac status of all unconscious patients, especially the elderly and known cardiac patients.
- If the patient arouses and appears stable, transport without further treatment.
- If documented hypoglycemia is present in the unconscious patient, place patient on their side and place an oral glucose preparation on the inside of the cheek that is closest to the floor.
- Transport patient on their side.

The EMT-A/EMT-P may proceed as follows:
- If the patient is unconscious or is unable to swallow, initiate an IV TKO and administer 50 ml of D50W IV push if an adult patient.
- The pediatric dosage for the intravenous administration of glucose is D25W (0.25 g/ml); give 2-4ml/kg.
- If an IV in a large vein cannot be established within 90 seconds or two attempts, administer reconstituted glucagon subcutaneously, as follows:
  Under 12 years: 0.1 mg/kg (0.1 ml/kg) to a maximum of 1.0 mg (1.0 ml).
  Twelve years and older: 1.0 mg (1.0 ml).
- The EMT-A/EMT-P may administer repeat doses of D50W (D25W in children) PRN q 5min and glucagon PRN q 15 min.

Transportation should start once the medication has been administered. Further chemstrips and treatment will be carried out during transport to prevent delays in reaching an appropriate health care facility.
The **EMT-P** may proceed as follows:

- **Administer Thiamine 100 mg slow IV push to any adult patient who has received D50W IV and appears malnourished (substance abuse, terminal illness, etc.).**

**NOTE:**

1. **UNDER NO CIRCUMSTANCES ADMINISTER INSULIN, EVEN IF THE PATIENT REQUESTS IT.**

2. Diabetic patients may be unconscious for reasons other than hypoglycemia, thus the care provider must be thorough in their history taking and assessment.

3. When in a service area where an EMT-A or EMT-P service is available, if the patient’s condition deteriorates, arrange an ALS intercept.

**SPECIAL CONSIDERATIONS:**

The model of blood glucose monitor used and the initial and ongoing training must be determined by the local Health Region in order to ensure consistency in testing and quality control.
**Basic Life Support**

**During the seizure:**

- Remove hazards from immediate surroundings.
- Turn patient on side with head down.
- Administer oxygen.
- Obtain a blood glucose reading.
- Maintain patient's personal dignity by removing bystanders and covering patient if possible.
- If a BLS provider encounters a patient in “status epilepticus as defined below transport immediately.

**DO NOT FORCIBLY RESTRAIN PATIENT'S EXTREMITIES DURING A SEIZURE.**

**Post seizure:**

Primary survey.

- Continue to administer oxygen until the patient is alert.

Secondary survey.

Obtain pertinent medical history, such as:

- Known seizure disorder.
- Medications taken, what and when.
- Medical identification.
- Suspected alcohol or drug abuse.
- Recent trauma.
- Note fever, particularly in children under five years of age.
- Treat injuries (see specific protocols).
  Transport in semi prone position.

**Advanced Life Support**

On occasion you may encounter what is known as “Status Epilepticus” defined as a generalized grand mal seizure lasting longer than 15 minutes or where repeated generalized grand mal seizures have occurred over a half hour without a return of consciousness between seizures.

**A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL**

- Maintain airway and have suction available.
- Supplement with high flow oxygen.
- Assist respirations as required.
- Rule out hypoglycemia by obtaining a blood glucose reading. Proceed as appropriate.
- Initiate and IV of D5W TKO
- Transport to health care facility.
The EMT-A/Paramedic may:

Administer lorazepam as follows:

Adult – 4 mg IV

Repeat 10 – 15 min if seizure continues, using the same dose

Peds - 0.1mg/kg up to 4mg IV;

Repeat 10 – 15 min if seizure continues, using the same dose

0.1 mg/kg intra-nasal to a max of 4 mg.

Administer midazolam as follows:

Adult – 10 mg IM or;

2.5 mg IV q2 minutes titrated to effect to a max of 10 mg.

Peds- 0.2 mg/kg IM to a max of 7 mg or;

0.1-0.2 mg/kg intra-nasal to a max of 7 mg or;

0.1 mg/kg IV to a max of 7 mg repeated x 1 in 10 minutes

SPECIAL CONSIDERATIONS:

- During the administration of lorazepam or midazolam, the ALS provider must monitor respirations and blood pressure.
- The ALS provider must be prepared to ventilate those patients who develop respiratory depression or partial airway obstruction following administration. Be especially attentive to this in patients over 50 years of age.
- Additional responses could include vertigo, weakness, unsteadiness, restlessness, confusion, depression, delirium, hallucinations, diplopia, and/or amnesia.

NOTE:

- When in a service area where an EMT-A or EMT-P service is available, if the patients condition deteriorates, arrange an ALS intercept.
- Patients in postictal state may appear lethargic, drift into sleep, or have short-term memory loss. They should be allowed to rest and should be reassured. It may be helpful to re-orientate the patient by telling them where they are, what happened, who you are, etc.
- In general, assessment and treatment should take place after the seizure has terminated. In the case of multiple continuous seizures (status epilepticus), treatment and transportation will be necessary during seizure activity.
- Consult with you medical advisor as to which one of the medications identified in this protocol will be used for controlling seizures in your response area.
MP6 Unconscious - Unknown Etiology

Primary survey:
- Protect airway, perform ABC’s.
- Suction secretions, as needed.
- Administer oxygen.
- Maintain airway support if needed using BVM.

Secondary survey:
- Rule out hypoglycemia by obtaining a blood glucose reading. If present proceed to hypoglycemia protocol.
- Treat as indicated according to assessment findings and protocols.
- Transport patient in recovery position.

Advanced Life Support

The EMT-A and/or EMT-P may proceed as follows:

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- Start an IV of N/S to maintain systolic blood pressure at 100 mg/Hg.
- If hypotensive treat for shock and determine cause.

The EMT-P may proceed as follows:

- Administer naloxone and titrate to effect if there is evidence of respiratory depression and other indicators of narcotic overdose;
- In children administer 0.1 mg/kg to a maximum of 2.0 mg (titrate to effect)
- Following a repeat dose the paramedic should consider consultation with medical control.

NOTE:
1. In unconsciousness due to trauma or unknown etiology, assume patient has a spinal cord injury
2. Prepare to handle respiratory and/or cardiac arrest
3. Prepare to handle combative, disoriented patient.
4. Prepare to handle seizures.
5. Talk to the patient, hearing is the last sense to be lost, even in coma.
6. If possible find and transport all medications with patient.
7. Look for medical identification or any other clues to etiology.
8. Do not administer anything by mouth.
9. When in a service area where EMT-A or an EMT-P practitioner is available, if the patient’s condition deteriorates, arrange an ALS intercept.
Basic Life Support

Primary survey:

- Perform ABC’s.
- Suction secretions, as needed and turn patient on their side to maintain proper airway management.
- Administer oxygen.
- Maintain airway support if needed using BVM.
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so.

Secondary survey:

- Rule out hypoglycemia by obtaining a blood glucose reading. If present proceed to hypoglycemia protocol.
- Treat as indicated according to assessment findings and protocols protecting affected limbs.
- If not contraindicated, elevate head of stretcher by approximately 30o.
- Talk to the patient, keep the patient informed. If patient is unconscious, transport patient on side, non-paralyzed side down. While aphasic patients are unable to speak, they are usually acutely aware of their surroundings and should be reassured.

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- The **EMT who has completed the PCP bridge or the PCP trained EMT** practitioner may insert a King LTA device if the patient is apneic and the practitioner has successfully completed a teaching module approved by Acute and Emergency Services, Ministry of Health.

The **EMT-A** may proceed as follows:

- If the patient is or becomes apneic insert a Combitube/LMA/KING LTA.
- If cardiac arrest develops proceed to appropriate protocol.
- Establish IV of N/S

The **EMT-P** may proceed as follows:

- If the patient becomes apneic intubate.
- If cardiac arrest or dysrhythmias develop, proceed to the appropriate protocols.
- If patient is not apneic but unconscious and is having difficulty in maintaining an adequate airway and showing signs of dyspnea the EMT-P may attempt to intubate.

**NOTE:**

In today's health care system, stroke is considered to be a treatable medical condition and great strides have been made in limiting the effects of stroke with the use of thrombolytics. With this in mind Regional Health Authorities are developing policies that outline how these patients are to be assessed and treated. EMS operators and personnel should contact their medical advisor to determine the process in your area. The algorithm below may assist you in assessing the patient.
Basic Life Support

Primary survey.
- Assess ABC’s
- Administer oxygen.

Secondary survey
- Reassure mother.
- Obtain pertinent medical and obstetrical history:
  - date of expected birth
  - onset of contractions
  - frequency and duration of contractions
  - membranes status (i.e., intact/ruptured)
  - number of pregnancies
  - length of previous labour
  - number of live births
  - chronic illnesses (i.e., seizures, cardiac problems, diabetes, etc.)
  - meconium staining.
- Visualize patient’s perineum.
  - If perineum is bulging or crowning, prepare to deliver baby.
  - If patient has had one or more normal deliveries and complains of urge to "push", "bear down", or "have a bowel movement", prepare to deliver baby.
  - If there are no visible signs of impending delivery, transport patient facing the attendant.
  - If complications are apparent (i.e., foot, hand, or cord visible or if severe vaginal bleeding). Transport immediately. (See Abnormal Delivery section of this protocol.)

The EMT-A/EMT-P may administer Entonox to the patient in active labour PRN.
The EMT who has completed the PCP bridge or the PCP trained EMT practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics, the practitioner may administer Entonox to the patient in active labour PRN.

NORMAL DELIVERY
- Allow delivery to progress spontaneously, secure OB kit and prepare mother for delivery.
- Suction baby’s airway, mouth followed by nose, with bulb syringe as soon as head is clear of birth canal.
- head and body as delivery proceeds. DO NOT PULL ON BABY.
- Reassure the mother continuously, keeping her informed of progress and instructing her to push with contractions and mouth breathe slowly.
- During the delivery process check position of cord.

