ALS

Advanced Life Support
Patient Care Standards

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Provincial Advanced Life Support Standards

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Advanced Life Support Patient Care Standards

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Acknowledgement

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Advanced Life Support Patient Care Standards

Introduction

The Advanced Life Support Patient Care Standards have been developed to ensure the provision of quality patient care. They must be consistent with current and supported medical practices while at the same time allow for advancements in the practice and science of prehospital medicine. The Standards reflect the practice of paramedics and encompass: knowledge, skills, compassion, integrity, patient advocacy, ethics, and professional conduct.

Levels of Paramedics

The development of prehospital medicine in Ontario over the past 15 years has led to three occupational levels of paramedics in Ontario. The three levels of paramedics within Ontario are as follows: Primary Care Paramedic, Advanced Care Paramedic, and Critical Care Paramedic. Each level of paramedic is defined by a minimum set of skills that are considered controlled medical acts. These controlled acts are then delegated to the paramedic who can apply the skills based on medical directives or on direct orders from a base hospital physician.

The skill set for each level of paramedic is specified in Schedules One, Two and Three of the Regulations made under *Ontario Regulation 257/00* made under the *Ambulance Act R.S.O. 1990*. These skill sets define the minimum skills that a paramedic must be competent in to be classified at the specific level. This does not limit the skills each level of paramedic has or the incremental skills that may be added after consultation with the Emergency Health Services Branch, the Service Operator and the Base Hospital.

When a lower level paramedic is certified in a skill from the schedule of controlled acts for higher level paramedic, the lower level paramedic will perform the skill to the specific standard set for the higher level paramedic.

Definitions

Standard - a minimally accepted measure of professional practice within an acknowledged measure of quantitative or qualitative value.

Practice Standard - a standard that focuses specifically on the professional paramedic and defines the behavior needed to achieve certain patient outcomes.

Patient Care Standard- a standard that focuses on the consumer and describes the specifics of patient care the patient can expect to receive.

The current Advanced Life Support Patient Care Standards incorporate both standards of practice and standards of patient care, as both are needed to provide comprehensive Advanced Life Support service to the public.

Purpose of Standards

The purpose of the Advanced Life Support Patient Care Standards is to define the specifics of patient care that are to be undertaken within the scope of practice of the three occupational levels of paramedics.

The Advanced Life Support Standards will:

- Reflect current practices for paramedics in Ontario and provide a benchmark for paramedic performance.
- Communicate to paramedics, patients, other disciplines and the public in general, the standards of practice and care for paramedics in Ontario.
- Delineate paramedic professional responsibilities and accountabilities.
- Provide a basis for evaluation of the patient care practice of Ontario's paramedics.
- Recognize that the skill set for each occupational level of paramedic may have incremental add-ons with appropriate rationale and accountability.

Conclusion

Advanced Life Support Patient Care Standards set for the three occupational levels of paramedics in Ontario establish the practice and patient care parameters needed to provide high quality patient care in the varied settings throughout the province. The standards are designed to be dynamic to allow for adaptation based upon new medical evidence and/or standards of medical practice.

SECTION 1

Advanced Life Support Paramedic Practice Standards

Paramedic Practice Standards cover a variety of areas of paramedic responsibility that can directly or indirectly affect patient care, the health and safety of the paramedic or the provision of adequate patient care documentation.

1. Maintenance of Certification

Paramedics must be certified by a Base Hospital medical director to perform medical controlled acts. This is contingent on the Provincial Base Hospital Maintenance of Certification, outlined in Appendix 4.

2. Paramedic Continuing Medical Education (CME)

An essential component of maintenance of certification is continuing medical education.

3. Code of Conduct

Paramedics shall adhere to the Provincial Paramedic Conduct Directives (see Appendix 5).

4. Incident Reporting

The paramedic shall adhere to the Base Hospital policy for incident reporting. This shall include but not be limited to the following areas: medication incidents, protocol violations, procedural incidents, ALS equipment failure, medical supply failure, loss of equipment, technical communication failure. The report shall include date and time of incident, call identification number, description of incident and paramedics involved. The paramedic shall comply with the time frame for submission of the report to the Base Hospital program and with action taken.

5. Narcotic Control

The Advanced Care and Critical Care Paramedic shall comply with The Narcotic Control Act of Canada.

6. ALS Equipment Maintenance

The paramedic shall ensure all ALS equipment is operating properly prior to using the equipment to provide patient care. The paramedic will be aware of preventative maintenance requirements and adhere to manufacturer's guidelines, Base Hospital and Service Operator Policies and Procedures with regard to ALS equipment maintenance.

7. Transfer of Care - Primary to Advanced Paramedic

The Paramedic shall adhere to Basic Life Support Patient Care Standards and Base Hospital policies when transferring responsibility for the care of patients to other health care providers. With respect to transfer of patient care, the Primary Care Paramedic shall provide:

- a history of the patient's current problem(s) and relevant past medical history;
- pertinent physical findings
- a summary of management at scene/en-route
- the patient's response to treatment, including most recent vital signs.

8. Transfer of Care between Paramedics

The most highly qualified paramedic shall assess the patient and make a decision on the level of care required and the level of paramedic to be responsible for the patient. The most highly qualified paramedic is the ultimate patient care authority on the scene. If there is any disagreement between the paramedics the Base Hospital physician may be contacted. It is expected that when a level of intervention has been performed the patient care provider most appropriate for that intervention will remain responsible for the patient.

9. Medical Control and Base Hospital Physicians

Paramedics shall contact the Base Hospital physician for direct medical control for interventions that fall outside Base Hospital standing orders and medical directives. Paramedics shall document orders received and the name of the Base Hospital physician on the ACR/AACR (see Standard for Base Hospital Contact).

10. ALS Documentation

The Paramedic shall adhere to Basic Life Support Patient Care Standards and Base Hospital policies regarding ACR/AACR completion, distribution and submission.

11. Most Responsible Paramedic

In all patient care, the most highly qualified paramedic is responsible for the care of the patient. He/she may choose to assign aspects of care and procedures to a lesser-qualified paramedic within the latter's skill set. The more highly qualified paramedic is responsible for decisions on the level of care required during transport. The lesser-qualified paramedic is responsible to alert the more highly qualified paramedic of any change of patient status.

SECTION 2

Advanced Life Support Patient Care Standards

The Advanced Life Support Patient Care Standards are an extension of the current Basic Life Support Standards allowing for the addition of specific Advanced Life Support (ALS) skills. Advanced Life Support (ALS) skills are controlled acts that the paramedic must be competent in when carrying out a Medical Directive. These skills are used to treat varying medical problems in compliance with problem oriented patient care standards.

The Standards are to be followed recognizing that an appropriate assessment has been undertaken by the paramedic. This will ensure that specific indications and conditions will be identified to allow the paramedic to link a specific skill to a specified problem oriented patient care standard.

The problem oriented patient care standards list the expectations of patient care for each occupational level of paramedic. When a skill is undertaken by a lower level paramedic from the schedule of controlled acts for a higher level paramedic, the lower level of paramedic will perform the skill to the standard of the higher level of paramedic.

A. Standard for Base Hospital Contact

A Paramedic may use their skill set to treat a patient via Medical Directives without direct verbal contact with a physician. The Medical Directives for these skills will not cover every situation a Paramedic may encounter and Base Hospital Physician contact may be required.

The Paramedic will attempt to contact their Base Hospital Physician when:

1) A patient does not stabilize after protocol treatment and further advanced intervention is indicated.
2) Any time the Paramedic wishes Base Hospital Physician advice.
3) For situations which are not covered by Medical Directives.
4) When a Base Hospital Medical Directive indicates a Paramedic must contact the Base Hospital Physician.

B. Standard for Intravenous Cannulation

The Primary Care Paramedic may undertake the skill of intravenous cannulation when authorized by the Emergency Health Services Branch and in consultation with the Service Operator and the local Base Hospital.

For patients who have the actual or potential need for intravenous medication and/or intravenous fluid therapy, the authorized Primary Care Paramedic will initiate an intravenous of normal saline at 15 cc per hour. For any further intravenous intervention the Standard for Base Hospital Contact will be followed.

The Advanced Care Paramedic may establish intravenous access in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3).

The Critical Care Paramedic may establish an intravenous for fluid management, for the administration of medications, and in any patient who may potentially require an intervention where an intravenous would be required.

C. Paramedic Pharmacology

All paramedics are expected to have knowledge of the indications, contraindications and complications of any drug that they are authorized to administer either by direct protocol or by verbal order.

D. Preparation for Flight

In preparation for transport the Critical Care Paramedic is expected to assess the need for and establish the following when appropriate:
-nasogastric tube insertion
-intravenous antiemetic therapy
-foley catheter
In addition the Critical Care Paramedic will be expected to evaluate lab results and chest x-ray results. Critical Care Paramedics will also be expected to manage nasogastric drainage as well as chest tube drainage and maintain and trouble shoot equipment.

E. Advanced Life Support Patient Care Standards

The following Advanced Life Support Patient Care Standards are listed alphabetically by patient problem.

1. Airway/Ventilatory Compromise

For patients presenting with airway/ventilatory compromise:

The Primary Care Paramedic will manage the airway in accordance with the Basic Life Support Patient Care Standards for Airway Management.

The Advanced Care Paramedic will manage the airway in accordance with the Provincial Advanced Life Support Standing Order for Oro-Tracheal or Naso- Tracheal Intubation (see Appendix 3).

In cases of foreign body airway obstruction attempts to relieve the obstruction shall be undertaken using manual procedures and/or suction and/or Magill Forceps. If the airway remains obstructed, other airway adjuncts shall be considered and the Standard for Base Hospital Contact followed.

The Critical Care Paramedic will manage the patient with oro-tracheal or naso-tracheal intubation. Nasogastric or oralgastric intubation will be utilized when appropriate. For patients requiring mechanical ventilation the Critical Care Paramedic will assess adequacy of airway procurement, assess/establish patient's tidal volumes, assess/establish patient's positive end expiratory pressure requirements, and assess/establish patient's oxygenation and mode of ventilation requirements. The Critical Care Paramedic will recognize changes in the patient's condition and/or ventilatory parameters that require intervention. It is expected the Critical Care Paramedic will utilize oxygen saturation monitor/waveform, end tidal Co2 monitor/waveform, manometry in the assessment of airway pressures, respirometer to assess tidal volume accuracy and interpret arterial blood gases when available. In cases of foreign body airway obstruction the standard of care for the Advanced Care Paramedic will be followed. In addition and when appropriate pharmacologically assisted airway management and surgical airways should be considered.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

2. Anaphylaxis

For patients presenting with anaphylaxis:

The Primary Care Paramedic will administer Epinephrine in accordance with the Symptom Relief protocol for Anaphylaxis and Standing Order for Administration of Epinephrine (see Appendix 1) and adhere to the Standard for Intravenous Cannulation.

The Advanced Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise, administer Epinephrine in accordance with the Provincial Advanced Life Support Standing Order for Administration of Epinephrine (Anaphylaxis) (see Appendix 3) and initiate an intravenous in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3).

The Critical Care Paramedic will be prepared to follow the Standard for Airway/Ventilatory Compromise, administer Epinephrine

subcutaneous/intravenous/intraosseous, administer Diphenhydramine intramuscular/intravenous/intraosseous, initiate inhalation therapy with Racemic Epinephrine and/or Ventolin and/or Atrovent, establish intravenous access and manage non traumatic hypotension.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

3. Cardiac Rhythm Disturbances

For patients presenting with Cardiac Rhythm Disturbances all paramedics shall adhere to the Standard for Airway/Ventilatory Compromise and in addition:

The Primary Care Paramedic will treat the patient in accordance with the Semi-Automated External Defibrillation (SAED) Protocol for Ventricular Fibrillation and Pulseless Ventricular Tachycardia (see Appendix 2) for patients presenting in a rhythm of Ventricular Fibrillation or Pulseless Ventricular Tachycardia. For patients in Cardiac Arrest with a presenting rhythm of Asystole or Pulseless Electrical Activity, treatment will be in accordance with the Semi-Automated External Defibrillation (SAED) Protocol for Asystole or Pulseless Electrical Activity (see Appendix 2). The Standard for Intravenous Cannulation will be adhered to.

The Advanced Care Paramedic will adhere to the Provincial Advanced Life Support Standing Orders for Pre-hospital Cardiac Arrest and Intravenous Access(see Appendix 3). The Standard for Airway/Ventilatory Compromise will be followed. For rhythm disturbances not covered by the Standing Orders for Pre-hospital Cardiac Arrest the Standard for Base Hospital Contact will be followed.

The Critical Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise and treat the following rhythm disturbances: ventricular fibrillation, pulseless ventricular tachycardia, pulseless electrical activity, asystole, bradydysrhythmias, tachydysrhythmias, and pediatric versions of the same. The Critical Care Paramedic will utilize the skills of advanced EKG interpretation, administration of cardiac medications by intravenous/endotracheal/intraosseous routes, defibrillation, synchronized cardioversion, pacing and nasogastric tube insertion.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

4. Cerebral Vascular Accident/Stroke

For patients presenting with a cerebral vascular accident/stroke:

The Primary Care Paramedic will follow the Basic Life Support Patient Care Standards for Cerebrovascular Accident (CVA, "Stroke") and the Standard for Base Hospital Contact.