When baby is delivered:
- Suction the mouth, followed by the nose.
- Stimulate crying by tapping soles of feet. If no spontaneous cry within one minute, suction again and begin resuscitation.
- Wrap baby in dry blanket and place on mother's abdomen.
- Clamp or tie umbilical cord approximately six inches from baby, place second clamp or tie approximately two inches closer to mother, cut between clamps or ties.
- Transport mother and infant.
- Monitor baby's respiratory/circulatory status carefully.
- Maintain body heat of baby and mother.
If placenta delivers spontaneously:

- Massage mother's lower abdomen until firm.
- Bring placenta to hospital.
- Place sterile pad over vaginal opening.
- Cover mother with clean bedding.

- **Should postpartum hemorrhage develop, or the mother becomes hypotensive, proceed to appropriate protocol and transport immediately.**

**ABNORMAL DELIVERY**

**BREECH**

Breech delivery is defined as: the presentation of the buttocks (breech) on the perineum as opposed to the head (Cephalic Presentation).

Management:

- Breech presentations are better handled in a health facility, so encourage the mother to breathe through contractions and transport urgently.
- If delivery is imminent preventing transport, prepare mother as usual for delivery.
- Administer oxygen and if an ALS provider, establish a large-bore intravenous line, or an IV Lock.
- NON-INTERFERENCE IS THE RULE!
- Allow the delivery of the baby up to the level of the umbilicus supporting the buttocks and trunk with the hand and volar surface of the arm, allowing the legs to deliver spontaneously – supporting the heels as they deliver to prevent tearing of the perineum.
- Once the umbilicus in visualized “gently” extract a 4-6 inch loop of the umbilical cord to allow continued delivery without excessive traction on the cord.
- If the anterior scapula is visible but the arms appear stuck and do not deliver spontaneously, with a gentle movement, rotate the fetal body 180° with the back towards the maternal front. The posterior arm will rotate anteriorly bringing it under the pubic bone. This will aid delivery.
- Let the baby hang with gravity for 20 seconds. This allows the head to flex into the pelvis.
- As the head delivers, the body should be extended, by lifting it up over the mother's abdomen. As the mouth appears, suck out the pharynx with a bulb suction device. Continue extending over the abdomen until the head delivers. YOU ARE AIDING AND FACILITATING delivery of the head. DO NOT actively pull on the baby.
- If the head does not delivery in 4 to 6 minutes, insert a gloved hand into the vagina to create an airway for the baby, ensuring that you do not compress the umbilical cord. TRANSPORT IMMEDIATELY – DO NOT REMOVE HAND.
PROLAPSED CORD

- Place mother in Trendelenburg or knee/chest position, instruct the mother to pant with each contraction to prevent bearing down.
- Administer oxygen.
- Insert gloved hand into vagina and gently push baby's head off of the cord. In performing this procedure, ensure that your hand is not compressing the cord.

TRANSPORT IMMEDIATELY. DO NOT REMOVE HAND UNTIL RELIEVED BY HEALTH CARE FACILITY STAFF.

MULTIPLE BIRTHS

- While unusual, be alert for the possibility and stay with patient.
- Delivery as above.

HEAVY VAGINAL BLEEDING FOLLOWING DELIVERY

- Control bleeding - massage lower abdomen firmly.
- Treat for shock
- Transport immediately.
- Notify health care facility enroute.

The EMT-P may:

Administer Syntocinon for post partum hemorrhage (ensure the patient is not a candidate for multiple births).

NOTE:

1. Consider the possibility of pregnancy in any female of child bearing age with complaints of vaginal bleeding, menstrual cycle irregularity, abdominal pain or low back pain not associated with trauma.
2. If cord is around baby's neck during delivery, slip cord over baby's head to avoid strangulation of baby. If the cord is too tight and cannot be slipped over the baby's head, clamp and cut the cord.
3. The greatest risks to the newborn infant are airway obstruction and hypothermia. KEEP BABY WARM, AND DRY and KEEP AIRWAY SUCTIONED WITH BULB SYRINGE.
4. Greatest risk to the mother is postpartum hemorrhage; watch closely for signs of hypovolemic shock and excessive vaginal bleeding. Treat for shock, if necessary.
5. When using bulb syringe to suction infant, remember to squeeze bulb prior to insertion in baby's mouth or nose.
6. In instances where delivery is not proceeding normally and in which the mother displays sudden onset of severe abdominal pain and shock, place on high flow oxygen, treat for shock, and transport immediately. Notify health care facility enroute.
7. Spontaneous or induced abortions may result in copious vaginal bleeding. Reassure the mother, provide emotional support, treat for shock and transport rapidly. Notify health care facility enroute. Bring fetus or any tissue passed to health care facility with patient.

When in a service area where EMT-A or an EMT-P practitioner is available, if the patient’s condition deteriorates, arrange an ALS intercept.

Revised October, 2012
Basic Life Support:
Primary survey

- Protect airway, perform ABC’s.
- Suction secretions, as needed and turn patient on their side to maintain proper airway management.
- Administer oxygen.
- Maintain airway support if needed using BVM.
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so.
- If cardiac arrest or other problems develop, refer to appropriate protocols.

Secondary survey.

Conscious, alert patient:

Swallowed poisons:

- Identify substance ingested.
- Estimate quantity ingested.
- Call Saskatchewan Poison Centre (SPC) **1-866-454-1212**.

- If recommended by a poison control, administer 25 g of activated charcoal if the patient is conscious with an intact gag reflex. **Do not** administer to a patient who has ingested a caustic substance.

Inhaled poisons:

- Remove patient to fresh air.
- Administer oxygen.
- Identify substance inhaled.
- Estimate duration of exposure.
- Call SPC and treat as per their recommendations.

Poison on skin:

- Wear gloves, gown and mask when dealing with pesticide poisoning or when type of chemical on the skin is unknown.
- Identify contaminant.
- Call SPC.
- Remove contaminated clothing and flush skin with water for 20 minutes; wash gently with soap, water and rinse.
- If contaminant is dry powder, brush off before washing.
- Treat as per SPC recommendation.
- Once at the receiving health care facility, remove gloves, mask and gown and place into a double plastic bag that is then sealed and identified by the receiving staff.
Poison in the eye:

- Flood with lukewarm water continuously for at least 20 minutes. Have patient blink frequently during irrigation.
- Identify contaminant.
- Call SPC and treat as per their recommendations.

Unconscious or semiconscious patient:

- Support respiratory effort, if indicated
- Administer oxygen.
- Obtain accurate history of incident:
  - Name of product or substance.
  - Quantity ingested, duration of exposure.
  - Time elapsed since exposure.
- Obtain a medical history; chronic illness, medical problems within the last 24 hours, medications.
- Transport patient on side.
- Do not administer oral agents unless it is on the advice of a physician.

NOTE:

When in a service area where an EMT-A or EMT-P service is available, if the patient's condition deteriorates, arrange an ALS intercept.

Advanced Life Support:

The **EMT-A** and/or **EMT-P** may:

- Start an IV of normal saline TKO if appropriate.

The **EMT-P** may proceed as follows if an opioid overdose is suspected as the cause:

- See Protocol MP6-Unconsciousness of Unknown Etiology, for the use of naloxone if appropriate.

NOTE:

1. When treating patients of inhaled or contact poisoning, precautions should be taken to protect yourself from exposure.
2. Bring product/substance and container to health care facility with patient.
3. Treat patient, not the poison.
4. Do not administer antidotes in the field; product label antidotes are frequently wrong.
Basic Life Support

Primary Survey:

- Perform ABC’s.
- Suction secretions, as needed and turn patient on their side to maintain proper airway management if required.
- Administer oxygen.
- Maintain airway support if needed using BVM.
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so.
- Prepare for cardiac arrest.
- Administer five teaspoons (25 grams) of activated charcoal and water if the patient is conscious with an intact gag reflex.
- Do not induce vomiting.
- Because of the potential toxicity of the cyclic antidepressants, all overdoses must be transported to health care facility.

Advanced Life Support

The EMT-A may proceed as follows:

- Start IV enroute to hospital with normal saline on all patients with a history of ingestion of > 500 mg in adults or 10 mg/kg in children.

B. REQUIRES DIRECT MEDICAL CONTROL

- Contact medical control to treat seizures according to protocol if they develop.
- For hypotension infuse normal saline to maintain blood pressure at 100 mmHg.

The EMT-P may proceed as follows:

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- If the QRS interval appears widened on the monitor obtain a strip and measure the QRS interval.
- For seizure activity treat according to protocol

B. REQUIRES DIRECT MEDICAL CONTROL

- If QRS interval > 0.10 seconds, administer 1 mEq/kg of sodium bicarbonate IV.
- Hypotension:
  - Administer Sodium Bicarbonate 1 mEq/kg IV while rapidly infusing normal saline.
- Ventricular arrhythmias.
MP10 CYCLIC ANTIDEPRESSANT OVERDOSE

PVCs: Treat as if present in conjunction with symptoms of ischemic heart disease.

V - Tachycardia: If hemodynamically stable, administer sodium bicarbonate 1 mEq/kg IV.

Pulseless Ventricular Tachycardia and Ventricular Fibrillation: Defibrillate immediately, followed by the administration of sodium bicarbonate 1 mEq/kg as soon as an IV is established.

- Hemodynamically unstable bradyarrhythmias:
  a) treat with transcutaneous pacing; and
  b) if the patient is intubated, hyperventilate in conjunction with the intravenous administration of sodium bicarbonate.

SPECIAL CONSIDERATIONS:

1. Sodium bicarbonate is not indicated in non-cyclic antidepressant overdoses.

2. Sodium bicarbonate cannot be given via an endotracheal tube.

3. In cases of cyclic overdose, if CPR has been initiated, it should be continued until a health care facility is reached.

4. Asymptomatic patients with normal QRS width and no ventricular arrhythmias do not require sodium bicarbonate IV.

When in a service area where EMT-A or an EMT-P practitioner is available, if the patient's condition deteriorates, arrange an ALS intercept.
Basic Life Support:

Primary Survey

- Assess ABC’s
- Provide supplemental oxygen as needed.
- If seizure activity is present on arrival gradually cool the child.
- If under 6 years of age, obtain a temperature by axilla using an non-glass digital thermometer. In cases where transport time to a health facility is greater than 30 minutes, a second temperature by axilla may be obtained.
- If over 6 years of age obtain an oral temperature may be obtained using a non-glass digital thermometer. In cases where transport time to a health facility is greater than 30 minutes, a second temperature by axilla may be obtained.

Advanced Life Support:

DOES NOT REQUIRE MEDICAL CONTROL:

The EMT-A/EMT-P may take a rectal temperature using a non-glass thermometer in the following circumstances:

- in the child under the age of six years who appears to be pyrexic,:;
  a) if the child is alert, not vomiting, and is not allergic to acetaminophen, "oral " acetaminophen can be given in the following dose:
    
    15mg/kg to a maximum dose of 320 mg
  
  b) if the child has a decreased level of consciousness, or is vomiting, acetaminophen should be given by rectal suppository.

- in the child under the age of six years who has experienced a grand mal seizure (febrile seizures occur in this age group only), if the axilla temperature is above 38° C, and the child is not allergic to acetaminophen, insert an acetaminophen suppository as follows according to weight.
  a) less than 10 kg - 120 mg acetaminophen suppository
  b) 10 – 20 kg - 160 mg acetaminophen suppository
  c) > 20 kg - 325 mg acetaminophen suppository

1. Acetaminophen suppositories will be administered after the EMT-A/EMT-P has donned gloves, gently push the lubricated suppository into the rectum.

2. Older children should lay on their side with the lower leg straight and the upper leg drawn toward the chest.

3. For infants and small children, while they are supine, flex the hips raising the knees up to the abdomen with one hand and then insert the lubricated suppository with the other hand.

4. Remember, temperatures by axilla are normally on degree lower than the oral temperature while temperatures taken rectally are one degree higher than oral temperatures.
Basic Life Support:
Assess situation.

a) **Evidence of immediate danger:**
   - Protect yourself and others.
   - Utilizing law enforcement should be considered if indicated by patient behaviour, and, if necessary, to render care.
   - Additional assessment and treatment as situation permits.

b) **No evidence of immediate danger:**
   - The EMT responsible for assessing, treating, and communicating with patient should remain with patient during transport.

Primary survey:
   - Perform ABC’s.
   - Assess and treat life-threatening injuries if possible.

Secondary survey:
   - Obtain and record pertinent medical history, if possible.
     a) Prescription or non-prescription medications.
     b) Underlying organic causes. (Brain tumour, hypoglycemia, etc)
     c) Previous psychiatric history
   - Transport patient.
     a) Transport patient in position of comfort, if not contraindicated by injuries.
     b) Keep environment as quiet as possible, do not use sirens unless indicated by injuries.
     c) If patient refuses transport see Refusal of Care protocol.

Advanced Life Support:
The **EMT-A** may proceed as follows with medical control:

The **EMT-P** may proceed as follows without medical control:

**INDICATIONS FOR THE USE OF MIDAZOLAM**

The markedly agitated patient who poses a threat to him/herself or others, midazolam may be administered to facilitate physical restraint or where the threat persists after the patient has been placed in physical restraints.
CONTRAINDICATIONS

1) hypersensitivity to midazolam
2) Relative contraindication in: Myasthenia gravis or other neuromuscular disorders; acute alcohol intoxication; severe, chronic obstructive pulmonary disease; and acute pulmonary insufficiency.

DOSAGE

Patients 14 to 60 years of age:

- 2 – 10 mg IM q 10 min prn if systolic BP > 100 mmHg to a max of 20 mg
- 2 mg IV titrated to effect q 5 min to a max of 20 mg

Any need for administration beyond the stated maximums requires contact with medical control.

SIDE EFFECTS

Intravenous midazolam may cause respiratory depression and/or respiratory arrest in some patients so airway management is of utmost importance.

SPECIAL CONSIDERATIONS

1. The Regional Medical Advisor will review each case where midazolam has been administered to insure its appropriate use.

INDICATIONS FOR USE OF HALOPERIDOL

The EMT-P may proceed as follows:

For patients who are clearly experiencing acute psychotic episodes in the absence of a history of seizures, head injury, the use of QT prolonging drugs (Tricyclic Anti-Depressants, Procainamide, Stemetil etc.), drug toxicity (use of Cocaine, etc) Haloperidol may be administered as follows:

DOSAGE

- 2.5 to 5 mg IM
- elderly or debilitated patients (ie. underlying cardiac disease) 1.0 to 2.5 mg IM
- do not inject intravenously
- do not use under the age of 12 years.

SIDE EFFECTS

- hypotension
- excessive sedation
- seizure activity (may precipitate seizure activity in previously controlled epileptics)
- dry mouth, blurred vision, "light headedness"
- respiratory depression

Occasionally extrapyramidal side effects may occur such as involuntary muscle activity (protrusion of the tongue, rolling of eyes, muscle rigidity, turning of neck, etc.) restlessness and anxiety. These side effects may be reversed with the administration of diphenhydramine as follows:
SPECIAL CONSIDERATIONS

1. Injection will be with a 21-gauge needle deep into the gluteal muscle.
2. Decanoic acid ester preparation (a long acting form of Haloperidol) is not to be used.
3. Safety in pregnancy has not been established. Only administer when in the opinion of the physician, the expected benefits of the drug outweigh the potential hazards to the fetus.
4. Peak clinical effect may not occur for up to 30 minutes.
5. Once patient has been sedated, place in physical restraints, if not already done. Patients placed in restraints in the prone position should be rolled on their side as soon as possible to minimize the risks of positional asphyxia.
6. Perform pulse oximetry if available.
7. Rule out treatable causes of acute agitation such as hypoxia and hypoglycemia prior to administration of haloperidol. If this is not possible because of extreme agitation, rule out these causes as soon as possible after the administration of haloperidol.
8. The Regional Medical Advisor will review each case where Haloperidol has been administered to insure its appropriate use.
9. Treat side effects as per the appropriate protocol. Abnormal muscle activity can be controlled rapidly by the administration of anticholinergic or antiparkinsonian drugs at the receiving health care facility.
10. Haloperidol is a potent anti-psychotic agent.

When in a service area where EMT-A or an EMT-P is available, if the patients condition deteriorates, arrange an ALS intercept.
Primary survey.

- Assess ABC’s.
- Place patient in a position of comfort.
- Initiate cardiac monitoring if trained to do so.
- If applicable treat for shock.

Secondary survey

- Obtain pertinent medical history including:
  a) onset, location, quality, duration and referral of pain;
  b) associated vomiting or nausea;
  c) date of last normal menstrual period, if applicable;
  d) last meal, flatulence, last bowel movement, blood in stools or emesis, etc.;
  e) medications taken and their effects;
  f) past medical and surgical history.

NOTE:

When in a service area where an EMT-A or EMT-P service is available, if the patients condition deteriorates, arrange an ALS intercept.

Advanced Life Support

The EMT-A or EMT-P may:

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- If patient is not hypotensive, IV may be instituted using Ringer's Lactate or normal saline TKO and monitor blood pressure. If abdominal aortic aneurysm is suspected but the patient is not hypotensive, start IV Ringer's Lactate or normal saline lactate TKO.
- If shock develops, transport immediately and start a second IV line of Ringer's Lactate or normal saline enroute. Both IVs should be infused "wide open," up to a maximum of 3,000 ml in adults or 40 ml/kg in children.
- If the patient becomes apneic and pulseless, the EMT-A and Paramedic should follow the necessary airway control and cardiac arrest protocols for their level of training.
- The EMT-P may administer 2-5 mg of morphine sulphate, slow IVP if the patient's abdominal pain has been diagnosed prior to event (i.e. renal colic, bowel obstructions, etc.)

B. REQUIRES DIRECT MEDICAL CONTROL

- Direct medical control is required to infuse IV fluid volumes that exceed 3,000 ml in adults or 40 ml/kg in children.
- The EMT-P must consult with medical control prior to the administration of morphine sulphate for NYD abdominal pain.
On occasion EMS providers may encounter patients who due to treatments provided or clinical condition become distressed resulting in nausea and vomiting.

**Basic Life Support:**
- Assess the patient to identify the cause of nausea
- Allow patient to maintain position of comfort and prepare for emesis
- Provide high flow oxygen via nasal cannula
- Transport to hospital

**Advanced Life Support**

**DOES NOT REQUIRE DIRECT MEDICAL CONTROL**

The **EMT-A/EMT-P** may proceed as follows:
- Using an 1 ml ampoule containing 50 mg of dimenhydrinate administer as follows:
  - Dilute each 0.1 (5 mg) of dimenhydrinate with 1.0 ml of normal saline prior to injection.
  
<table>
<thead>
<tr>
<th>Age</th>
<th>Dosage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 12 yrs</td>
<td>50 mg over 2 minutes</td>
</tr>
<tr>
<td>Under 12 yrs</td>
<td>1.0 mg/kg over 2 min, not to exceed 50 mg</td>
</tr>
</tbody>
</table>

**IM Gravol:**
- Over 12 yrs: 50 mg q4hrs
- 8 – 12 years: 25 – 50 mg q8 hrs
- 6 – 8 years: 12.5 – 25 mg q8hrs

**SPECIAL CONSIDERATIONS:**
- Dimenhydrinate is contraindicated in patients with a known allergy to it.
- Dimenhydrinate should be used cautiously (in smaller doses, or by slower injection) in patients with:
  - Glaucoma, COPD/asthma, prostatic hypertrophy, patients who are intoxicated
  - Patients with decreased levels of consciousness
- The most common side effect of dimenhydrinate is sedation. Rarely hallucinations and delirium have been reported.
- Dimenhydrinate cannot be injected into an IV line containing:
  - Aminophylline
  - Phenytoin
  - Barbiturates
  - Hydrocortisone
  - Promazine

- The administration of oxygen may also help reduce nausea and vomiting.
- It is generally not recommended that IV dimenhydrinate be administered to patients with a head injury as it may result in a decreased level of consciousness. However, for those patients who are completely C-spine immobilized on a back board, emesis may result in aspiration and obstruction of the airway. Therefore, IV dimenhydrinate may be indicated to protect the upper airway in these patients.
**Severe Sepsis/Septic Shock**

**Assessment**
- Vital signs
- Check blood glucose
- Temperature

**Manage airway, ventilate if needed**
- High flow O2
- ECG – if trained to do so
- Treat for Shock

**Septic Shock**
Defined by:
1. Presence of Systemic Inflammatory Response Syndrome (SIRS)
2. Suspected infection
3. Signs of hypoperfusion (hypotension)

**SIRS criteria:**
- HR > 110
- RR > 24
- Temp > 100.4

The initial treatment of septic shock involves maximizing perfusion with IVF boluses, not vasopressors.