The Advanced Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise, establish intravenous access in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access and follow the Standard for Base Hospital Contact.

The Critical Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise, establish an intravenous and follow the Standard for Base Hospital Contact.

5. Chest Pain (Non Traumatic)

For patients presenting with non traumatic chest pain of presumed cardiac origin:

The Primary Care Paramedic will administer ASA and/or Nitroglycerin in accordance with the Symptom Relief Protocol for Cardiac Chest Pain and Standing Orders for Administration of Nitroglycerin and/or ASA (see Appendix 1) and adhere to the Standard for Intravenous Cannulation.

The Advanced Care Paramedic will administer ASA and/or Nitroglycerin in accordance with the Provincial Advanced Life Support Standing Orders for Administration of ASA and Administration of Nitroglycerin. Intravenous access will be established in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access(see Appendix 3). The Standard for Base Hospital Contact will be followed and the Advanced Care Paramedic will administer Morphine upon the direct order of the Base Hospital Physician.

The Critical Care Paramedic will adhere to the Standard for Intravenous Cannulation and may administer Nitroglycerin, administer ASA, administer intravenous Morphine, and assess the patient for thrombolytic therapy.

6. Child Birth

For imminent child birth all levels of paramedics will adhere to the Basic Life Support Patient Care Standards for Emergency Delivery and the Standard for Base Hospital Contact. In addition:

The Primary Care Paramedic will adhere to the Standard for Intravenous Cannulation.

The Advanced Care Paramedic will establish intravenous access in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3).

The Critical Care Paramedic will establish an intravenous, be prepared for complications that may require neonatal resuscitation and be prepared for post partum complications including the potential for use of an intravenous tocolytic agent.

7. Combative Patient

For patients who are combative and the safety of the patient or crew is felt to be at risk:

The Primary Care Paramedic and the Advanced Care Paramedic will adhere to the Standard for Base Hospital Contact.

The Critical Care Paramedic will use advanced assessment skills to assess the patient for medical causes of agitation, establish an intravenous and apply physical and/or chemical restraints when appropriate.

8. Eclampsia/Pre-eclampsia

For patients presenting with eclampsia or pre-eclampsia:

The Primary Care Paramedic will adhere to the Basic Life Support Patient Care Standards and the Standard for Intravenous Cannulation.

The Advanced Care Paramedic will establish an intravenous in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3) and adhere to the Standard for Base Hospital Contact.

The Critical Care Paramedic will be prepared to establish intravenous access, manage seizures through the administration of intravenous Diazepam and in accordance with the Standard for Base Hospital Contact administer and manage Magnesium Sulfate infusion upon a direct order from their Base Hospital Physician.

9. Hypoglycemia

For patients presenting with suspected hypoglycemia:

The Primary Care Paramedic will administer Glucagon and/or Glucose Gel in accordance with the Symptom Relief protocol for Diabetic Hypoglycemia and Standing Orders for Administration of Glucagon S/C and Administration of Glucose Gel (see Appendix 1).

The Advanced Care Paramedic will administer 50% Dextrose (D50W) and/or Glucagon and/or Oral Glucose Gel in accordance with the Provincial Advanced Life Support Program Standing Orders for Administration of 50% Dextrose (Hypoglycemia) and Administration of Glucagon (Hypoglycemia)(see Appendix 3). Intravenous access will be established in accordance with the Provincial Advanced Life Support Program Standing Order for Intravenous Access (see Appendix 3).

The Critical Care Paramedic will establish an intravenous and administer 50% Dextrose (D5OW) intravenously and/or glucagon subcutaneously.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

10. Hypotension

For a patient presenting with hypotension:

The Primary Care Paramedic will adhere to the Basic Life Support Patient Care Standards, the Standard for Intravenous Cannulation and the Standard for Base Hospital Contact.

The Advanced Care Paramedic will initiate an intravenous and appropriate intravenous therapy in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3). If the patient is less than 7 years old the Standing Order for Intraosseous Infusion will be adhered to(see Appendix 3). The Advanced Care Paramedic will adhere to the Standard for Base Hospital Contact and administer dopamine upon the direct order of a Base Hospital Physician.

The Critical Care Paramedic will establish an intravenous, administer appropriate fluid therapy, administer dopamine when appropriate, insert a foley catheter when appropriate and adhere to the Standard for Base Hospital Contact.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

11. Hypovolemia

For patients presenting with hypovolemia:

The Primary Care Paramedic will adhere to the Basic Life Support Patient Care Standards, the Standards for Intravenous Cannulation and Base Hospital Contact.

The Advanced Care Paramedic will initiate intravenous access and appropriate intravenous therapy in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access. The Standing Order for Intraosseous Infusion will be adhered to if the patient is less than 7 years old (see Appendix 3).

The Critical Care Paramedic will establish an intravenous and be expected to manage the patient's volume status utilizing crystalloid, colloid or blood products. The Critical Care Paramedic should be prepared to consider the application of MAST Pants in accordance with the Standard for Base Hospital Contact.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

12. Obstetrical Transfer

For obstetrical patients being transported or transferred:

The Primary Care Paramedic will adhere to the Standards for Intravenous Cannulation and Base Hospital Contact.

The Advanced Care Paramedic may establish an intravenous in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3) and adhere to the Standard for Base Hospital Contact.

The Critical Care Paramedic may establish an intravenous, assess fetal heart rate by use of a fetal doppler and be familiar with the operation of the transport incubator.

13. Pain

For patients presenting with pain:

The Primary Care Paramedic will adhere to the Standards for Intravenous Cannulation and Base Hospital Contact.

The Advanced Care Paramedic will establish intravenous access in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3) and in accordance with the Standard for Base Hospital Contact, may

administer morphine intravenously on the direct order from their Base Hospital Physician.

The Critical Care Paramedic will be prepared to establish an intravenous and administer intravenous/intramuscular analgesic therapy.

14. Pneumothorax

For a patient presenting with a suspected pneumothorax all paramedics will adhere to the Standard for Airway/Ventilatory Compromise and in addition:

The Primary Care Paramedic will adhere to the Standards for Intravenous Cannulation and Base Hospital Contact.

The Advanced Care Paramedic will adhere to the Standard for Base Hospital Contact and perform a needle thoracostomy when given a direct verbal order from their Base Hospital Physician.

The Critical Care Paramedic will confirm the presence of a pneumothorax and perform a needle thoracostomy.

15. Pulmonary Edema

For patients presenting in pulmonary edema:

The Primary Care Paramedic will adhere to the Standard for Intravenous Cannulation and the Standard for Base Hospital Contact.

The Advanced Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise and establish intravenous access in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3). The Standard for Base Hospital Contact will be adhered to and the Advanced Care Paramedic will be prepared to administer intravenous furosemide and/or morphine and/or dopamine and/or sublingual nitroglycerin and/or salbutamol on the direct order of their Base Hospital Physician.

The Critical Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise, establish an intravenous and be prepared to administer furosemide, morphine, dopamine and salbutamol.

16. Seizures

For patients actively seizing, all paramedics will adhere to the Standard for Airway/Ventilatory Compromise and in addition:

The Primary Care Paramedic will adhere to the Standard for Intravenous Cannulation.

The Advanced Care Paramedic will establish intravenous access and administer diazepam either intravenously or per rectum in accordance with the Provincial Advanced Life Support Standing Orders for Intravenous Access and Administration of Diazepam(seizure disorders) (see Appendix 3).

The Critical Care Paramedic will establish an intravenous and administer diazepam by intravenous or per rectum and/or administer an intravenous loading dose of dilantin.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

17. Shortness of Breath

For patients presenting with shortness of breath, all paramedics will adhere to the Standard for Airway/Ventilatory Compromise and assess for the cause of shortness of breath. The Standard for Pulmonary Edema and Pneumothorax will be followed for those patients with reactive airway disease and/or Chronic Obstructive Pulmonary Disease (COPD):

The Primary Care Paramedic will adhere to the Basic Life Support Patient Care Standards, the Standard for Intravenous Cannulation, and administer salbutamol as per the Symptom Relief Protocol for Shortness of Breath and Standing Order for the Administration of Salbutamol (see Appendix 1).

The Advanced Care Paramedic will administer salbutamol in accordance with the Provincial Advanced Life Support Standing Order for Administration of Salbutamol and establish intravenous access in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access (see Appendix 3).

The Critical Care Paramedic will establish an intravenous and be prepared to administer salbutamol and/or ipatropium bromide by nebulization.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

18. Upper Airway Obstruction

For patients presenting with evidence of upper airway obstruction all paramedics will be aware of the possible causes for obstruction (e.g. croup, epiglottitis, foreign body) and furthermore:

The Primary Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise and the Standard for Base Hospital Contact.

The Advanced Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise, establish intravenous access or an intraosseous line in accordance with the Provincial Advanced Life Support Standing Order for Intravenous Access and Intraosseous Access (see Appendix 3).

The Critical Care Paramedic will adhere to the Standard for Airway/Ventilatory Compromise, establish an intravenous and where appropriate initiate inhalation therapy with nebulized saline and/or Epinephrine and/or Budesonide.

Note: For patients less than 40 kg refer to the Provincial Advanced Life Support Standing Orders for Pediatrics (see Appendix 3).

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Table of Appendices

Appendix 1

Provincial Symptom Relief Program

Protocols & Standing Orders

Summer 2000

PROVINCIAL BASE HOSPITAL ADVISORY GROUP

Symptom Relief Program **STANDING ORDER**
Administration of Epinephrine

STANDING ORDER STATEMENT:

Pre-Hospital Administration of Epinephrine During Cases of Acute Anaphylaxis
When the following conditions exist, a Primary Care Paramedic can administer Epinephrine (1:1000) subcutaneously, according to the following protocol and algorithm attached. Epinephrine administration SC will not exceed two doses.

Indications
Any patient who has a confirmed or suspected history of exposure to an allergen AND demonstrates signs and symptoms of a severe life threatening anaphylactic reaction.

Conditions
The patient may receive Epinephrine administered by the Primary Care Paramedic provided that the patient has not received a maximum of two doses prior to the Primary Care Paramedic's arrival.

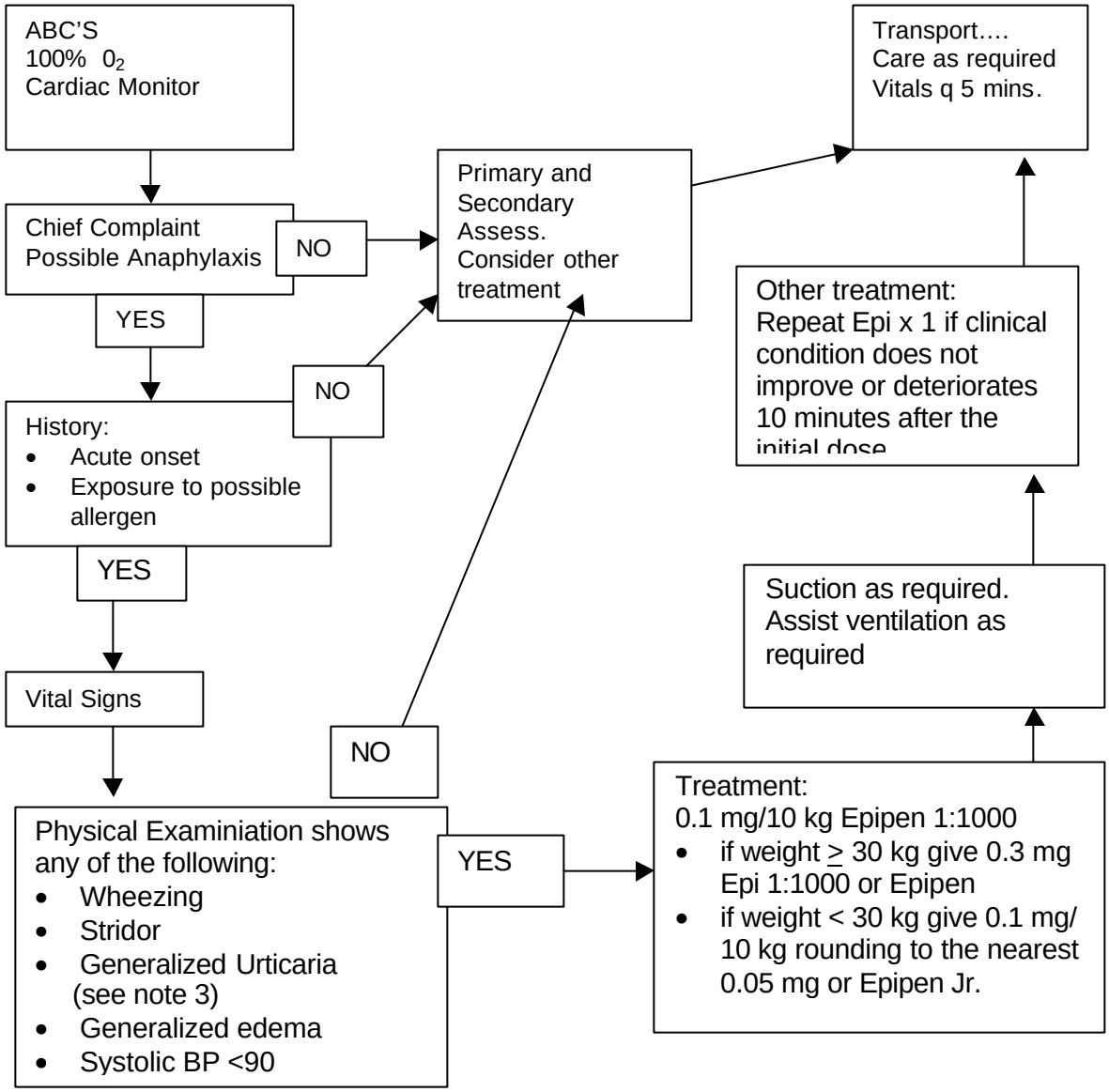
PROCEDURE:

Ensure a patent airway, ventilate with 100% 0_2 as required and document vital signs.