**Patients demonstrating any TWO of the following:**
- Temperature (oral/ temporal) > 38°C or <36°C
- Heart rate > 90 / minute
- Respiratory rate > 20 / minute

**plus at least one of the following:**
- Hypotension: SBP < 90 mmHg
- Hypoxemia: SpO2 < 90% on room air
- Mottled skin, capillary refill > 3 seconds
- Altered mental state or restlessness and anxiety
- Immunocompromised

**-12/15 Lead**
- Establish 2 peripheral IV lines (do not delay transport)
- Initiate IV Fluid bolus of NS 20-40 ml/Kg repeat every 10 minutes to maintain BP 90-100 mmHg or peripheral perfusion (presence of radial pulse).
- Monitor HR, BP and auscultate lungs frequently

**Is the patient pyrexic?**

**Yes**
- In pediatrics refer to the appropriate treatment protocol.
- In adult patients (age > 12 years old) administer acetaminophen 325 mg by either oral or rectal suppository.

**Requires medical control**
- If fluid challenge fails to restore adequate blood pressure or if hypotension is life threatening during fluid resuscitation consider a vasopressor as decided upon by your regional medical advisor, to support end-organ perfusion (e.g. norepinephrine, dopamine).
- Administer broad spectrum IV antibiotics as decided upon by your regional medical advisor (e.g. cefotaxime 2g IV over 3-5 minutes).

**Notify receiving facility of sepsis alert**
- Do not delay transport
- If applicable follow your region’s sepsis alert plan

EMS Practitioners must have successfully taken and completed an educational/teaching module approved by the Saskatchewan College of Paramedics prior to using this protocol.
Basic Life Support

Primary Survey.

- Assess ABC’s
- Deliver oxygen by non-rebreathing mask at 10-15 L / minute
- Maintain airway support if needed using BVM if required
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so

Secondary Survey.

- Treat for shock
- Check Blood Glucose levels and treat accordingly
- Obtain and record vital signs

NOTE:

When in a service area where ICP or ACP service is available, if the patients condition deteriorates, arrange an ALS intercept. However DON’T DELAY TRANSPORT.

Advanced Life Support

DOES NOT REQUIRE MEDICAL CONTROL:

Recognition of Sepsis

- Every patient with suspected infection shall be screened for sepsis, severe sepsis and septic shock during the initial assessment.
- Patients demonstrating any TWO of the following:
  
  o Temperature (oral/ temporal) > 38°C or <36°C
  o Heart rate > 90 / minute
  o Respiratory rate > 20 / minute

plus at least one of the following:

  o Hypotension: SBP < 90 mmHg
  o Hypoxemia: SpO2 < 90% on room air
  o Mottled skin, capillary refill > 3 seconds
  o Altered mental state or restlessness and anxiety
  o Immunocompromised

should be considered to have severe sepsis / septic shock
The EMT-A/EMT-P will:

- Check Blood Glucose levels and treat accordingly
- Initiate cardiac monitoring and obtain a 12 lead
- Establish at least 2 peripheral IV lines. One with a Macro bore saline lock. Follow appropriate treatment protocols if peripheral IV access is unattainable.
- Initiate IV fluid bolus of Normal Saline 20 ml/Kg repeated every 10 minutes to maintain a blood pressure between 90 – 100 mmHg or peripheral perfusion (presence of radial pulse).
- Monitor heart rate, BP and auscultate lungs sounds frequently.
- Withhold fluid if patient develops signs of acute CHF

If the patient is pyrexic:

- In pediatrics refer to the appropriate treatment protocol.

- In adult patients (age > 12 years old) administer acetaminophen 325 mg by either oral or rectal suppository, depending on patient presentation and the patient is not allergic to acetaminophen.

**REQUIRES DIRECT MEDICAL CONTROL**

The EMT-P will:

- Initiate broad spectrum IV antibiotics within the first hour of identification. This should be settled on by your regional medical advisor. (eg. Cefotaxime 2g IV over 3-5 minutes).
- Start vasopressors if the appropriate fluid challenge fails to rapidly restore adequate blood pressure and perfusion or if hypotension is life threatening during the process of fluid resuscitation. This should be settled on by your regional medical advisor (eg. **Norepinephrine** will increase peripheral vascular resistance and have less effect on heart rate and stroke volume. Initiate Norepinephrine 10 mcg/min and titrate to keep SBP > 90 mmHg, or **Dopamine** will increase MAP and cardiac output through increased stroke volume and heart rate. Initiate Dopamine 5 – 10 mcg/kg/min. Titrate to keep SBP > 90 mmHg.)

**General Considerations**

- Do not delay antibiotics; make it a priority once vascular access is established.
- In pediatrics, maintain a blood pressure adequate for their age. **USE OF THE BRASLOW TAPE IS REQUIRED IN CHILDREN.**
- Immunocompromised patients include but are not limited to those on glucocorticoids, chemotherapy, disease-modifying antirheumatic drugs, immunosuppressive drugs after organ transplants, many types of Cancer, MRSA+, AIDS and HIV.
TRAUMA PROTOCOLS

TP1  Head/Neck/Spinal Trauma
TP2  Chest Trauma
TP3  Abdominal Trauma
TP4  Musculoskeletal Trauma
TP5  Shock Trauma
TP6  Burn Trauma
TP7  Amputation Trauma
TP8  External Bleeding
TP9  Multiple Trauma
TP10 Near Drowning
TP11 Sexual Assault
TP12 Electrical Shock
TP13 Hypothermia
TP14 Heat Injuries
TP15 Cyanide Poisoning
TP16 Organophosphate / Carbamate Poisoning
TP17 ITLS Trauma Survey
TP18 Spinal Assessment/Clearance

SCOPE OF PRACTICE

GENERAL PROTOCOLS

TREATMENT PROTOCOLS

CARDIAC

MEDICAL

TRAUMA

INTER-FACILITY TRANSFER PROTOCOLS

INDEX
TP1       Head/Neck/Spinal Trauma

BASIC LIFE SUPPORT

Primary Survey.

- **DO NOT HYPEREXTEND THE NECK.**
  - The patient should receive 100% oxygen. If a BVM is required, bag at a rate of 8-10 breaths per minute or 1 breath every 6-8 seconds. Maintaining the SaO2 95% is optimal. If you have end tidal CO2 monitoring, CO2 levels between 35 and 40 mmHg is optimal for these patients.
  - **Hyperventilation** (16-20 breaths per minute) is no longer recommended in head injured patients without clear signs of cerebral herniation syndrome and only after correcting hypotension and hypoxia.
  - Stabilize head, neck and spine manually until secured with an appropriate immobilization device.

Secondary Survey.

- Observe for presence of cerebrospinal fluid from nose, ears, mouth.
- Repeat and record vital signs and pupil reactions every five minutes.
- Immobilize the patient's head, neck and spine to a long spine board and/or scoop stretcher, or the appropriate immobilization device, with sufficient security that integrity of the spine is maintained. (SEE NOTE #3)
- Treat for shock if required.
- If vital signs are stable, search for and treat other injuries.
- Prevent aspiration.
- Ensure patient is immobilized securely to facilitate turning on side in the event that the patient vomits. Turn only as required (ie; if vomiting or other aspiration threats are present). Once the threat has diminished, return to the supine position and realign as required, observe for recurrence of threat.
- Suction secretions.

Obtain and record vital signs every five minutes. See neurological flow sheet on reverse side of the PCR form.

**NOTE:**

1. When in a service area where an EMT-A or EMT-P service is available, **if the patients condition deteriorates**, arrange an ALS intercept.
2. Some patients with respiratory diseases such as Chronic Obstructive Lung Disease, will experience further respiratory compromise when subjected to supine immobilization on a spineboard. In these rare situations, you may need to immobilize the patient using the K.E.D. and placing in a semi-sitting position on the stretcher.
3. Not all patients will be able to place the back of their head onto a spineboard due to pre-existing conditions such as ankylosing spondylitis. Therefore, padding may be required under the occiput in these cases. While less than ideal, this will facilitate easier handling of these patients. Motor and sensory assessments should be performed before and after immobilization as usual.
**Advanced Life Support**

**A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL**

- Head trauma patients may require initiation of an IV TKO.
- Hypotension in severe head injury (GCS <8) is rare (5% of patients). The injured brain does not tolerate hypotension and these patients require enough of fluid to maintain the systolic blood pressure at 120 mmHg resulting in 60 mmHg of cerebral perfusion pressure to sustain life.
- Children with severe TBI should have their blood pressure maintained at normal range for their age.
- Spinal precautions should be taken.
- If the patient is apneic, insert a Combitube\LMA\King LTA with a minimum of neck manipulation and the patient should be ventilated with 100% oxygen at a rate of 8-10 ventilations per minute.

**Note:**

- If the patient is apneic the **EMT who has** completed the PCP bridge or the PCP trained EMT may insert a King LTA device if the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics.

**The EMT-P:**

- If the patient is apneic the EMT-P may intubate.
Basic Life Support

Primary survey:

- Correct hypoxia:
  a) Administer high flow oxygen and assist ventilation if required.
  b) Seal open chest wound with occlusive dressing taped on three sides to create a one way valve.
  c) If possible place the patient in the position that provides greatest respiratory effect with the least amount of effort. Patients who are dyspneic, and won't or are unable to lie down, should be placed in a KED for spinal immobilization and allowed to sit up.

Secondary survey:

- Stabilize rib fracture or flail segment by positioning the patient on injured side, or by supporting injury with sand bags.
- Impaled objects should be stabilized and left in place.
- Do not wrap tape, tensor bandage, or similar device around a patient's chest to control pain.
- Treat for shock.

  The EMT who has completed the PCP bridge or the PCP trained EMT may insert a King LTA device if the patient is apneic and the practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics.

  When in a service area where EMT-A or Paramedic service is available, if the patients condition deteriorates, arrange an ALS intercept.

Advanced Life Support

The EMT-P/EMT-A may proceed as follows:

- If the patient is apneic, the EMT-P/EMT-A may insert a Combitube/LMA/King LTA as per protocol and ventilate with high flow supplemental oxygen.
- All chest trauma patients should have an IV initiated at rate that maintains blood pressure at a level of 90 mmHg systolic. If clinical signs of shock develop, proceed as appropriate.

The EMT-P may proceed as follows:

- If the patient is apneic, the EMT-P may intubate as per protocol and ventilate with high flow supplemental oxygen.
- All chest trauma patients should undergo cardiac monitoring. If cardiac dysrhythmias develop, proceed to the appropriate protocols.
- All chest trauma patients should have an IV initiated at rate that maintains blood pressure at a level of 90 mmHg systolic. If clinical signs of shock develop, proceed as appropriate.

The EMT-P may perform the following:

- If a tension pneumothorax develops, perform a needle thoracostomy in the second intercostal space in the mid-clavicular line or in fourth or fifth intercostal space in the midaxillary line.
NOTE:

1. Bilateral chest expansion and possible paradoxical respirations should be included in assessment.

2. Check for tracheal deviation, subcutaneous emphysema, and jugular venous distension (JVD).

3. If not contraindicated, the patient should be allowed to seek position of comfort.

4. Continually assess respiratory status. Watch closely for signs of developing tension pneumothorax. If this should occur, in a patient with an open chest wound, release the seal over the wound during expiration and allow the trapped air to escape, then during inspiration reseal the wound dressing on three sides. If patient's condition declines after sealing, release seal immediately.

5. Endotracheal tube placement must be checked prior to the thoracostomy as this is the most common cause of unilateral breath sounds. Other signs must be present to confirm the presence of a tension pneumothorax i.e. displaced trachea, subcutaneous emphysema, increased airway resistance when bagging.
Basic Life Support

Primary survey:

- Perform ABC’s.
- Suction secretions, as needed.
- Administer high flow oxygen and assist ventilation if required.
- Maintain airway support if needed using BVM.
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so

Secondary survey:

- Treat for shock, if indicated and ensure the patient is kept warm.
- Immobilize patient, if indicated.
- Abdominal wounds or eviscerations should be covered with saline soaks and then an occlusive dressing slowly sealed over the entire sight.
- The patient with a traumatic evisceration should be placed in a position, which prevents possible strangulation of the exposed viscera, by muscle tension around the wound. Depending on the nature of the injury, in most cases, this may be accomplished by raising the lower extremities or bending the knees.

NOTE:

a) If injury is high in the abdomen, consider the possibility of chest injury.
b) Injury to the abdomen may cause vomiting, protect the airway.
c) When in a service area where an EMT-A or EMT-P service is available, if the patient’s condition deteriorates, arrange an ALS intercept.

Advanced Life Support

The EMT-A/EMT-P may proceed as follows:

- In adults, administer enough normal saline to maintain a systolic blood pressure between 90 - 100 mmHg, or peripheral perfusion (defined as the presence of a radial pulse).
- In children, maintain a blood pressure adequate for their age. **USE OF THE BROWSLOW TAPE IS REQUIRED IN CHILDREN.**
- If a fluid bolus is required administer at a rate of 20 ml/Kg in both adults and children.
- If the patient requires and advanced airway insert appropriate device according to scope of practice.
Basic Life Support

Primary survey:

- Perform ABC’s.
- Suction secretions if needed.
- Administer high flow oxygen and assists ventilation if required.
- Maintain airway support if needed using BVM.

Secondary survey:

- Protect injury site from excessive movement.
- Check pulses and sensation distal to injury.
- If no resistance is met, align to position of normal function with gentle traction and immobilize. Recheck pulses and sensation distal to injury following immobilization. Dislocations and fractures involving joints should be splinted in the position found.
- If required treat for shock.
- Elevate injured limb, if possible. Apply cold packs to injury site when practical.
- For pain associated with musculoskeletal injuries, the preferred treatment is splinting the extremity(s). If extrication is required, Nitronox may be administered for pain control.
- For pain associated with musculoskeletal injuries, the preferred treatment is splinting the extremity(s).
- If the EMT who has completed the PCP bridge or the PCP trained EMT practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics on the administration of entonox, the practitioner may administer entonox to patients that require extrication.

Advanced Life Support

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

The EMT-A/EMT-P may proceed as follows:

- If extrication is required, Nitronox may be administered for pain control.
- All patients with fractures to the pelvis or femur should have an IV initiated TKO.
- In adults, if shock is present, administer enough normal saline to maintain a blood pressure between 90 - 100 mmHg, or peripheral perfusion (defined as the presence of a radial pulse).
- In children, maintain a blood pressure adequate for their age. USE OF THE BROSELOW TAPE IS REQUIRED IN CHILDREN.
- If a fluid bolus is required administer at a rate of 20 ml/Kg in both adults and children.

The EMT-P may proceed as follows:

- If extrication is required, the paramedic may choose to use either Nitronox or morphine for pain control as circumstances and patient condition dictate.

Adult Dosage:

- Draw up in a 10-12 ml syringe, 10 mg (1ml) of Morphine with 9 ml of Normal Saline or Ringers Lactate. (This results in a concentration of 1mg/ml of solution)
- Inject 2-5mg (2-5ml) of solution at a time, slow IVP; titrate to effect, keeping mindful of the patient’s vital signs.
Pediatric Dosage:

- 0.1 mg/kg SQ/IM or IV, maximum dose is 2.5 mg Q 15 minutes. A Broselow Tape must be used if the weight is uncertain.

SPECIAL CONSIDERATIONS

Nitronox is contraindicated in the following circumstances:

- Head injury with impaired consciousness
- Inebriation
- Heavily sedated (i.e. overdose, street drugs)
- Severe facial injuries
- Inability to follow the instructions (too young, mentally challenged, senile, injury to both hands)
- Pneumothorax
- Decompression sickness.

NOTE:

1. Make sure the OBVIOUS injury is the ONLY injury.
2. Absence of pulse distal to major fractures and dislocations is regarded as an orthopedic emergency and should be transported immediately.
3. Always monitor neurologic function and pulse distal to the fracture.
4. Hip dislocations are difficult to splint and are more correctly padded and supported.
5. Care should be given in handling and splinting of patients with suspected fractures or dislocations that may be close to or include joints.
6. Severely reduced capillary refill time, should be an indication of absence of pulse and in such cases, transport should become a priority.

When in an area where EMT-A or EMT-P is available, if the patients condition deteriorates, arrange an ALS intercept.

INDEX
TP5

Basic Life Support

Primary survey.

- Perform ABC's.
- Administer oxygen.
- Maintain airway support if needed using BVM if required.
- Initiate cardiac monitoring and obtain a rhythm strip if trained to do so

Secondary survey.

- Treat for shock
- Obtain and record vital signs every five minutes.

Shock is indicated by the presence of the following:

- restlessness and anxiety, progressing to lethargy;
- cool, clammy, pale skin;
- nausea;
- cyanosis (peripheral, perioral);
- rapid shallow respiration progressing to slow, laboured respirations;
- pulse thready and greater than 100 per minute in an adult, 120 in a school aged child, 140 in a preschooler and 160 in an infant;
- decrease in level of consciousness; and/or
- decreasing blood pressure less than 90 mmHg systolic in adults.

NOTE:

1. When in a service area where EMT-A or Paramedic service is available, if the patients condition deteriorates, arrange an ALS intercept.

Advanced Life Support

- In adults, if shock is present, administer enough normal saline to maintain a blood pressure between 90 - 100 mmHg, or peripheral perfusion (defined as the presence of a radial pulse).
- In children, maintain a blood pressure adequate for their age. USE OF THE BROSELOW TAPE IS REQUIRED IN CHILDREN.

If a fluid bolus is required administer at a rate of 20 ml/Kg in both adults and children.

- An infusion cuff should be used to increase the IV flow rate.
- If dysrhythmia develops, proceed to appropriate protocol.
- The IVs should be established enroute unless:
  a) there is delay in extrication of the patient;
  b) airway management during transportation will not allow for IV initiation;
  c) in patients with "controlled hemorrhage" where ongoing blood loss will not be a problem; or
  d) transport time of greater than 30 minutes in length.
The **EMT-P** may carry out the following procedure:

- Percutaneous cannulization of the external jugular vein may be carried out if the following criteria are met:
  
  a) This route is only to be used for the administration of drugs or volume replacement in patients with hypovolemic shock where cannulization of a peripheral vein is not possible or has not been successful.

  b) Cannulization of the external jugular vein will occur en route to the health care facility unless an exception is present as described previously for peripheral IV initiation.

  c) Whenever this procedure is carried out it must be documented on the PCR form, including unsuccessful attempts.
TP6

Burns

Basic Life Support

FLAME

ENSURE YOUR OWN SAFETY AND SAFETY OF BYSTANDERS.

- Stop burning process.

Primary survey.

- Administer high flow oxygen and assist ventilation if required.
- Apply a clean, dry, non-adherent dressing to the burned area.

Secondary survey.

- Estimate depth of burn and percent of body surface area injured.
- Treat for shock if indicated.
- Cold compresses should not be used for pain control in a burn which is greater than twenty percent body surface area (BSA). Use "The Rule of Nines" chart to determine BSA involved.
- Remove jewellery from any extremity which has been burned.
- Do not apply any ointment to the burn.
- Place patient between dry, clean sheets and prevent burned surfaces from coming in contact with one another.
- Obtain and record vital signs every five to fifteen minutes dependent on extent of injury.

CHEMICAL

- ENSURE YOUR OWN SAFETY BY WEARING PPE, AND SAFETY OF BYSTANDERS.
- Remove contaminant
- Perform primary survey.

Chemical on skin:

a) Remove contaminated clothing and flush skin with water for 20 minutes.
b) If contaminant is a dry powder, brush off before flushing skin.
c) Identify contaminant.
d) See Poisoning.

Chemical in the eye:

a) Flood with lukewarm water or normal saline for 20 minutes; have patient blink frequently during irrigation.
b) Identify contaminant.
c) See Poison Protocol.

Perform Secondary survey.
ELECTRICAL

- Eliminate electrical contact. **ENSURE YOUR OWN SAFETY AND SAFETY OF BYSTANDERS.**
- · Primary survey.
  - Administer oxygen.

Secondary survey.

- Identify entry and exit wounds.
- Treat for shock if indicated.
- Place patient between clean sheets.
- Obtain vital signs every five minutes.
- Prepare to manage possible respiratory or cardiac arrest.
- Notify health care facility enroute.