Administer immediately, Epinephrine (1:1000) SC using a 1 ml syringe. The dose to be administered will be 0.1 mg/10 kg. Epinephrine (0.1 mg/10 kg of Epinephrine 1:1000) for patients < 30 kg. rounded to 0.05 mg. All patients = 30 kg will receive the maximum Epinephrine dose of 0.3 mg SC. For services that carry only Epipen: Epipen preloaded (0.3 mg) to be used for patients = 30 kg and Epipen Jr. (0.15 mg) for patients < 30 kg.

Transport to hospital immediately after the administration of the first dose of SC Epinephrine. If no clinical improvement is observed after the first Epinephrine dose, a second Epinephrine dose will be administered SC enroute to the hospital.

Protocol For Anaphylaxis



Note:1: If patient has self administered epinephrine prior to crew assessment, the Paramedic may repeat administration if the patient's clinical condition warrants. TOTAL NUMBER OF DOSES IS TWO. This includes any doses self administered.

Note 2: If the patient has wheezing as a feature of the anaphylaxis, they should be ADDITIONALLY considered for the Shortness of Breath protocol after the paramedic's first dose if epinephrine is given.

Note 3: Urticaria on its own is not an indication for administering Epinephrine. At least one other sign must be present before giving Epinephrine.

PROVINCIAL BASE HOSPITAL ADVISORY GROUP

Symptom Relief Program — STANDING ORDER
Administration of Nitroglycerin and ASA

STANDING ORDER STATEMENT:

Pre-Hospital Administration of Nitroglycerin and/or ASA for Cardiac Chest Pain
Note: Always assess patient for Nitroglycerin use FIRST.

When the following conditions exist, a Primary Care Paramedic can administer Nitroglycerin 0.4 mg spray SL and/or ASA two (2) 80 mg chewable tablets according to the following protocol and algorithm attached. Nitroglycerin administration will not exceed three doses and ASA will not exceed 160 mg. Patients already on Nitro should still be given Nitro if they meet the protocol.

Indications
Administer Nitroglycerin and/or ASA to any patient who has chest pain consistent with cardiac ischemia and who meets the following conditions:

Conditions

To receive Nitroglycerin the patient must:
- weigh at least 40 kg
- be alert and responsive
- have a previous history of angina or coronary artery disease
- have used Nitroglycerin in the past *(this includes Nitroglycerin spray, tablets, transdermal patch)*
- NOT have taken Viagra within the past 24 hours
- have a systolic BP which is ≥ 100 mmHg and a heart rate which is ≥ 60 bpm and ≤ 160 bpm

Note: Do not administer further Nitroglycerin if the systolic BP drops by one-third or below 100 mmHg.

To receive ASA the patient must:
- weigh at least 40 kg
- be alert and responsive
- NOT have an allergy to ASA or other NSAID
- not have current active bleeding (GI or other disorders)
- have no evidence of CVA or head injury within 24 hours prior to Primary Care Paramedic assessment
- have a history of previous use of ASA with no adverse reaction if a known asthmatic

PROCEDURE:
Ensure a patent airway, administer 100% 0_2 as required and document vital signs.

Place the patient on the stretcher.

Confirm that the systolic blood pressure is ≥ 100 mmHg and the heart rate is ≥ 60 bpm and ≤ 160 bpm, and the patient has history of previous Nitroglycerin use. Administer 0.4 mg spray SL.

Transport to hospital immediately following the first dose of Nitroglycerin administered.

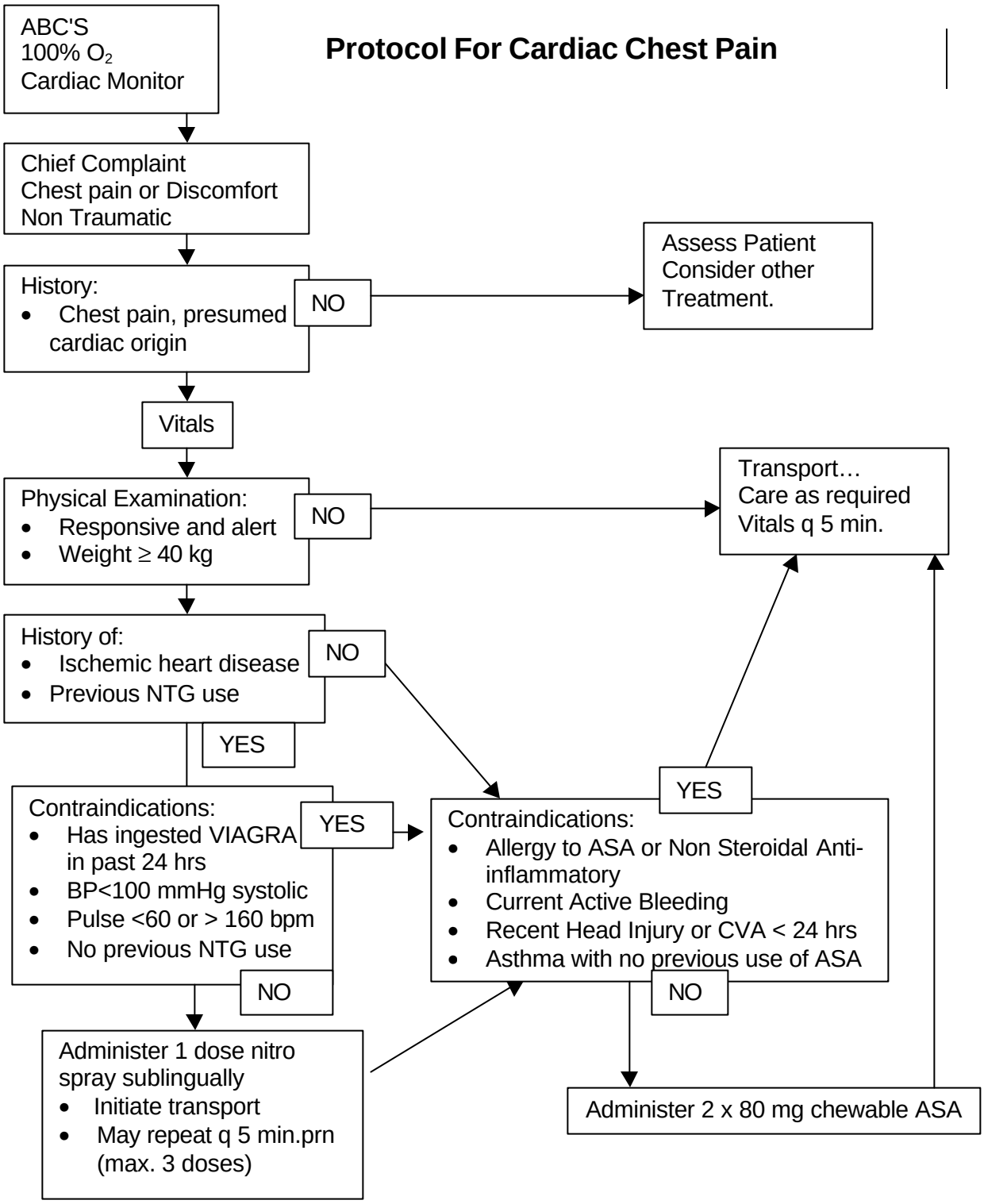
Ensure no contraindications to ASA.

Have the patient chew and swallow two (2) ASA 80 mg chewable tablets enroute to hospital.

Reassess patient for additional Nitroglycerin administration. Administer Nitroglycerin 0.4 mg spray SL every five minutes as needed for chest pain to a maximum of three doses.

Assess the BP and pulse after each dose of Nitroglycerin and after ASA administration. Discontinue Nitroglycerin should the BP fall below 100 mmHg, drops by one-third or the heart rate drops below 60 bpm.

Protocol For Cardiac Chest Pain



Note 1: If the patient's chest pain fully resolves and then recurs, it is treated as a new episode of chest pain and the NTG protocol is repeated, but not the ASA.

Note 2: If the patient has self-administered NTG, paramedic's may still give NTG to a maximum of 3 doses.

PROVINCIAL BASE HOSPITAL ADVISORY GROUP

Symptom Relief Program **STANDING ORDER**
Administration of Salbutamol

STANDING ORDER STATEMENT:

Pre-Hospital Administration of Salbutamol for Shortness of Breath
When the following conditions exist, a Primary Care Paramedic can administer salbutamol according to the following protocol and algorithm attached. Salbutamol will be delivered through a nebulizer mask. Salbutamol administration will not exceed two doses.

Indications
Any patient with a complaint of shortness of breath.

Conditions
The patient must have a history of one or more of the following: Asthma, COPD, Emphysema, Chronic Bronchitis, previous salbutamol use, or current evidence of wheezing.

PROCEDURE:

Ensure a patent airway, ventilate with 100% 0_2 as required and document vital signs.

For patients < **10 kilograms**:

- administer one dose of salbutamol (1.25 mg) via a pediatric nebulizer mask.

For patients **10 to 29 kilograms**:

- administer one dose of salbutamol (2.5 mg) via a pediatric nebulizer mask.

For patients ≥ **30 kilograms**:

- Administer one dose of salbutamol (5.0 mg) via a pediatric/adult nebulizer mask.

Transport to hospital immediately following the initiation of salbutamol. If reassessment indicates that the patient is still in severe distress following completion of the initial dose, the Primary Care Paramedic can repeat the dosage of salbutamol enroute to the hospital. Give 100% O_2 and document vital signs.

Beware of the silent chest as severe bronchospasm may present with absent air entry and no evidence of wheezing. If this occurs and the patient requires assisted ventilations, consider patient for SC Epinephrine Standing Order for Severe Asthmatics.

Provincial Base Hospital Advisory Group

Symptom Relief Program **STANDING ORDER**
Administration of Epinephrine

STANDING ORDER STATEMENT:

Pre-hospital Administration of Epinephrine (1:1000) for Severe Asthma

When the following conditions exist, a Primary Care Paramedic can administer Epinephrine (1:1000) subcutaneously, according to the following protocol. Epinephrine administration SC will not exceed two (2) doses. This includes any epinephrine doses the patient may have received before the arrival of the Primary Care Paramedic.

Indications

Any patient with severe shortness of breath from a suspected asthma exacerbation AND requires bag-valve-mask (BVM) ventilatory support.

Conditions

The patient must have a history of Asthma.
The patient is $\leq$ 50 years of age.

PROCEDURE:

Ensure a patent airway, ventilate with 100% O_2 using a BVM and document vital signs.