**BLS Considerations**

1. When responding to a scene involving fire, chemical spills, or electrocution, your **FIRST** priority must be your own safety.
2. Thermal injury patients frequently develop hypothermia and/or shock symptoms.
3. Be alert for progressing airway problems in patients who have burns involving face, head, neck or chest.
4. Be alert for smoke inhalation.
5. All ambulance units should have a supply of saline on board.
6. Fractures due to muscle contraction may occur in incidents of electrical shock.
7. Elevate burned limb(s) if possible. Position patient according to injury.
8. Wet dressing may be applied if the burn is less than 20%. If above 20% apply a dry, clean dressing or burn sheet.

When in a service area where EMT-A or Paramedic service is available, **If the patients condition deteriorates**, arrange an ALS intercept.

**RULES OF NINE**
Basic Life Support

If the EMT who has completed the PCP bridge or the PCP trained EMT practitioner has successfully completed a teaching module approved by the Saskatchewan College of Paramedics on the administration of entonox, they should consider the use of entonox PRN on patients with first and second degree burns, so long as no contraindications exist.

Advanced Life Support

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- Initiate an IV of ringer's lactate or normal saline at a rate of 200 ml per hour for the following burns (TK0 in children under 12 years until medical control is obtained):
  a) Second degree involving fifteen percent or more of the body.
  b) All third degree burns and burns involving the face and/or airway.

- Consider shock protocol for burns involving other traumatic injuries.

The EMT-A and EMT-P may proceed as follows:

- If the patient is unable to maintain their airway or is in danger of losing their airway, the EMT-A/EMT-P may perform an advanced airway procedure based on their scope of practice.
- Consider transport directly to a burn treatment centre.
- The EMT-A should consider nitronox prn for first and second degree burns unless contraindicated.
- The EMT-P may administer morphine as follows:

Adult Dosage:

- Infuse into an IV line containing Normal Saline or Ringers Lactate only.
- draw up in a 10-12 ml syringe, 10 mg (1ml) of Morphine with 9 ml of Normal Saline or Ringers Lactate. (This results in a concentration of 1mg/ml of solution)
- inject 2-5mg (2-5ml) of solution at a time, slow IV push (no faster than 2mg(2mls)/minute) titrated to effect, keeping mindful of the patient's vital signs.

Pediatric Dosage:

- 0.1 mg/kg subcutaneously or IV, maximum dose is 2.5 mg Q 15 minutes.
- A Broselow Tape must be used if the weight is uncertain.
SPECIAL CONSIDERATIONS

1. Nitronox is contraindicated in the following circumstances:
   - head injury with impaired consciousness
   - inebriation
   - heavily sedated (i.e. overdose, street drugs)
   - severe facial injuries
   - inability to follow the instructions (too young, mentally challenged, confused, injury to both hands)
   - pneumothorax
   - decompression sickness.

IVs should preferably be started in non-burned tissue. However, if this is not possible, the IV may be placed in burned tissue.

The EMT who has completed the PCP bridge or the PCP trained EMT may only administer entonox on patients following successful completion of a teaching module approved by the Saskatchewan College of Paramedics
TP7

Amputation Trauma

Basic Life Support

Primary Survey.

- Stop blood flow and locate amputated part(s).
- Administer high flow oxygen.

Secondary Survey

- Treat for shock.

Care of amputated part:
  a) Rinse the part gently with normal saline to remove loose debris; do not scrub.
  b) Wrap and package amputated part(s) for transport, using sterile dressings, wraps and cooling as required.
  c) Place wrapped part into plastic bag and seal with tape. **DO NOT POUR FLUID INTO BAG.** Label with name, date, and time.
  d) Place plastic bag into container filled with ice and water. **DO NOT USE DRY ICE.** Label with name, date, and time.
  e) Record the time of the incident and the approximate elapsed time before the part was protected by ice. Tissue deteriorates rapidly under normal temperatures and this information may be useful to the physician in estimating the possible damage and the prognosis for reattachment.

For relief of pain associated with an amputation injury, the **EMT who has completed the PCP bridge or the PCP trained EMT practitioner** who has successfully completed an approved teaching module on the administration of entonox, may administer entonox PRN if not contraindicated.

Advanced Life Support

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- In adults, if shock is present, administer enough normal saline to maintain a blood pressure between 90 - 100 mmHg, or peripheral perfusion (defined as the presence of a radial pulse).
- In children, maintain a blood pressure adequate for their age. **USE OF THE BROSELOW TAPE IS REQUIRED IN CHILDREN.**
- The **EMT-A** and **EMT-P** may administer Nitronox PRN if not contraindicated.

If a fluid bolus is required administer at a rate of 20 ml/Kg in both adults and children.

The **EMT-P** may consider the use of morphine 2-5mg SIVP at a time (titrated to effect), however caution should be used as patients can lose large amounts of blood with amputations.

SPECIAL CONSIDERATIONS

Nitronox and/or morphine is contraindicated in the following circumstances:

- head injury with impaired consciousness
- inebriation
- heavily sedated (overdose, street drugs)
- severe facial injuries
- inability to follow the instructions (too young, mentally challenged, senile, injury to both hands)
- pneumothorax
- decompression sickness.
NOTE:

a) Be sure the **OBVIOUS** injury is the **ONLY** injury.

b) Most extremity parts can be reattached (ie; arm, ear, finger, foot, hand, leg, nose, penis, and scalp.

c) Optimal results are obtained when reattachment occurs within a few hours of injury.

d) While speed is important, care must be taken to ensure total patient assessment and safety for all concerned during transport.

e) Be sure amputated parts accompany the patient, if possible.

f) When in a service area where an EMT-A or EMT-P service is available, if the patient condition deteriorates, arrange an ALS intercept.
**Basic Life Support**

Primary survey

- Control bleeding.
  a) Apply dressing with direct pressure and elevate the bleeding site.
  b) If bleeding persists, apply pressure dressings as needed in layers. Never remove a pressure dressing once applied.
  c) Immobilize impaled objects securely.
- Administer oxygen per mask.
- Assess the patient and treat for shock.

Secondary survey.

- Use a tourniquet as a last resort. If a tourniquet is applied, the symbol Tq or Tk should be written on the patient's forehead with a marking pencil to indicate the application of a tourniquet.

**Advanced Life Support**

The EMT-A and EMT-P may initiate an IV based on patient's condition and circumstances. If a fluid bolus is required administer at a rate of 20 ml/Kg in both adults and children.

**NOTE:**

1. When in a service area where an EMT-A or EMT-P service is available, if the patients condition deteriorates, arrange an ALS intercept.
2. Impaled objects in the cheek may be removed and pressure applied from both sides to ensure a patent airway.
Multiple Trauma

Basic Life Support

Primary Survey.

- Administer oxygen.
- Manually immobilize head, neck and spine until secured on appropriate device.

Secondary Survey.

- Treat for shock
- Dress major open wounds.
- Splint major fractures.
- Be prepared to turn patient on side if needed.

Advanced Life Support

- The EMT-A and EMT-P should proceed to appropriate protocols for patient’s condition and circumstance.
- The EMT-A and EMT-P may initiate an IV based on patient’s condition and circumstances. If a fluid bolus is required administer at a rate of 20 ml/Kg in both adults and children.

NOTE:

1. Mechanism of injury must be observed and carefully recorded.
2. Consider load and go.
3. When in a service area where EMT-A or an EMT-P is available, if the patient’s vitals are unstable or if the patients condition deteriorates, arrange an ALS intercept.
Near Drowning

Basic Life Support

- Clean the airway and suction appropriately.
- Place patient in recovery position and administer oxygen.
- Assist ventilations as required.
- Initiate cardiac monitoring if trained to do so.
- If patient is in cardiac arrest initiate CPR and proceed to appropriate protocols.
- If the patient is apneic the EMT who has completed the PCP bridge or the PCP trained EMT * may insert a King LT airway device.

When a BLS service is in a service area where EMT-A or Paramedic service is available, if the patient condition deteriorates, arrange an ALS intercept.

Advanced Life Support

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- Establish an IV of normal saline at TKO rate.
- If a dysrhythmia is present, proceed to the appropriate protocols.
- If in bronchospasm, administer salbutamol as per Asthma/COPD protocol.

The EMT-A/EMT-P may proceed as follows:

- If the patient is apneic insert a Combitube\LMA\King LTA, suction and ventilate at 16-20 bpm.

The EMT-P may proceed as follows:

- Intubate if the patient is apneic, suction appropriately and ventilate at 16-20 bpm.

*The EMT who has completed the PCP bridge or the PCP trained EMT may only insert a King LT airway device following successfully completion of a teaching module approved by the Saskatchewan College of Paramedics
**Basic and Advanced Life Support**

**Primary survey**
- Assess ABC’s and treat as needed
- Reassure the patient and provide emotional support.

**Secondary survey**
- Administer oxygen, if indicated.
- If appropriate, treat for shock.
- Treat related injuries as indicated.

**NOTE:**
1. Protect the scene and preserve evidence in cooperation with law enforcement.
2. Discourage the patient from bathing, douching, or changing clothes.
3. This is a highly emotional and volatile situation; be sure your findings and treatments are clearly documented on the PCR form.
4. Crew members, of the same sex as the patient, may relate better to the patient in time of emotional crisis. Trained, professional counsellors may be available and should be contacted, if possible.
5. When in a service area where an EMT-A or EMT-P practitioner is available, **if the patients condition deteriorates**, arrange an ALS intercept.

**INDEX**
**Basic Life Support**

- Approach and remove patient from current source with extreme caution and professional assistance, if available.
- If patient is breathing, provide high flow oxygen by mask.
- Monitor cardiac status and be prepared for cardiac arrest.
- Perform CPR and perform defibrillation as required.

**Advanced Life Support**

- Start an IV of Ringer's Lactate or normal saline TKO.

The EMT-A/EMT-P may perform the following:

- If the patient requires and advanced airway, provide one based on your scope of practice.

The EMT-P may perform the following:

- Monitor the ECG for the development cardiac dysrhythmias. If dysrhythmias are noted, proceed to the appropriate protocol.

**NOTE:**

When in a service area where EMT-A or an EMT-P practitioner is available, if the patient condition deteriorates, arrange an ALS intercept.
Hypothermia

Basic Life Support

Primary Survey

- Assess ABC’s
- Remove to warmer environment if possible

Secondary survey

- Protect injured areas from pressure, trauma, and friction. Remove all coverings from injured parts.
- Do not rub and do not break blisters.
- Do not allow patient to ambulate once the limb has started to thaw.
- Do not allow the limb to thaw if there is a chance that the limb may refreeze before evacuation is complete.
- Maintain core temperature by keeping the patient warm with blankets. Warm fluids may be administered to a conscious patient who is not nauseated and has a core temperature greater than 34°C.

SYSTEMIC HYPOTERMIA

Primary Survey

- Assess ABC’s (35-45 seconds may be needed to determine if a pulse is present)
- Remove to warmer environment if possible

Secondary Survey

- Handle all hypothermia patients with care. Rough handling may precipitate ventricular fibrillation.
- To prevent further deterioration in patient’s condition, remove wet clothing and maintain the patient in a warm, draft free environment.
- Administer warmed oxygen if possible.
- Obtain vital signs and temperature every five minutes.
- If ETA to a medical facility is less than one hour, do not attempt re-warming the patient, simply warm ambulance compartment.

If ETA is greater than one hour, initiate controlled re-warming of patient during transport by doing the following.

- Place hot packs, not exceeding 43.3°C, over the carotid arteries, head, lateral thorax, and femoral arteries.
- Warm ambulance compartment to 30°C or more.
- Do not attempt re-warming of extremities
- Administer warm fluids if the patient is conscious, isn’t nauseated and has a core temperature greater than 34°C
Hypothermia

NOTE:

1. When practical, all treatment of cold emergencies should be left until arrival at the health care facility.
2. Shivering occurs between 32° to 36.6° C, but not below. This is a fair indicator of the severity of hypothermia in the patient. If possible, core temperature should be recorded with a low temperature rectal thermometer.
3. Under field conditions, the absence of a palpable pulse is not a dependably accurate indication of functional cardiac activity. To avoid the possibility of causing ventricular fibrillation of a cold but functioning heart, handle these patients with care and gentleness. Functional heart activity is considered to be absent if:
   a) the patient losse a palpable pulse during evacuation; and/or
   b) ventricular fibrillation or asystole is present on the cardiac monitor; and/or
   c) no clinical signs of life are present, including:
      • spontaneous ventilation
      • response to positive pressure ventilation
      • spontaneous movement or sound
      • organized rhythm on a cardiac monitor
      • audible heart sounds on auscultation
4. If the EMT who has completed the PCP bridge or the PCP trained EMT practitioner has successfully completed a learning module approved by the Saskatchewan College of Paramedics, the practitioner may insert a King LT airway device if the patient is apneic.

When in a service area where EMT-A or Paramedic service is available, if the patient condition deteriorates, arrange an ALS intercept.

Advanced Life Support

The EMT-A and EMT-P may proceed as follows:

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

   • Start CPR if pulseless.
   • Insert Combitube if apneic.
   • Start IV with normal saline at TKO.
   • If in VF, administer one shock.
   • If core temperature is below 30° C and patient is still in VF do not administer any further shocks until the core temperature is at least 30° C.
   • Administer warmed oxygen (no higher than 44° C) if available.
   • Obtain a blood glucose level.

The EMT-P may proceed as follows:

   • Intubate if apneic.
   • Transcutaneous pacing is not indicated in bradycardic patients with a core temperature below 30° C.
   • Arrhythmias in patients with a core temperature between 30° C and 34° C can be treated with the first dose of the appropriate drug without medical control.

B. REQUIRES DIRECT MEDICAL CONTROL

Subsequent doses of antiarrhythmic drugs in patients with a core temperature between 30° C and 34° C require medical control as intervals longer than normal are required between doses.
Basic Life Support

Primary survey.

- Assess ABC’s.
- Remove to cooler environment if possible.

Secondary survey.

- temperature;
- skin condition and color; and
- accurate history including time of onset.

For a temperature greater than 40° C (104° F):

- Remove from heat source and place in a cool environment.
- Remove clothing except underwear.
- Administer oxygen.
- Cool by sponging the front and back of the patient with lukewarm water (place patient on side facing attendant).
- Allow the air conditioning to create air currents over the patient to promote cooling.
- Transport immediately.
- Do not carry out any further cooling once the patient temperature has been lowered to 38.8° C (102° F).

For a temperature greater than 37.7° C (100° F) and less than 38.8° C (102° F):

- Remove from heat source.
- Increase oral fluid intake, if not contraindicated (ie; unconsciousness).
- Transport by ambulance to health care facility for further attention.

NOTE:
1. Not all heat emergencies are environmental in nature. They may have an infectious or neurological etiology.
2. High body temperature may cause seizures, particularly in infants. There is no definite evidence that a reduction in body temperature will stop a seizure or prevent a rapid recurrence; but gradual cooling along with acetaminophen should bring cessation to the seizure. Do not over cool.
3. Rapid cooling may cause vomiting or shivering. Do not continue cooling if shivering starts.
4. Do not administer oral salt to the patient.
5. When in a service area where EMT-A or an EMT-P practitioner is available, if the patients condition deteriorates, arrange an ALS intercept.
A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

- If patient is normotensive, start an IV, TKO. If hypotensive infuse rapidly until a systolic blood pressure of 100 mmHg or better is achieved.
- For heat stroke, perform cardiac monitoring and be prepared to deal with seizures. If dysrhythmias develop, the Paramedic should proceed to the appropriate protocols.

The EMT-A may proceed as follows:

- If an advanced airway is required, insert a Combitube/LMA/King LTA and ventilate with supplemental oxygen

The EMT-P may proceed as follows:

- If an advanced airway is required, intubate and ventilate with supplemental oxygen.
Cyanide poisoning may occur as the result of intentional poisoning or accidental exposure such as in the occupational setting (i.e. mine sites). It is an extremely uncommon event in Saskatchewan.

Unless a history of cyanide exposure is available, the diagnosis is extremely difficult, if not impossible, to make in the on scene.

There are no distinct signs or symptoms suggestive of cyanide poisoning other than the odour of almonds on the patient's breath, yet this is frequently absent even in cases of severe poisoning. Fortunately the most important aspect of treatment is the administration of 100% O₂.

The use of amyl nitrate ampoules by responding EMS personnel, is recommended by some experts, however, this aspect of treatment is also controversial. **IT IS RECOMMENDED THAT ONLY THOSE SERVICES THAT RESPOND TO INDUSTRIES WHERE CYANIDE EXPOSURE CAN OCCUR STOCK AMYL NITRATE FOR ADMINISTRATION.**

This may be especially relevant in isolated northern mining communities where transport to a hospital is often prolonged. Those services that wish to use amyl nitrate ampoules are required to implement training, by a physician on the medication and its use. Documentation of this initial training and retraining will be submitted to Saskatchewan Health every two years.

**Basic Life Support:**
1. Remove the victim to an uncontaminated area. Rescuers should wear appropriate protective clothing and breathing apparatus.
2. Remove any contaminated clothing and shower or wash thoroughly any areas of contaminated skin.
3. If there are no symptoms, **no treatment** is required.
4. If symptoms or signs of cyanide poisoning develop (i.e. nausea, tachypnea, shortness of breath, dizziness) give 100% O₂.
5. If consciousness becomes impaired give 100% O₂ and amyl nitrate.
6. If breathing stops give 100% O₂ and amyl nitrate by positive pressure resuscitator. If such a resuscitator is not available, use an artificial device or a bag-valve-mask resuscitator for artificial resuscitation.
7. If the **EMT who has completed the PCP bridge or the PCP trained EMT practitioner** has successfully completed a learning module approved by the Saskatchewan College of Paramedics, the practitioner may insert a King LT airway device if the patient is apneic.

**PROCEDURES FOR USE OF AMYL NITRATE IF REQUIRED:**
1. Amyl nitrate is flammable so remove all sources of ignition.
2. Amyl nitrate is commonly supplied as 0.2 or 0.3 mL card-wrapped glass ampoules.
3. An ampoule should be broken, wrapped in gauze and placed inside the oxygen device or resuscitator.
4. The amyl nitrate ampoule should be left in the mask for 15 - 30 seconds, removed for 15 - 30 seconds, and this cycle should be repeated continuously using a new ampoule every three minutes.
5. Treatment should be continued until the patient regains consciousness OR up to a maximum of six ampoules.
6. The patient should be transported to a hospital as quickly as possible.
7. The care provider should avoid inhaling amyl nitrate as it may cause drowsiness.
8. Patient should have their cardiac status monitored and vital signs recorded every 3 - 5 minutes or generally following administration of each ampoule.
Organophosphates and carbamates are used as insecticides. They are the active ingredient in many compounds. They affect the nervous system causing a constant state of nerve stimulation. They are readily absorbed, by the skin, the GI tract, and the respiratory system. Onset of symptoms may be a few minutes to several hours after exposure. Death occurs due to respiratory failure.

**Basic Life Support**

**BECAUSE OF THE DANGERS OF SKIN ABSORPTION OF ORGANOPHOSPHATES AND CARBAMATES, ALL RESPONDERS MUST WEAR A MASK, GLOVES AND GOWN WHEN TREATING PATIENTS WITH SUSPECTED ORGANOPHOSPHATE OR CARBAMATE POISONING**

Decontaminate patient, if possible by:

- Removal of clothing as carefully and discretely as possible prior to loading patient into ambulance.
- Place all clothing in a double garbage bag then seal.
- Remove as much of the chemical off the patient as possible by brushing off the skin or washing the skin with water if the patient's condition permits.
- Start high flow oxygen if any evidence of respiratory or hemodynamic instability.
- Monitor oxygen saturation levels.
- Suction airway secretions, as required to maintain patent airway.
- Initiate cardiac monitoring, if available.
- If contamination of eyes has occurred, irrigate eyes with normal saline for 20 minutes enroute.
- It is recommended that contaminated clothing be destroyed, as washing may not remove sufficient amounts of the chemical to prevent re-poisoning.
- If the EMT who has completed the PCP bridge or the PCP trained EMT practitioner has successfully completed a learning module approved by the Saskatchewan College of Paramedics, the practitioner may insert a King LT airway device if the patient is apneic.

**NOTE:**

When in a service area where an EMT-A or EMT-P service is available, if the patients condition deteriorates, arrange an ALS intercept.