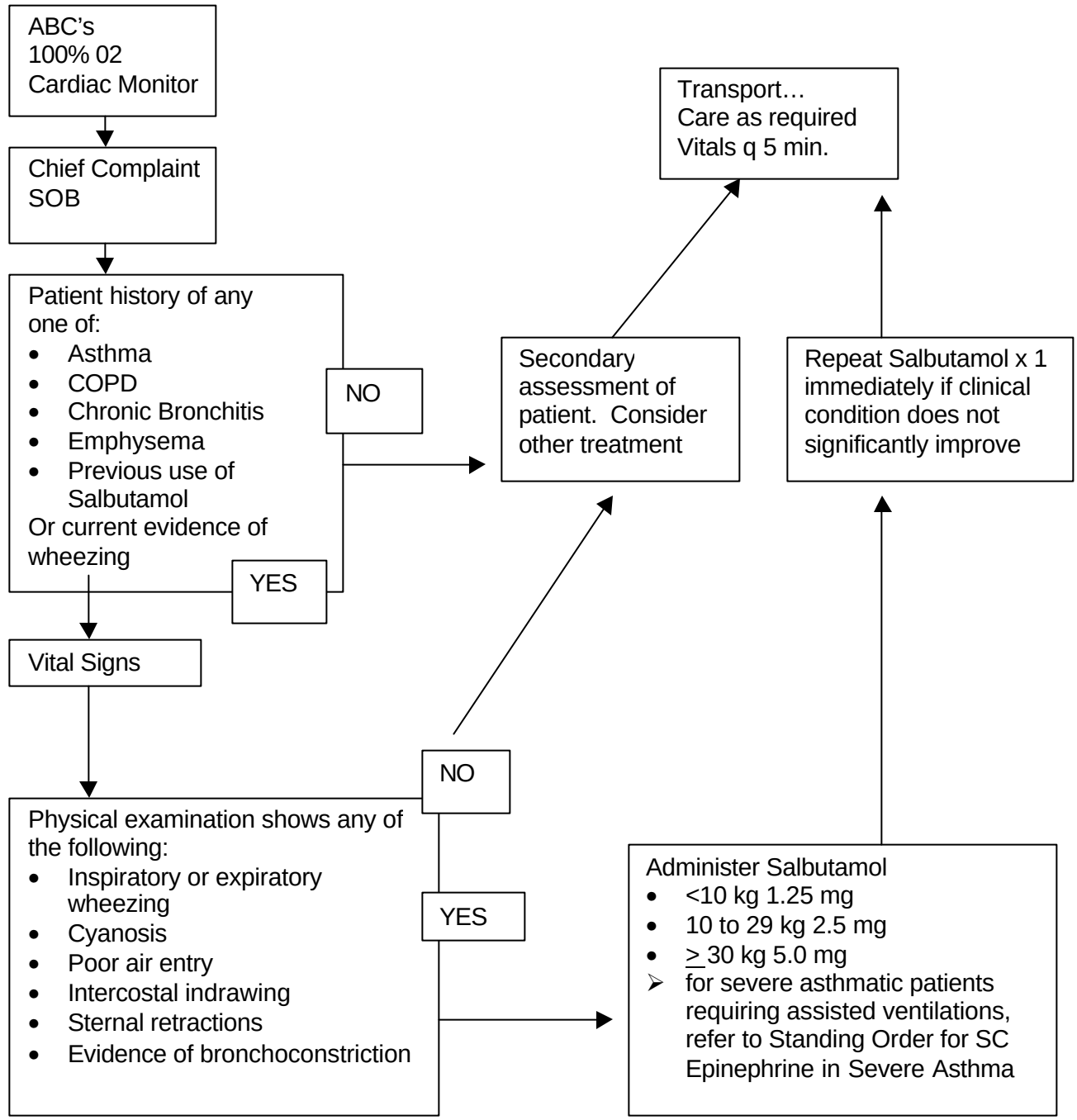
Administer epinephrine (1:1000) SC using a 1 ml syringe. The dose to be administered will be 0.1 mg/10 kg for patients < 30 kg (rounded to the nearest 0.05 mg). All patients $\geq$ 30 kg will receive the maximum epinephrine dose of 0.3 mg SC.

Epinephrine (1:1000) will be administered even if the patient has already received salbutamol therapy.

Transport to hospital immediately after the administration of the first dose of SC epinephrine. If the patient continues to require BVM ventilatory support 10 minutes after the first epinephrine dose, a second epinephrine dose will be administered SC enroute to the hospital.

If the patient improves to the point where BVM ventilatory support is no longer required, the paramedic will administer salbutamol as detailed in the Shortness of Breath Protocol.

Protocol For Shortness of Breath



Note 1:	Transport to hospital immediately following the initiation of Salbutamol or Epi
Note 2:	Beware of the **SILENT CHEST** as severe bronchospasm may be present with absent air entry and no evidence of wheezing. If this occurs and the patient requires assisted ventilations, consider patient for SC Epinephrine Standing Order for Severe Asthmatics.

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PROVINCIAL BASE HOSPITAL ADVISORY GROUP

Symptom Relief Program **STANDING ORDER**
Administration of Glucagon SC

STANDING ORDER STATEMENT:

Pre-Hospital Administration of Glucagon SC in Cases of Acute Hypoglycemia
When the following conditions exist, a Primary Care Paramedic can administer glucagon SC according to the following protocol and algorithm attached. A maximum of one dose will be administered.

Indications
Any patient who has a blood sugar reading of 4 mmol/L or less and exhibits any of the following serious symptoms: agitation, decreased LOA/LOC, syncope, confusion, seizures or symptoms of stroke.

Conditions
A patient with a history of NIDDM or IDDM on oral hypoglycemic agents or insulin, or with an unknown/unobtainable history.

Ensure the patient has no allergy to glucagon or history of pheochromocytoma (rare adrenal gland tumor).

PROCEDURE:

Ensure a patent airway and administer 100% 0_2.

Test the patient's blood sugar to confirm a reading of 4 mmol/L or less.

The dosage of glucagon is to be administered as follows:

For patients **< 20 Kilograms**:

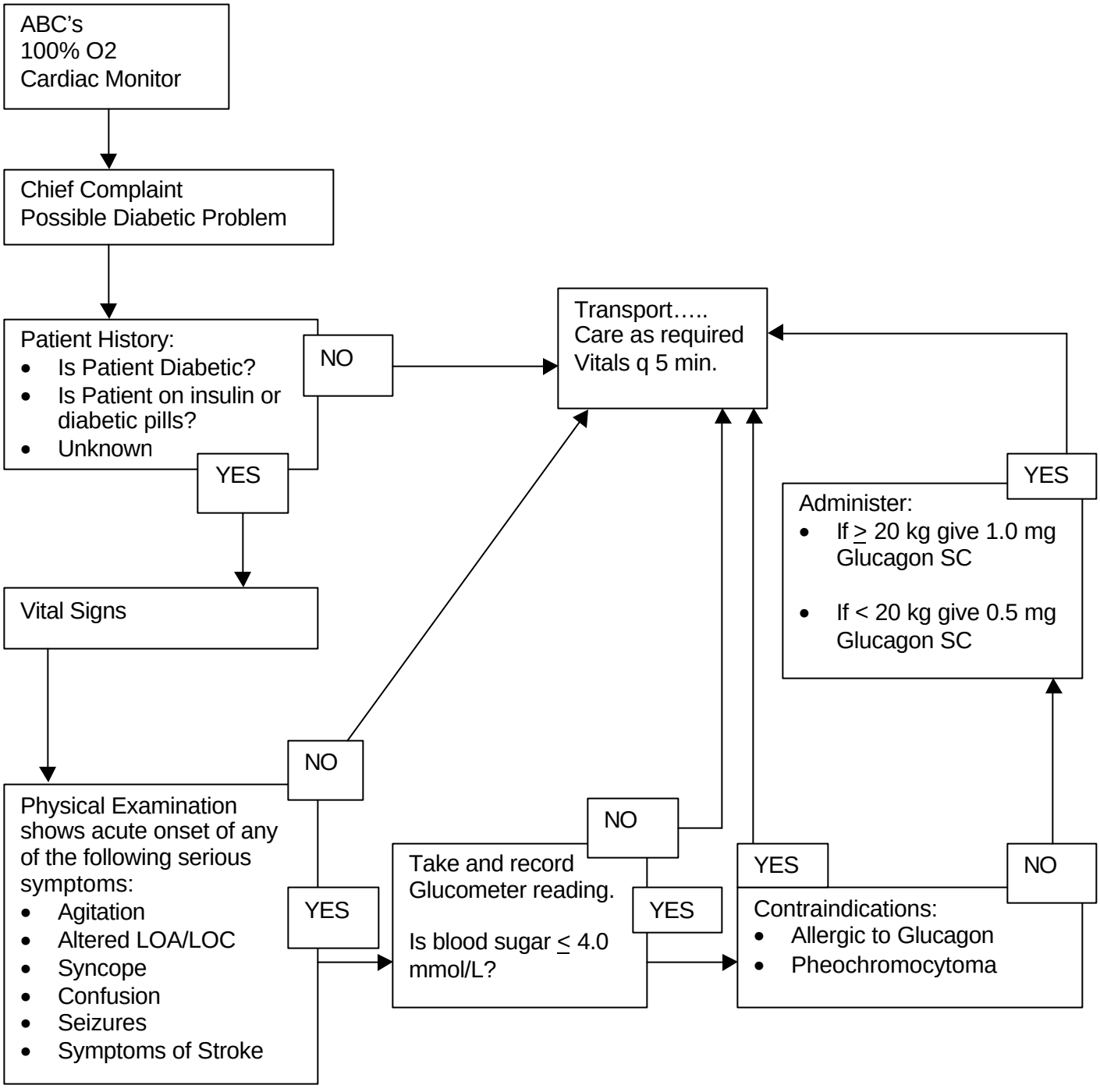
- give glucagon 0.5 mg SC

For patients **= 20 Kilograms**:

- give glucagon 1.0 mg SC

Transport to hospital immediately after the administration of glucagon. Patient should receive oral glucose after responding to glucagon (providing patient is awake and able to protect their airway).

Protocol For Diabetic Hypoglycemia



Note: Patient should receive oral glucose after responding to Glucagon (providing patient is awake and able to protect their airway)

Appendix 2

Provincial Semi-Automated External Defibrillation Protocols

Summer 2000

Protocol for Ventricular Fibrillation & Pulseless Ventricular Tachycardia

Arrest Witnessed By Emergency Personnel

No Delay in SAED Application

Arrest Before Arrival of Emergency Personnel (Unwitnessed)

Patient ≥ 8 years of age

Personal and Patient Safety and Protection

↓

Establish Unresponsiveness, Breathlessness and Pulselessness

↓

SAED attached, (Other Paramedic begins airway management, ventilates via BVM or Genesis II in manual mode to ascertain airway patency and airway resistance)*

↓

Analyze**
Shock 200 joules
Wait 10 sec. - Analyze**
Shock 200 joules
Wait 10 sec. - Analyze**
Shock 360 joules

Check Pulse***
If no Pulse. CPR x 1 minute

↓

Analyze **
Shock 360 joules
Waite 10 sec. - Analyze **
Shock 360 joules
Wait 10 sec. - Analyze **
Shock 360 joules

Check pulse***
If no pulse, CPR x 1 min

↓

Analyze **
Shock 360 joules
Wait 10 sec. - Analyze**
Shock 360 joules
Wait 10 sec. - Analyze **
Shock 360 joules

↓

Continue CPR & Transport
No Further Analysis Enroute

SHOCK PROTOCOL SUMMARY

1.* AGONAL RESPIRATIONS (RATE < 8) ALONG WITH ABSENCE OF A PULSE REQUIRES FULL CPR.

2. PROCEED WITH NO SHOCK INDICATED ALGORITHM IF "NO SHOCK INDICATED APPEARS AND "CHECK PULSE" MESSAGE GIVEN.**

3.* PULSE CHECKS ARE NOT REQUIRED UNTIL AFTER THE THIRD SHOCK DURING A SET/STACK OF THREE SHOCKS.**

4. THE SAED SHOULD BE APPLIED AND PROTOCOLS FOLLOWED IF CPR IS INDICATED BUT WILL BE DELAYED > 30-60 SECONDS DUE TO EXTRICATION.

5. THE SINGLE RESCUER WITH AN SAED SHOULD VERIFY UNRESPONSIVENESS, BREATHLESSNESS, AND PULSELESSNESS, ATTACH THE SAED AND PROCEED WITH THE ALGORITHM IF A FULL CARDIAC ARREST IS CONFIRMED.

6. AFTER RETURN OF A PULSE, DO NOT IGNORE THE CHECK PATIENT PROMPT. CHECK PULSE AND IF NO PULSE PRESS ANALYZE.

7. RESTART THE TREATMENT ALGORITHM FROM THE TOP IF A SPONTANEOUS PULSE RETURNS FOLLOWED BY A SECOND CARDIAC ARREST.

8. 1 MINUTE OF CPR MUST BE COMPLETED BETWEEN A SET/STACK OF "3" SHOCKS.

9. THE SHOCK PROTOCOL IS COMPLETE WHEN "9" SHOCKS HAVE BEEN DELIVERED.

10. DO NOT STOP ENROUTE IF "9" SHOCKS HAVE BEEN DELIVERED ON SCENE, UNLESS PATIENT REARRESTS.

11. A MAXIMUM "3" SHOCKS ARE GIVEN PRIOR TO TRANSPORT OF THE HYPOTHERMIA PATIENT.

12. IMMEDIATELY TRANSPORT THE PATIENT WITH NO FURTHER ANALYSIS, IF FIREFIGHTERS ON SCENE HAVE DELIVERED "9" SHOCKS.

13. DOCUMENT IN THE "REMARKS" SECTION WHEN THE PATIENT BECOMES VSA.

Protocol for Asystole or Pulseless Electrical Activity

Arrest Witnessed By Emergency Personnel

No Delay in SAED Application

Arrest Before Arrival of Emergency Personnel (Unwitnessed)

Patient ≥ 8 years of age

Personal and Patient Safety and Protection

↓

Establish Unresponsiveness, Breathlessness and Pulselessness

↓

(Other Paramedic begins airway management, ventilates via BVM or Genesis II in manual mode to ascertain airway patency and airway resistance)*

↓

Analyze (check pulse message #1)

↓

"Check pulse"

↓

If no Pulse. **CPR** 1 minute**

↓

Analyze (check pulse message #2)

↓

"Check pulse"***

↓

If no Pulse. **CPR** 1 minute**

↓

Analyze (check pulse message #3)

↓

"Check pulse"

↓

If no pulse continue CPR ****
and Transport

NO SHOCK PROTOCOL SUMMARY

1.* AGONAL RESPIRATIONS (RATE < 8) ALONG WITH ABSENCE OF A PULSE REQUIRE FULL CPR.

2. IF "CHECK PATIENT" MESSAGE HEARD AT ANY TIME DURING CPR, IGNORE THIS MESSAGE AND COMPLETE THE ONE FULL MINUTE OF CPR.**

3.* AFTER THE SECOND ANALYSIS, YOU MAY ELECT TO BEGIN PREPARATION OF PATIENT FOR TRANSPORT WHILE CONTINUING CPR. THE THIRD ANALYSIS MAY BE DONE AFTER THE PATIENT IS EXTRICATED OR MOVED TO THE STRETCHER AS LONG AS THE FIRST THREE ANALYSIS OCCUR WITHIN FIVE MINUTES OF ARRIVAL AT PATIENT.**

4.**ANALYSIS OF THE PATIENT'S RHYTHM ENROUTE MUST BE CARRIED OUT IF THE "CHECK PATIENT" MESSAGE IS GENERATED 3 TIMES WITHIN A TWO MINUTE PERIOD.**

5. THE SAED SHOULD BE APPLIED AND PROTOCOLS FOLLOWED IF CPR IS INDICATED BUT WILL BE DELAYED > 30-60 SECONDS DUE TO EXTRICATION.

6. THE SINGLE RESCUER WITH AN SAED SHOULD VERIFY UNRESPONSIVENESS, BREATHLESSNESS, AND PULSELESSNESS, ATTACH THE SAED AND PROCEED WITH THE ALGORITHM IF A FULL CARDIAC ARREST IS CONFIRMED.

7. THE VEHICLE MUST NOT BE MOVING DURING THE ANALYZE SEQUENCE AS VEHICLE MOTION CAN MIMIC V-FIB.

8. ONLY ONE STOP ENROUTE WHEN YOU RECEIVE REPEATED "CHECK PATIENT" ALERTS FOLLOWING COMPLETION OF NO SHOCK PROTOCOL.

9. CONTINUE CPR ENROUTE TO HOSPITAL WITH NO FURTHER ANALYSIS IF FOUR CONSECUTIVE "NO SHOCK" MESSAGES (THREE AT SCENE, ONE ENROUTE) HAVE BEEN RECEIVED.

10. 1 MINUTE OF CPR MUST BE DONE BETWEEN EACH “NO SHOCK” INDICATED.

11. THE NO SHOCK PROTOCOL IS COMPLETE WHEN YOU RECEIVE "3" <u>CONSECUTIVE</u> NO SHOCK INDICATED MESSAGES FOLLOWING ANALYSIS, (NOT "3" TOTAL). THIS MAY OCCUR INITIALLY OR AFTER REPEATED SHOCKS.

12. IMMEDIATELY TRANSPORT PATIENT IF FIREFIGHTERS ON SCENE HAVE COMPLETED "3" CONSECUTIVE NO SHOCKS.

13. DOCUMENT IN THE “REMARKS” SECTION WHEN THE PATIENT BECOMES VSA.

PROTOCOL FOR USE DURING CASES OF CARDIAC ARREST ASSOCIATED WITH HYPOTHERMIA

Establish Unresponsiveness, Breathlessness and Pulselessness
(45 Second Pulse Check)

↓

(Patient ≥ 8 years)
No Delay in SAED Application

ANALYZE

If "No Shock" indicated

↓

CPR & Transport

Shock indicated

↓

Deliver Shocks to a max. of 3 total

↓

CPR & Transport

PROVINCIAL BASE HOSPITAL ADVISORY GROUP

STANDING ORDER

STANDING ORDER STATEMENT:

Pre-Hospital Treatment for Hypothermic Cardiac Arrest

When a patient is found to be in cardiac arrest (VSA) and convincing evidence exists that would lead the paramedic to suspect that the patient is severely hypothermic, the paramedic will treat the patient according to the following protocols.

Indications

Patient who is in cardiac arrest (VSA) with severe hypothermia. Severe hypothermia defined as:

- History indicating that the patient has suffered prolonged exposure to a cold environment.
- Patient's central body temperature is cold to the touch (chest, abdomen, and under arms).
- The patient's skin appears to be white/waxy in nature.
- The patient may have stiff limbs.

Conditions

Patient is $\geq$ 8 years old.

PROCEDURE:

1. Confirm cardiac arrest by the absence of spontaneous respirations and palpable central pulses. (With hypothermic patients, a **30-45 second pulse check** should be performed to ensure pulse is absent and not just bradycardic)
2. Initiate therapy according to the hypothermic algorithm.
3. Protect patient against further heat loss by removing wet garments ASAP.
4. Keep patient warm (blankets, heater on in ambulance, etc…).
5. Avoid rough handling of patient.

Appendix 3

Pre-Hosptial Advanced Life Support Program

Standing Orders For Adults & Pediatrics

Summer 2000

Pre-Hospital

Advanced Life Support

Program

PROVINCIAL STANDING ORDERS

FOR

ADULTS

Summer 2000

STANDING ORDERS, PROTOCOLS & PROCEDURES

Version – Summer 2000

TABLE OF CONTENTS – ADULT

DEFINITIONS

STANDING ORDERS

Are pre-authorized medical orders for use in certain defined circumstances that do not require on-line communication before implementation. They are a component of but not synonymous with protocols.

PROTOCOLS

Are broader than standing orders and outline the entire scope of medical practice including that done under standing orders and under on-line supervision.

MEDICAL DIRECTIVES

Are more encompassing and can include both protocols for medical acts and policies and procedures for non medically defined tasks such as destination policies.

PRE-HOSPITAL ORO-TRACHEAL INTUBATION

STANDING ORDER

When the listed indications and conditions exist, a paramedic can perform oro-tracheal intubation according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. Airway control/protection

2. Ventilatory assistance

CONDITIONS

Patient is greater than 40 kg.

PROCEDURE

1. Ventilate the patient, hyperoxygenating for 30 - 60 seconds with 100% oxygen.

2. Choose appropriate tube size and check cuff.

3. If patient is responsive, squirt 2 sprays Lidocaine spray (20 mg) into the hypopharynx or directly onto the vocal cords.

4. Intubate, confirm tube placement and secure tube.

5. If unsuccessful intubating after 30 seconds, stop and repeat steps 1 and 4.

6. If a second attempt fails at scene and repeat attempts would delay transport, they should be attempted en route.

PRE-HOSPITAL NASO-TRACHEAL INTUBATION

STANDING ORDER

When the listed indications and conditions exist, a paramedic can perform naso-tracheal intubation according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. Airway control/protection
2. Ventilatory assistance

CONDITIONS

1. Patient is at least 8 years old.

PROCEDURE

1. Squirt 2 sprays Otrivin into each nostril.
2. Squirt 2 sprays Lidocaine into the hypopharynx.
3. Squirt 2 sprays Lidocaine spray into each nostril.
4. Hyperoxygenate the patient 30 - 60 seconds with 100% oxygen.
5. Choose appropriate tube size and check cuff.
6. Intubate, confirm tube placement and secure tube.
7. If unsuccessful intubating after 30 seconds, stop and repeat steps 4 and 6.
8. If 2 attempts at scene fail and repeat attempts would delay transport, they should be attempted en route.

NOTE

1. Trauma cases require urgent transport to hospital.

PRE-HOSPITAL INTRAVENOUS ACCESS

STANDING ORDER

When the listed indications and conditions exist, a paramedic can establish intravenous access according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Actual or potential need for:

1. Intravenous medication

2. Intravenous fluid therapy

CONDITIONS

1. Patient is greater than 40 kg.

PROCEDURE

1. Intravenous access will be by saline lock or IV line with 0.9% Normal Saline at the paramedic's discretion.

2. In cases of suspected acute **hypovolemia**, traumatic or otherwise, the paramedic may administer an IV fluid bolus of 20 ml/kg, checking vital signs after every 250 ml of IV fluid.
   In such cases, discontinue a fluid bolus at a systolic BP of 90 mm Hg.

3. In cases of adults with symptomatic **hypotension** (BP < 90) **not due to suspected acute hypovolemia** and without signs of pulmonary edema, the paramedic may administer an IV fluid bolus of 250 ml. This may be repeated x1 if blood pressure remains less than 90.

4. After administering an IV bolus, the IV drip rate should be KVO.

NOTE

1. Trauma cases require urgent transport to hospital. For these cases, if IV access would delay transport, IV access should be attempted en route rather than on scene.

2. When administering IV fluid resuscitation, the paramedic must carefully observe the patient for signs of fluid overload.

3. The receiving hospital must always be notified they will be receiving a trauma patient or any patient with serious hypovolemia.

4. If an IV has been started, the "Keep Vein Open" rate should be 30 - 60 ml/hr.

PRE-HOSPITAL ADMINISTRATION OF ASA

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer two (2) ASA 80 mg chewable tablets according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient who has chest pain consistent with that caused by cardiac ischemia

CONDITIONS

1. Patient is greater than 40 kg.
2. No allergy to ASA or NSAIDS.
3. No acute bleeding disorders.
4. No CVA or significant head injury in the last 24 hours.
5. No history asthma induced by ASA.

PROCEDURE

1. Treat patient as needed (Oxygen, intravenous access, pain relief, cardiac monitor, anti-arrhythmics, etc.).
2. Have the patient chew and swallow two (2) ASA 80 mg chewable tablets.

NOTE

1. ASA administration should not delay transport. It can be given en route.
2. For many reasons, some patients may be reluctant or may refuse to take ASA. In such cases, respect the patient's wishes but notify the receiving hospital staff on arrival.
3. Patients with asthma who have not previously taken ASA should **not** receive ASA.

PRE-HOSPITAL ADMINISTRATION OF 50% DEXTROSE (HYPOGLYCEMIA)

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer 25 grams (50 ml) of 50% dextrose in water intravenously according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. An altered level of consciousness [defined as a Glasgow Coma score of fourteen (14) or less].

   and

2. A blood sugar reading of $\leq$ 4 mmol/L.

CONDITIONS

Patient is greater than 40 kg.

PROCEDURE

1. Ensure airway, administer oxygen and apply monitor.
2. Establish IV access.
3. Test blood sugar to confirm reading of $\leq$ 4 mmol/L.
4. Administer 25 grams (50 ml) of 50% dextrose in water intravenously
5. If IV access is by saline lock, flush lock with 10 ml Normal Saline.
6. If **no** improvement or if additional orders are required, contact the Base Hospital.

NOTE

1. The patient should be transported to hospital for assessment. If a competent patient signs a refusal of transport, every attempt must be made to ensure that food is available, that a reliable adult can care for the patient and that they will call EMS (911) if needed.
2. IV Dextrose is very irritating if it extravasates.

PRE-HOSPITAL ADMINISTRATION OF GLUCAGON (HYPOGLYCEMIA)

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Glucagon according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. An altered level of consciousness [defined as a Glasgow Coma score of fourteen (14) or less]

   and

2. A blood sugar reading of $\leq$ 4 mmol/L.

3. Cannot establish an intravenous access.

CONDITIONS

> 20 K - 1.0 mg.
≤ 20 K - 0.5 mg.

PROCEDURE

1. Ensure airway, administer oxygen and apply monitor.

2. Test blood sugar to confirm reading of $\leq$ 4 mmol/L.

3. Administer Glucagon subcutaneously.

4. If **no** improvement or if additional orders are required, contact the Base Hospital.

NOTE

1. The patient should be transported to hospital for assessment. If a competent patient signs a refusal of transport, every attempt must be made to ensure that food is available, that a reliable adult can care for the patient and that they will call EMS (911) if needed. A final set of vitals should be obtained.

PRE-HOSPITAL ADMINISTRATION OF DIAZEPAM (SEIZURE DISORDERS)

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Diazepam 5 mg intravenously or rectally according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient who is

1. Unresponsive

and

2. In a generalized motor seizure.

CONDITIONS

Patient is greater than 40 kg.

PROCEDURE

1. Manage airway and ventilation as indicated.

2. Attach cardiac monitor.

3. Test blood glucose, confirming a > 4 mmol/L. If blood glucose is less than $\leq$ 4 mmol/L, treat as for hypoglycemia.

4. Establish IV access.

5. Administer Diazepam 5 mg IV over a 1-minute period. If the seizure stops during the administration of the drug, terminate the administration.

   If after another 2 minutes, the seizure continues or recurs, repeat administration of Diazepam 5 mg IV over a 1 minute period. If the seizure stops during the administration of the drug, terminate the administration.

6. If after 2 attempts, IV access has not been secured, Diazepam 5 mg should be administered rectally.

   If after another 2 minutes, the seizure continues or recurs, and if IV access has still not been secured, repeat administration of Diazepam 5 mg rectally.

7. Monitor respiratory status.

NOTE

1. Base Hospital contact should be made if other intervention/management is required.

PRE-HOSPITAL ADMINISTRATION OF EPINEPHRINE (ANAPHYLAXIS)

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Epinephrine (1:1,000) 0.3 mg subcutaneously according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient who

1. Has a recent history of exposure to a probable allergen

and

2. Demonstrates any of the following: wheezing, stridor, systolic blood pressure less than or equal to 90, generalized edema, with or without urticaria. (Urticaria on its own is not an indication for epinephrine).