**SPECIAL CONSIDERATIONS**

- Notify receiving health care facility as early as possible so that they can prepare for the arrival of the patient.
- After transporting patient to a health care facility, cleanse the interior of the ambulance with soap and water followed by a clear water rinse. Allow the vehicle to air dry before using again.
Advanced Life Support

A. DOES NOT REQUIRE DIRECT MEDICAL CONTROL

The EMT-A/Paramedic may proceed as follows:

- Start IV, TKO. If hypotension develops, treat for shock as per protocol.
- Insert a Combitube\LMA\King LTA if advanced airway is required.
- If bronchospasm present, administer salbutamol and ipratropium as in Asthma/COPD protocol.

The EMT-P may proceed as follows:

- The EMT-P may attempt to perform intubation if the patient is in respiratory distress.
- To diminish airway secretions and reverse other signs of poisoning administer atropine as follows:
  - Pediatric dose: 0.05 mg/kg IV every 10 to 15 minutes;
  - Adult dose: 2 to 5 mg IV every 10 to 15 minutes.
- If the patient is in status epilepticus, proceed to appropriate protocol.

EMT-PARAMEDIC SPECIAL CONSIDERATIONS

- Atropine may be given via the intraosseous route in children.
- Atropine may be given by endotracheal tube in a volume of at least 10 ml in patients over the age of two years and 1-2 ml under the age of two to be effective. If dilution is required to reach this volume, normal saline must be used for this purpose. The dose of atropine administered by this route will be the same as that used intravenously in the treatment of these patients.
- Because of the high doses of atropine that may be required in these patients it is recommended that each EMT-P drug box contain at least 10 mg of this drug.
TP18

Spinal Assessment Clearance

- **Standard Approach/Ongoing Assessment**

  - Hypotension?
    - no
    - yes
      - **Soluble patient exam?**
        - no
        - SMR with c-collar
        - yes
        - SMR with c-collar
      - Motor/sensory exam?
        - abnormal
        - SMR with c-collar
        - normal
  
  - Spinal deformity, pain or tenderness?
    - no
    - yes
      - Full range of motion without pain?
        - no
        - Transport
        - yes
          - c-spine cleared

  - Note:
    - New mechanism for spinal injury (examples only use clinical judgment):
      - axial loading injury
      - MVC high speed rollover, or ejection
      - motorcycle, ATV, bicycle accident
      - blunt trauma
    - **Unstable patient exam** (examples only use clinical judgment):
      - acute stress reaction
      - GCS ≤ 15
      - intoxication from drugs or alcohol
      - communication problems
      - distracting injuries
    - **Neurological deficit including weakness and/or numbness below level of injury, and/or incontinence**

  - Spinal Motion Restriction (SMR) can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher. A long backboard, scoop or other extraction device may be used to extricate the patient from their initial position to the stretcher. Patients should be removed from the device as soon as practical.

  - Patients should only be transported on such a device if it is impossible to remove them due to manpower or patient condition considerations.

  - Spinal Motion Restriction (SMR) among at-risk patients is paramount. These include application of a rigid cervical collar, adequate security to stretcher and minimize movement/transfer, in order to maintain in-line stabilization.
INTER-FACILITY TRANSFER PROTOCOLS

IP1 Inter-facility Transfer of Patients Receiving Medications
IP2 Inter-facility Transfer of Patient with Medical Devices in Place

SCOPE OF PRACTICE

GENERAL PROTOCOLS

TREATMENT PROTOCOLS

CARDIAC
MEDICAL
TRAUMA

INTER-FACILITY TRANSFER PROTOCOLS

INDEX
IP1 INTER-FACILITY TRANSFER of PATIENTS RECEIVING MEDICATIONS

In the current delivery of health care services, and the shortage of nursing staff, nurse escorts are not always available to accompany patients on inter-facility transfers from the rural area to urban centres or in urban centres between facilities. It is therefore appropriate for EMS staff to be called upon to transport patients with IV infusions. The Ministry of Health, Emergency Treatment Protocol Manual and Scope of Practice, provides for EMS personnel to attend on inter-facility transfers of patients receiving oral medications as well as number of IV drip medications.

The implementation of each of these medications within the protocol requires the development of a Ministry of Health approved training module, facilitation of the module locally to EMT, EMT-A, and EMT-P care providers by their Regional Medical Advisor or his/her designate. Staff will be in-serviced on the medication and a copy of a training roster will be kept on their training file.

When the training has been delivered, the medical advisor will draft a letter to the ambulance service, the Director of EMS for the health region and the Ministry of Health indicating he/she are approving EMS personnel the provide oversight for transport patients with IV infusions containing the medication. The Ministry of Health will place the letter of approval on the health region file.

The medical advisor will see that all EMS staff are trained in the operation of the IV pumps used in their health region.

CURRENTLY APPROVED MEDICATIONS

EMT/EMT-A and EMT-Paramedic may transfer patients receiving:

Oral Medications provided the following conditions are met:

- There is a written order by a physician for the medication
- The medication ordered is one that normally would be self-administered by the patient in a home setting. Currently approved medications include:
  - Gastrografin 1 hour prior to CT scan.
  - Oral analgesics such as Acetaminophen, ASA, Ibuprophen

THE “EMT” MAY ATTEND RECEIVING THE FOLLOWING IV INFUSIONS:

- IV Anti-microbials
- IV Blood
- IV Blood Products
- Crystalloid IV solution
- IV Heparin
- IV Potassium
IP1  INTER-FACILITY TRANSFER of PATIENTS RECEIVING MEDICATIONS

THE “EMT-A” MAY ATTEND RECEIVING THE FOLLOWING IV INFUSIONS:

- IV Anti-microbials
- IV Blood
- IV Blood Products
- Crystalloid IV solution
- Diazepam
- IV Glycoprotien IIB/IIIA Inhibitors
- IV Gravol
- IV Heparin
- IV Lorazepam
- IV Midazolam
- IV Pantaloc
- IV Potassium

THE “EMT-P” MAY ATTEND RECEIVING THE FOLLOWING IV INFUSIONS:

- IV Amiodarone
- IV Anti-microbials
- IV Blood
- IV Blood Products
- Crystalloid IV solution
- Diazepam
- IV Dopamine
- IV Glycoprotien IIB/IIIA Inhibitors
- IV Gravol
- IV Heparin
- Insulin
- IV Lorazepam
- IV Lidocaine
- IV Midazolam
- IV Nitroglycerine
- IV Pantaloc
- IV Potassium

NOTE:

All additions to this protocol must be submitted to the Ministry of Health along with education materials. The addition of the medication will be discussed at the Provincial Emergency Services Practice Committee and if agreed to will then be sent for approval by the College of Physicians and Surgeons Saskatchewan prior to implementation.
IP2 INTER-FACILITY TRANSFER of PATIENTS WITH MEDICAL DEVICES IN PLACE

In the current delivery of health care services, and the shortage of nursing staff, nurse escorts are not always available to accompany patients on inter-facility transfers from the rural area to urban centers, in urban centers between facilities or to home residences. It is also becoming common for patients to be discharged home with various medical devices in place. It is, therefore, appropriate for EMS staff to be called upon to transport patients with medical devices in place.

The implementation of each of the listed devices within this protocol, or others that may be added in the future requires the development of a Ministry of Health approved training module (must be reviewed by the Ministry of Health) and facilitation of this training to EMT, EMT-A, and EMT-P care providers by their Regional Medical Advisor, or their designate. Staff will be in-serviced on the device and a copy of a training roster will be kept on their training file.

Following training, the medical advisor will draft a letter to the ambulance service, the Director of EMS for the health region and the Ministry of Health indicating they are approving EMS personnel they provide oversight for, to transport patients with these device in place. The Ministry of Health will place the letter of approval on the health region file.

- EMS staff must ensure that the device is one they are approved to manage.
- The patient must be hemodynamically stable.
- Vital signs must be checked q15 minutes.
- If the patient develops any untoward effects the EMS staff will immediately stop at the nearest hospital or contact the nearest hospital for physician orders regarding the device.
- The device must be one the patient would normally be able to care for at home.
- Examples of these devices may include but not be limited to: Jackson Pratt drains, pacemakers, central lines, abdominal dialysis lines, etc.

The EMT, EMT-A and EMT-P MAY ATTEND THE FOLLOWING DEVICES:
- Tracheostomy Tubes (See Special Considerations)
- Nasogastric Tubes (Gravity Drainage Only)
- Foley Catheters
- Jackson Pratt Drains
- Central Venous Catheters when used for fluid administration
- Peritoneal Dialysis Tubes
- Heimlich Valves
- Chest Tubes (with water seal)

THE “EMT- P” MAY ATTEND THE FOLLOWING DEVICES:
- If in place, Central Venous Catheters can also be used for fluid or medication administration by the EMT-Paramedic when attending or treating patients.
- External Pacemaker Devices

SPECIAL CONSIDERATIONS:
1. Patients who are ventilated via a tracheostomy tube are more frequently encountered by EMS providers in a non-hospital setting (home, extended care facilities), and they may be called upon to provide care to a ventilated patient when a tracheostomy tube has become obstructed or dislodged.
2. The current National Occupational Competency Profiles require that emergency services personnel receive training in ostomy care.
IP2 INTER-FACILITY TRANSFER of PATIENTS WITH MEDICAL DEVICES IN PLACE

3. EMS personnel trained prior to the introduction of the National Occupational Competency Profile requirements have not received this training therefore will require training in ostomy care prior to being approved for handling these devices.

4. As there is a geographic variation in the model of tracheostomy tube used and a method of reinsertion, a procedure will be developed by each Regional Medical Advisor which reflects the local standard of care for this equipment for their RHA.

5. The procedure for tracheostomy tube replacement in your RHA is to forward to the Ministry of Health for their approval prior to the education being delivered and implementation.

A review of these devices will be repeated as part of the recertification every two years. Documentation of successful completion of the initial and ongoing training must be kept by each service.

NOTE:

All additions to this protocol must be submitted to the Ministry of Health along with education materials. The addition of the device will be discussed at the Provincial Emergency Services Practice Committee and if agreed to will then be sent for approval by the College of Physicians and Surgeons Saskatchewan prior to the Ministry of Health consenting to implementation.

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