CONDITIONS

1. Patient is greater than 40 kg.
2. Patient has not had 2 doses of epinephrine, either self-administered or by another person.

PROCEDURE

1. Manage airway and ventilation as indicated.
2. Administer Epinephrine (1:1,000) 0.3 mg SC.
3. Attempt IV access.
4. Attach cardiac monitor.
5. Monitor vital signs.
6. If clinical condition does not improve, or if it deteriorates, repeat Epinephrine (1:1,000) 0.3 mg SC in 10 minutes.
7. If other intervention/management is required, contact Base Hospital.

PRE-HOSPITAL ADMINISTRATION OF NITROGLYCERIN (SUBLINGUAL)

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Nitroglycerin 0.4 mg spray sublingually, every 5 minutes as needed for chest pain, to a maximum of 3 doses, according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient who has chest pain consistent with that caused by cardiac ischemia

CONDITIONS

1. Patient is greater than 40 kg.

2. Systolic blood pressure must be $\geq$ 100 mm Hg. and the heart rate must be $\geq$ 60 bpm and $\leq$ 160 bpm.

3. Patient is alert.

PROCEDURE

1. Place patient in sitting or supine position.

2. Administer oxygen.

3. Attach cardiac monitor.

4. Confirm systolic blood pressure, must be $\geq$ 100 mm Hg. and the heart rate must be $\geq$ 60 bpm and $\leq$ 160 bpm.

5. Administer Nitroglycerin 0.4 mg spray sublingually, every 5 minutes as needed for chest pain, to a maximum of 3 doses.

6. Assess vital signs after each dose and only administer nitroglycerin if vital signs remain within above parameters.

7. Patch to Base Hospital if chest pain persists or further orders are required.

NOTE

1. Patients who have taken Viagra in the past 24 hours should not be given nitroglycerin.

PRE-HOSPITAL ADMINISTRATION OF SALBUTAMOL

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer salbutamol according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient with

1. A complaint of shortness of breath.

CONDITIONS

1. Patient must have evidence of bronchospasm.
2. Patient is > 40 kg.

PROCEDURE

1. Administer 5 mg salbutamol by nebulizer and O_2 at 6-8 lpm.

2. Repeat salbutamol immediately if clinical condition does not significantly improve.

3. For intubated patients salbutamol will be administered by MDI and ETT spacer chamber:

   Administer 1 puff (100 μg) followed by 4 breaths, repeat this 8 times

   Drug delivery along with patient ventilation will be provided by the ventilation bag attached to a 100% oxygen source.

   If significant clinical improvement does not occur following completion of the initial ETT dose, a repeat dose can be given.

NOTE

1. It is recommended these patients be attached to a cardiac monitor.

2. Oxygen should be administered continuously during nebulization or via non rebreather to all distressed asthmatic patients.

3. These patients should be transported to hospital

4. Base hospital contact should be made if other intervention/management is required.

5. Optimal volume for nebulization is 2.5 to 5 ml.

STANDING ORDER

When the listed indications and conditions exist, a paramedic can treat victims of cardiac arrest, according to the following protocols, without establishing Base Hospital contact.

INDICATIONS

Patient who is in cardiac arrest (Vital Signs Absent - VSA).

CONDITIONS

Patient is greater than 40 kg.

PROCEDURE

1. Confirm VSA by absence of spontaneous respiration and palpable pulse.

2. Initiate therapy according to the appropriate algorithm based upon the presenting ECG rhythm.

3. If, prior to patching to the Base Hospital, the ECG rhythm changes from one pulseless rhythm to another, the paramedic will initiate procedures indicated in the algorithm appropriate for the new rhythm.

4. Patch to the Base Hospital upon:

   a) The return of a palpable pulse;

   or

   b) The *completion* of the sequence of procedures specified in the appropriate algorithm and the persistence of no palpable pulse 10 minutes after arriving at the patient's side;

   or

   c) To obtain authority to transport the patient, cease resuscitation or pronounce the patient dead.

NOTE

1. If unable to establish a patch, continue with the appropriate algorithm(s), transport the patient and document the patch failure on the ACR.

2. Epinephrine, atropine and lidocaine may be administered by endotracheal route if intravenous access is not readily obtained. In such cases, the doses of these drugs should be doubled.

MEDICAL CARDIAC ARREST
(Patients greater than 40 kg.)

Algorithms for: **1. Pulseless Ventricular Tachycardia (VT)**
2. Ventricular Fibrillation (VF)

CONFIRM: CARDIAC ARREST
NO EVIDENCE OF TRAUMA
*
CPR
*
CARDIAC MONITOR
*
PULSELESS VT or VF
*
DEFIBRILLATE 200 JOULES
*
DEFIBRILLATE 200 - 300 JOULES
*
DEFIBRILLATE 360 JOULES
*
ENDOTRACHEAL INTUBATION
*
INTRAVENOUS ACCESS
NORMAL SALINE AT KVO RATE
*
1.0 mg EPINEPHRINE (1:10,000)IV
OR
2.0 mg EPINEPHRINE (1:10,000)ETT
(Epinephrine administration should be repeated q 3 minutes)
*
DEFIBRILLATE 360 JOULES
*
1.5 mg/kg LIDOCAINE IV
OR
3.0 mg/kg LIDOCAINE ETT
*
DEFIBRILLATE 360 JOULES
*
PATCH

At any point in the algorithm, if there is conversion to a supraventricular rhythm or ventricular tachycardia with output, BP >60 and **if no Lidocaine has already been given**, give Lidocaine 1.5 mg/kg bolus IV or Lidocaine 3.0 mg/kg ETT. If Lidocaine was already given, repeat Lidocaine 0.5 mg/kg IV/ETT every 5 minutes up to a total dose of 3.0 mg/kg.

If a total dose of Lidocaine of 3.0 mg/kg has been administered by any route, patch to the Base Hospital for further orders.

MEDICAL CARDIAC ARREST
(For patients greater than 40 kg.)

Algorithms for: **3. Asystole**
4. Pulseless Electrical Activity (PEA)

CONFIRM: CARDIAC ARREST
NO EVIDENCE OF TRAUMA
*
CPR
*
CARDIAC MONITOR

ASYSTOLE

ENDOTRACHEAL INTUBATION

*
INTRAVENOUS ACCESS
NORMAL SALINE AT KVO RATE

*
1.0 mg EPINEPHRINE (1:10,000) IV
or
2.0 mg EPINEPHRINE (1:10,000) ETT

(REPEAT EPINEPHRINE IN 3-5 MINUTES
TO A MAXIMUM OF THREE DOSES)
*
1.0 mg ATROPINE IV
or
2.0 mg ATROPINE ETT

(REPEAT ATROPINE IN 3-5 MINUTES TO A
MAXIMUM OF THREE DOSES)

*
PATCH

*
INTRAVENOUS ACCESS

NORMAL SALINE
*
1.0 mg EPINEPHRINE (1:10,000) IV
or
2.0 mg EPINEPHRINE (1:10,000) ETT

(REPEAT EPINEPRHINE IN 3-5 MINUTES
TO A MAXIMUM OF THREE DOSES)
*
INITIATE INTRAVENOUS BOLUS
250 cc NORMAL SALINE

*
IF BRADYCARDIC (<60 BEATS/MIN)
1.0 mg ATROPINE IV
or
2.0 mg ATROPINE ETT

(REPEAT ATROPINE IN 3-5 MINUTES TO A
MAXIMUM OF THREE DOSES)
*
PATCH

IF RHYTHM UNCLEAR
CONSIDER FINE VF

IF RETURN OF PULSE AT ANY POINT, PATCH

PULSELESS ELECTRICAL ACTIVITY

ENDOTRACHEAL INTUBATION

PRE-HOSPITAL TREATMENT OF HYPOTHERMIC CARDIAC ARREST

STANDING ORDER

When a patient is found to be in cardiac arrest (VSA) and convincing evidence exists that would lead the paramedic to suspect that the patient is severely hypothermic, the paramedic will treat the patient according to the following protocols.

INDICATIONS

Patient who is in cardiac arrest (VSA) with severe hypothermia. Severe hypothermia is defined as:

- History indicating that the patient has suffered prolonged exposure to a cold environment.
- Patient's central body temperature is cold to the touch (Chest, Abdomen, and underarms.)
- The patient's skin appears to be white /waxy in nature.
- The patient may have stiff limbs.

CONDITIONS

Patient is >40kg

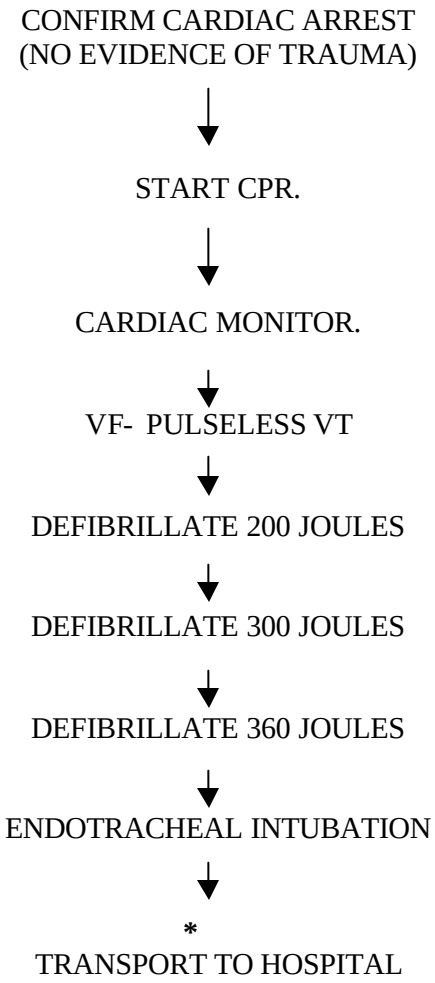
PROCEDURE

1. Confirm cardiac arrest by the absence of spontaneous respirations and palpable central pulses. (With hypothermic patients a **30-45 sec pulse check** should be performed to ensure pulse is absent and not just bradycardic).
2. Initiate therapy according to the hypothermic algorithm.
3. Protect patient against further heat loss by removing wet garments ASAP.
4. Keep patient warm (blankets, heater on in ambulance. .etc)
5. Avoid rough handling of patient.

ALGORITHM FOR HYPOTHERMIC CARDIAC ARREST
(Patients > 40 kg)

Algorithms for :

1. **Pulseless Ventricular Tachycardia (VT)**
2. **Ventricular Fibrillation (VF)**

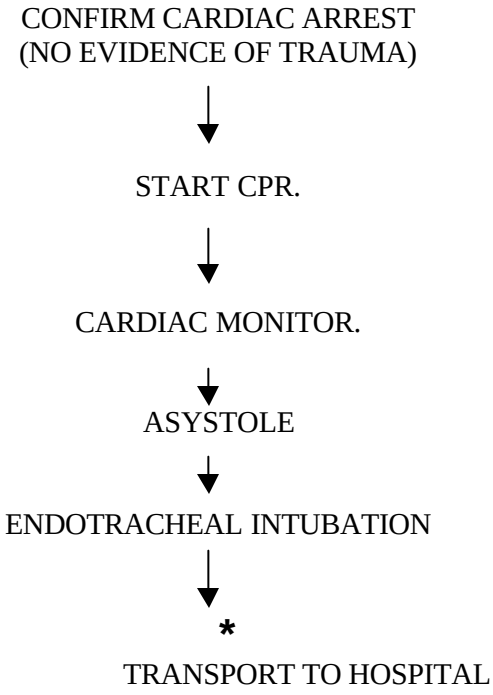


* If there is doubt as to whether or not the patient is severely hypothermic the paramedic should continue on with the standard VF- pulseless VT algorithm or patch to BHP for further orders.

ALGORITHM FOR HYPOTHERMIC CARDIAC ARREST
(Patients > 40 kg)

Algorithms for :

3. **Asystole**
4. **Pulseless Electrical Activity (PEA)**



***** If there is doubt as to whether or not the patient is severely hypothermic the paramedic should continue on with the standard asystole, PEA, algorithm or patch to BHP for further orders.

Pre-Hospital

Advanced Life Support

Program

PROVINCIAL STANDING ORDERS

PEDIATRIC

Summer 2000

PROTOCOLS & STANDING ORDERS

Version – Summer 2000

Table of Contents - Pediatric

PRE-HOSPITAL ORO-TRACHEAL INTUBATION
PEDIATRIC

STANDING ORDER

When the listed indications and conditions exist, a paramedic can perform oro-tracheal intubation according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. Airway control/protection

2. Ventilatory assistance

CONDITIONS

Patient is less than 40 kg.

PROCEDURE

1. Ventilate the patient, hyperoxygenating for 30 - 60 seconds with 100% oxygen.

2. Choose appropriate tube size and check cuff if using a cuffed tube.

3. If patient is responsive, squirt 1 spray Lidocaine spray into the hypopharynx or directly onto the vocal cords.

4. Intubate, confirm tube placement and secure tube.

5. If unsuccessful intubating after 30 seconds, stop and repeat steps 1 and 4.

6. For patients requiring urgent transport, if a second attempt fails at scene and repeat attempts would delay transport, they should be attempted en route.

NOTE

Naso-tracheal intubation should not be performed on patients younger than 8 years of age.

STANDING ORDER

When the listed indications and conditions exist, a paramedic can establish intravenous access according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Actual or potential need for

1. Intravenous medication.
2. Intravenous fluid therapy.

CONDITIONS

1. Patient is less than 40 kg.

PROCEDURE

1. Intravenous access will be by saline lock or IV line with 0.9% Normal Saline at the paramedic's discretion.

2. If 0.9% Normal Saline IV is required for suspected hypovolemia, the paramedic may administer a fluid bolus of 20 ml/kg prior to Base Hospital contact.

   Transport to receiving hospital should not be delayed to establish intravenous lines in either traumatic or other hypovolemic situations.

3. If an IV fluid bolus has been administered, initiate Base Hospital contact.

NOTE

1. If IV access would delay transport, IV access should be attempted en route rather than on scene.

2. When administering IV fluid resuscitation, the paramedic must carefully observe the patient for signs of fluid overload.

3. **The receiving hospital must always be notified they will be receiving a trauma patient or any patient with serious hypovolemia.**

4. If a Normal Saline IV has been started, the "Keep Vein Open" rate should be 15 ml/hr (15 mini drops/min)**.**

5. For intravenous infusions in children less than 5 years old a mini drip and buretrol should be used except if a bolus of 20 ml/kg is needed, in which case a 250 ml bag and macrodrip should be used

PREHOSPITAL INTRAOSSEOUS INFUSION
PEDIATRIC PATIENTS, LESS THAN 7 YEARS OLD

STANDING ORDER

When the listed indications and conditions exist, a paramedic can establish intraosseous access according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Critically ill patient with

1. Pre-arrest or confirmed cardiac arrest (Vital Signs Absent - VSA), hypovolemic shock, major burns or major trauma

and

2. No peripheral veins which can be accessed.

CONDITIONS

1. Patient is less than 7 years old.

PROCEDURE

1. If a child has a cardiac arrest and no peripheral veins can be palpated or seen, proceed to an Intraosseous line. Initial drug therapy should not be delayed while securing this access.

2. If a child has a cardiac arrest or appears to be in a pre-arrest state and peripheral veins can be seen or palpated, make at least one (1) attempt to establish a peripheral IV. If a peripheral IV cannot be established in 2 attempts or 90 seconds, proceed to an Intraosseous line.

3. If a child has suspected hypovolemic shock, extensive burns or major trauma, attempt to establish a peripheral IV. If an IV cannot be established in 2 attempts or 90 seconds, **contact the base hospital physician for a verbal order** to place an Intraosseous line.

NOTE

1. Maximum 2 attempts for intraosseous lines.

2. Intraosseous infusions are to be started in a tibial site only.

PRE-HOSPITAL ADMINISTRATION OF 50% DEXTROSE (HYPOGLYCEMIA) PEDIATRIC

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer 50% dextrose in water intravenously according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. An altered level of consciousness, defined as a GCS fourteen (14) or less, or active seizures/history seizure within past 1 hour.
   and
2. A blood sugar reading of $\leq$ 4 mmol/L.

CONDITIONS

Patient is less 40 kg.

PROCEDURE

1. Ensure airway, administer oxygen and apply monitor.

2. Establish IV access.

3. Test blood sugar to confirm reading of $\leq$ 4 mmol/L.

4. Administer intravenously
   a. If age 1 year or less, 0.5 gm/kg 25% Dextrose in water (this equals 2 ml/kg 25% Dextrose in water).
   b. If age 1 year - 12 years, 0.5 gm/kg 50% Dextrose in water, to maximum of 25 gm. (50 ml) (this equals 1 ml/kg 50% Dextrose in water).

5. If IV access is by Saline Lock, flush lock with 10 ml Normal Saline.

6. If **no** improvement or if additional orders are required, contact the Base Hospital.

NOTE

1. To make 25% Dextrose, 50% Dextrose is diluted 1:1 with sterile N/S from IV bag.

2. The patient should be transported to hospital for assessment. If a responsible adult signs a refusal of transport, every attempt must be made to ensure food is available, that a responsible adult can care for the patient and that they will call EMS (911) if needed.

3. IV Dextrose is very irritating if it extravasates.

PRE-HOSPITAL ADMINISTRATION OF GLUCAGON (HYPOGLYCEMIA) PEDIATRIC

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Glucagon according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

1. An altered level of consciousness [defined as Glasgow Coma score of fourteen (14) or less]

and

2. A blood sugar reading of $\leq$ 4 mmol/L

3. Cannot establish an intravenous access.

CONDITIONS

>20k – 1.0 ml.
$\leq$20k – 0.5 ml.

PROCEDURE

1. Ensure airway, administer oxygen and apply monitor.

2. Test blood sugar to confirm reading of $\leq$ 4 mmol/L.

3. Administer Glucagon dose.

4. If **no** improvement or if additional orders are required, contact the Base Hospital.

NOTE

1. The patient should be transported to hospital for assessment. If a responsible adult signs a refusal of transport, every attempt must be made to ensure that food is available, that a responsible adult can care for the patient and that they will call EMS (911) if needed.

PRE-HOSPITAL ADMINISTRATION OF DIAZEPAM (SEIZURE DISORDERS) PEDIATRIC

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Diazepam intravenously according to the following protocol:

< 1 year old	**0.5 mg IV/ PR/IO**
1 to 5 years old	**1.0 mg IV/PR/IO per year of age**
> 5 years old	**5 mg IV/PR/IO**

without establishing Base Hospital contact.

INDICATIONS

Patient who is

1. Unresponsive **and**
2. In a generalized motor seizure.

CONDITIONS

Patient is <40 kg.

PROCEDURE

1. Secure airway and assist ventilation as required.

2. Test blood glucose, confirming a level of > 4 mmol/L. If blood glucose is ≤ 4 mmol/L, treat as for hypoglycemia.

3. Establish IV access.

   Administer Diazepam over 1 minute-

< 1 year old	0.5 mg IV/PR/IO
1 to 5 years old	1.0 mg IV/PR/IO per year of age
> 5 years old	5 mg IV/PR/IO

   If the seizure stops during the administration of the drug, terminate the administration.

   If after another 2 minutes, the seizure continues or recurs, repeat administration of Diazepam, according to the dosage schedule above.

4. Monitor respiratory status.

   Diazepam administration should not be delayed. Diazepam should be administered rectally as soon as the dose is drawn up if IV access is still being attempted.

NOTE

1. Contact Base Hospital if other intervention/management is required.

PRE-HOSPITAL ADMINISTRATION OF EPINEPHRINE (ANAPHYLAXIS) PEDIATRIC

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer Epinephrine (1:1,000) 0.01 mg/kg sub Q, up to a maximum dose of 0.3 mg., according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient who

1. Has a recent history of exposure to a probable allergen

and

2. Demonstrates symptoms and signs of a severe allergic reaction

CONDITIONS

1. Patient is less than 40 kg.

2. Patient has not had 2 doses of epinephrine, either self-administered or by another person.

PROCEDURE

1. Manage airway and ventilation as indicated.

2. Administer Epinephrine (1:1,000) 0.01 mg/kg sub Q up to a maximum dose of 0.3 mg.

3. Attempt IV access.

4. Attach cardiac monitor.

5. Monitor vital signs.

6. If clinical condition does not improve, or if it deteriorates, repeat Epinephrine (1:1,000) 0.01 mg/kg sub Q up to a maximum dose of 0.3 mg, in 10 minutes.

7. If other intervention/management is required, contact Base Hospital.

STANDING ORDER

When the listed indications and conditions exist, a paramedic can administer salbutamol by nebulization as follows:

< 10 kg 1.25 mg
10-30 kg 2.5 mg
>30 kg 5.0 mg

according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient with

1. A respiratory wheeze

CONDITIONS

1. Patient is less than 40 kg.

PROCEDURE

1. Deliver salbutamol by nebulizer and O_2 at 6-8 lpm. as follows:

< 10 kg 1.25 mg
10-30 kg 2.5 mg
>30 kg 5.0 mg

Repeat salbutamol immediately if clinical condition does not approve.

For intubated patients, salbutamol will be administered via MDI and ETT spacer chamber.

For patients 0-2 years of age:
Administer 1 puff followed by 4 breaths, repeat this 3 times

For patients 2-5 years of age:
Administer 1 puff followed by 4 breaths, repeat this 4 times

For patients 5-8 years of age:
Administer 1 puff followed by 4 breaths, repeat this 6 times

For patients > 8 years of age
Administer 1 puff (100 µg) followed by 4 breaths, repeat this 8 times

Drug delivery along with patient ventilation will be provided by the ventilation bag attached to a 100% oxygen source.

NOTE

1. Base Hospital contact should be made if other intervention/management is required.

2. Administer oxygen between salbutamol doses or continuously via nasal prongs to all distressed asthmatic patients.

3. The nebulizer canister and mask are disposable.

4. Optimal volume for nebulization is 2.5 to 5 ml.

5. The patient must be transported to hospital

STANDING ORDER

When the listed indications and conditions exist, a paramedic can treat victims of cardiac arrest according to the following protocol, without establishing Base Hospital contact.

INDICATIONS

Patient who is in cardiac arrest (Vital Signs Absent - VSA)

CONDITIONS

Patient is less than 40 kg.

PROCEDURE

1. Confirm VSA by absence of spontaneous respiration and palpable pulse.

2. Secure airway.

3. Initiate therapy according to the appropriate algorithm based upon the presenting ECG rhythm.

4. If, prior to patching to the Base Hospital, the ECG rhythm changes from one pulseless rhythm to another, the paramedic will initiate procedures indicated in the algorithm appropriate for the new rhythm.

5. Patch to the Base Hospital upon:

    a) The return of a palpable pulse;

    or

    b) The *completion* of the sequence of procedures specified in the appropriate algorithm and the persistence of no palpable pulse 10 minutes after arriving at the patient's side;

    or

    c) To obtain authority to transport the patient or to pronounce the patient dead.

NOTE

1. If unable to establish a patch, continue with the appropriate algorithm(s), transport the patient and document the patch failure on the ACR.

2. Epinephrine, atropine and lidocaine may be administered by endotracheal route if intravenous access is not readily obtained.

MEDICAL CARDIAC ARREST

(less than 40 kg)

Algorithms for: **1. Ventricular fibrillation (VF)**
2. Pulseless ventricular tachycardia (VT)

CPR
*
Secure airway
*
Hyperventilate 100% 0_2
*
Defibrillate
up to 3 times if needed, 2J/kg, 4J/kg, 4J/kg
*
Establish IV
*
If still in VF or Pulseless VT
*
Epinephrine: 0.01 mg/kg IV/I0 (1:10,000, 0.1 ml/kg)
OR
Epinephrine 0.1 mg/kg ETT (1:1,000, 0.1 ml/kg)
REPEAT IN 3-5 MINUTES
*
Defibrillate 4 J/kg, 30 - 60 sec. after each medication
*
Lidocaine 1.0 mg/kg IV/I0/(2.0 mg/kg ETT)
*
Repeat Epinephrine 0.1 mg/kg IV/IO/ETT (1:1,000, 0.1 ml/kg) q 3 min
*
Repeat Lidocaine 1.0 mg/kg IV/I0(2.0 mg/kg ETT)
*
Patch

For patients 40 kg or greater use the adult arrest standing order.

(Reference PALS Textbook, 1994, page 7-9.)

Consider causes:	hypoxemia	acidosis
	hypothermia	pneumothorax (tension)
	hypovolemia	cardiac tamponade

MEDICAL CARDIAC ARREST
(less than 40 kg)

Algorithms for: **1. Asystole**
2. PEA

CPR
*
Secure airway
*
Hyperventilate (100% 02)
*
Venous access - (IV/I0)
(Do not delay pharmacology treatment)
*
Epinephrine 0.01 mg/kg IV/IO (1:10,000, 0.1 ml/kg)
OR
Epinephrine 0.1 mg/kg ETT (1:1,000, 0.1 ml/kg)
*
Repeat Epinephrine 0.1 mg/kg IV/IO/ETT (1:1,000, 0.1 ml/kg) q 3 min

Patch

For patients 40 kg or greater use the adult arrest standing order.

(Reference PALS Textbook, 1994, page 7-9.)

Consider causes: Hypoxemia
Hypothermia
Hypovolemia

Acidosis
Pneumothorax (Tension)
Tamponade (Cardiac)

PRE-HOSPITAL TREATMENT FOR HYPOTHERMIC CARDIAC ARREST PEDIATRIC

STANDING ORDER

When a patient is found to be in cardiac arrest (VSA) and convincing evidence exists that would lead the paramedic to suspect that the patient is severely hypothermic, the paramedic will treat the patient according to the following protocols **.**

INDICATIONS

Patient who is in cardiac arrest (VSA) with severe hypothermia. Severe hypothermia is defined as:

- History indicating that the patient has suffered prolonged exposure to a cold environment.
- Patient's central body temperature is cold to the touch (Chest, Abdomen, and underarms.)
- The patient's skin appears to be white /waxy in nature.
- The patient may have stiff limbs.

CONDITIONS

Patient is <40kg

PROCEDURE

Confirm cardiac arrest by the absence of spontaneous respirations and palpable central pulses. (With hypothermic patients a **30-45 sec pulse check** should be performed to ensure pulse is absent and not just bradycardic).

1. Initiate therapy according to the hypothermic algorithm.
2. Protect patient against further heat loss by removing wet garments ASAP.
3. Keep patient warm.(blankets, heater on in Ambulance. .etc)
4. Avoid rough handling of patient.

ALGORITHM FOR HYPOTHERMIC CARDIAC ARREST PEDIATRIC
(Patients < 40 kg)

Algorithms for:

Pulseless Ventricular Tachycardia (VT)
Ventricular Fibrillation (VF)

CONFIRM CARDIAC ARREST
(NO EVIDENCE OF TRAUMA)

↓

START CPR.

↓

CARDIAC MONITOR.

↓

VF- PULSELESS VT

↓

DEFIBRILLATE 2 JOULES /KG

↓

DEFIBRILLATE 4 JOULES /KG

↓

DEFIBRILLATE 4 JOULES /KG

↓

ENDOTRACHEAL INTUBATION

↓

*

TRANSPORT TO HOSPITAL

***** If there is doubt as to whether or not the patient is severely hypothermic the paramedic should continue on with the standard VF- pulseless VT algorithm or patch to BHP for further orders.

ALGORITHM FOR HYPOTHERMIC CARDIAC ARREST PEDIATRIC
(Patients < 40 kg)

Algorithms for:

Asystole
Pulseless Electrical Activity (PEA)

CONFIRM CARDIAC ARREST
(NO EVIDENCE OF TRAUMA)

↓

START CPR.

↓

CARDIAC MONITOR.

↓

ASYSTOLE

↓

ENDOTRACHEAL INTUBATION

↓

*

TRANSPORT TO HOSPITAL

***** If there is doubt as to whether or not the patient is severely hypothermic the paramedic should continue on with the standard asystole, PEA, algorithm or patch to BHP for further orders.

APPENDIX 4

PROVINCIAL MAINTENANCE OF CERTIFICATION POLICY

Summer 2000

PROVINCIAL MAINTENANCE OF CERTIFICATION

Preamble:

Upon completion of a recognized Paramedic Training Program, a paramedic must maintain certification as per Regulation 257/00 of the Revised Regulations of Ontario 1990 made under the *Ambulance Act R.S.O. 1990* as amended by the *Services Improvement Act 1997*. A person employed as a Paramedic shall be the holder of a valid document signed by the Medical Director of a Base Hospital Program designated by the Ministry of Health for that purpose.

Maintenance of Certification requires that the Paramedic:

1. Be employed by an Emergency Medical Service and work as a Paramedic, and/or Paramedic Preceptor, *(and meet the annual eligibility requirements outlined in the proposed Provincial Base Hospital Standards)* and work for a minimum of 144 scheduled hours in the previous 12 months in an emergency medical/clinical experience. If less than 144 scheduled hours has been accumulated, an evaluation may be initiated by the Medical Director to ensure competency in the skills the paramedic has been certified to perform. This will include, but not be limited to:

    i) Proof of reasonable attempts to complete 144 scheduled hours of emergency medical experience.
    ii) Documentation of practice of skills overseen by the Base Hospital.

2. Meets all Base Hospital administrative requirements including completion and submission of forms and successfully complete all Base Hospital CME requirements. Credit for equivalent learning will be at the discretion of the Medical Director. If a Paramedic is absent from CME, the Paramedic is responsible for contacting the Program Director to make arrangements to successfully complete the CME objectives.

3. Demonstrates competency and adherence to standards, protocols and legislation associated with the performance of Controlled Acts and the provision of patient care at their level of certification. This will be determined through Base Hospital CQI initiatives. They may include, but are not limited to:

Chart Audits
Peer Review
Rideouts
Dispatch/Base Hospital Physician Communication Review
Patch/Communication Review
Field Performance Evaluation
Successful Performance at CME

Review of Skills Inventory

If at anytime in the judgment of the Base Hospital Medical Director, conditions have not been maintained, the Base Hospital Medical Director may deactivate/decertify the Paramedic. The employer of the paramedic will be given written notice by the Base Hospital. The Paramedic will be notified verbally immediately by the employer followed by written notice from the Base Hospital.

The Paramedic will not be authorized to perform Controlled Acts while they are deactivated/decertified. The conditions for reactivation/recertification will be determined by the Base Hospital. The conditions will be communicated in writing to the Paramedic.

Should a Paramedic fail to successfully complete the prescribed reactivation process, the Medical Director may prescribe further remediation or decertify the Paramedic from the Program.

4. Adhere to the Paramedic Conduct Directives. The Paramedic Conduct Directives will apply whenever paramedics participate in on-duty assignments or duties related to the certification processes endorsed by individual Base Hospital Programs. These Directives will be routinely evaluated and uniformly enforced by the employer.

Clarification of Terms:

Base Hospital means a hospital that is designated as a Base Hospital by the Minister in accordance with clause 4(2)(d) of the Ambulance Act as amended by the Services Improvement Act 1997.

In this document, unless otherwise stated, the use of the following terms refer to ambulance personnel as defined by the Ambulance Act, and by Ontario Regulation 257/00:

Emergency Medical Attendant
Paramedic
Primary Care Paramedic (P1)
Advanced Care Paramedic (P2)
Critical Care Paramedic

Emergency Medical Service means an ambulance service duly licensed to perform this service as defined under the Ambulance Act.

Hours of Service means work normally defined as field assignments. Where a Paramedic has no clinical duties, but is a clinical educator/manager, working hours may be credited on the condition that at least once every 12 months the Paramedic is tested by the Base Hospital to ensure competency in the skills the paramedic has been certified to perform.

Certification:

Is written approval to perform selected medical controlled acts under the license/registration of a Base Hospital medical director.

Deactivation:

Is the temporary suspension of selected certified paramedic privileges to perform controlled acts by the Base Hospital medical director for the purpose of performing remediation.

Reactivation:

Is the reinstatement of the suspended privileges after a period of deactivation. A paramedic may be reactivated by the medical director at the time that such requirements for remediation have been met. The expense of remediation delivery (excluding paramedic attendance) will be borne by the Base Hospital.

Decertification:

Is the revocation of a certified paramedic's privileges to perform controlled acts.

GUIDELINES FOR PATIENT CARE REVIEWS

1. Complaints that do not involve patient care will be dealt with by the employer. If the Base Hospital is made aware of such complaints they will forward them to the employer and copy them to the Regional EHS manager.

2. Patient Care Concerns or Call Reviews*
   - if identified by the Base Hospital* will be copied to the employer.
   - if identified by the employer will be copied to the Base Hospital.
   - if identified by an outside source will be copied to the employer.

   The identifying party is responsible for ensuring their Regional EHS manager is notified.

   *Minor patient care concerns identified during the Continuous Quality Improvement Program normally will be communicated between the Base Hospital and the paramedic during the normal CQI process. The employer will be made aware of minor concerns from aggregate reports. If the minor patient care concern becomes repetitive the Base Hospital will inform the employer.

   The employer will investigate the complaint. The employer will provide relevant evidence gathered with written conclusions, to the other party within 2 weeks of receiving the complaint. If the investigator requires an extension this will be communicated to the other parties with a new date of completion.

3. The Base Hospital reserves the right to act on all patient care deficiencies.

To maintain and measure patient care performance the Base Hospital may perform field audits, ACR reviews and conduct other continuous quality improvement initiatives independent of complaint investigations.

PATIENT CARE DEFICIENCY CLASSIFICATIONS

If a paramedic has performed a Controlled Act(s) or any patient care below the recognized standards/guidelines, the Base Hospital response may be guided by the severity of the event(s) in accordance with the following table:

MINOR OMISSION/COMMISSION:

A minor omission/commission is defined as an action or lack of action by the paramedic that did not have any direct effect on patient morbidity, however, may have affected patient care in a minor way. If a minor deficiency is identified, the paramedic may be given verbal counselling (confirmed in writing) or written counselling via the Ambulance Call Review Process.

MAJOR OMISSION/COMMISSION:

A major omission/commission is defined as an action or lack of action by the paramedic that has affected or the potential to affect patient morbidity, however, the outcome would not be life threatening. If a major deficiency is identified, or there is a repetition of minor deficiencies, the paramedic will be given written counselling and *may* be required to complete remedial education. At the discretion of the Medical Director the paramedic *may* be deactivated.

CRITICAL OMISSION/COMMISSION:

A critical omission/commission is defined as an action or lack of action by the paramedic that has a clear affect on patient morbidity with a potentially life threatening outcome. If a critical deficiency is identified or there is a repetition of major or a combination of major and minor deficiencies the paramedic *will* be given written counselling and *will* be required to successfully complete remedial education. At the discretion of the Medical Director, the paramedic *may* be decertified.

REMEDIAL PROGRAM OPTIONS

A remedial program based on individual needs will be made available at the Base Hospital Medical Director's discretion. Base Hospital training costs will be separately funded by EHS with prior written approval.

REMEDIAL PROGRAMS MAY REQUIRE:

1. Time in clinical rotations or supplemental educational processes deemed necessary by the Medical Director.
2. Base Hospital recovery costs paid by the Paramedic in compliance with EHS direction.

GUIDELINES FOR DECERTIFICATION REVIEWS

DECERTIFICATION

If a Paramedic wants to have their decertification reviewed by the Base Hospital the paramedic may do so. The request for the review must be in writing and received by the Base Hospital staff within 2 weeks of being notified of a change in certification status. The Paramedic must include in the request the reason he/she thinks a review should be considered. The Paramedic must also include alternative solutions or conclusions before the review will proceed.

The review committee will consist of a Medical Director, a Program Director and a practicing certified peer paramedic from another Provincial Base Hospital Program. This process must be approved by the Ministry of Health - Emergency Health Services for any required funding. The Paramedic's submission to the review committee will be pre-circulated to the members. The purpose of the review will be to determine:

a) If the information used by the Base Hospital in its evaluation was valid.
b) The appropriateness of the Base Hospital action for the event(s) involved.
c) If the requirements for recertification are "reasonable" for the event(s).

The review committee will provide a recommendation within 48 hours.

APPENDIX 5

PROVINCIAL PARAMEDIC CONDUCT DIRECTIVES

Summer 2000

PROVINCIAL BASE HOSPITAL ADVISORY GROUP
PARAMEDIC CONDUCT DIRECTIVES

PREFACE

The Conduct Directives for Paramedics summarizes what is expected of all paramedics certified in one or more Controlled Acts delegated by a Base Hospital Physician.

Please note that the Conduct Directives do not include all of the standards of behaviour expected of paramedics but rather, they focus on key areas. As a result, paramedics should familiarize themselves with the Maintenance of Certification Policy. Each paramedic will have a copy of the above document available to them.

Paramedics who fail to meet the expected standards of conduct will be subject to review and counseling by the Base Hospital and may be required to undergo a program to ensure that future conduct will meet the expected standards.

PURPOSE

The Conduct Directives for paramedics has been developed to ensure that paramedics maintain a standard of conduct and know what is expected of them in:

a) Their relations with their co-workers and the public;
b) Their action/inaction regarding patient care;
c) Matters involving confidentiality and conflict of interest.

OVERALL EXPECTATION

It is expected that paramedics will live up to the highest standards of conduct in their relations with their co-workers, the Ministry, Base Hospital, persons with whom they conduct business (including education) and/or provide care and the public in general.

It is also expected that any knowledge of serious misconduct will be reported to the Base Hospital Program.

STANDARDS OF CONDUCT

1. PARAMEDIC RELATIONS

A paramedic shall:

a) Respect and pay due regard to the privacy and dignity of his/her fellow employees, allied health personnel and physicians.

b) Attempt to establish and maintain good working relationships with business associates and the public.

2. PARAMEDIC CONDUCT

A. A paramedic shall:

a) Observe Policies, Procedures, Protocols and Standing Orders.

b) Discharge his/her duties with honesty, diligence, efficiency and integrity.

c) Respect patients rights.

d) Conserve life, alleviate pain and suffering and promote health.

e) Demonstrate empathy and compassion for patients and their families.

f) Protect and maintain the patients safety, dignity and privacy.

g) Recognize the importance of self-assessment and of continuing education and the willingness to teach others in their own field as well as other allied health care personnel.

B. Behaviour unacceptable to the practice of a paramedic includes but is not limited to:

a) Misrepresentation of his/her qualifications and credentials when performing Delegated Controlled Acts.

b) Falsification of medical records.

c) Sexual impropriety with a patient

d) Refusal or neglecting to serve citizens requiring services which are part of the normal performance of his/her duties given their current certification status.

e) Theft of drugs.

f) Violation of the criminal code.

g) Threatening or using violent behaviour.

h) Being under the influence of or affected by illegal drugs, controlled substances or alcohol during working hours.

i) Any other conduct unbecoming of a practicing paramedic.

3. DISCRIMINATION AND HARASSMENT

Paramedics must maintain a work environment which is free from harassment in any form, and must correct work situations which have resulted in the harassment of employees/patients.

The following behaviour will, therefore, not be tolerated:

a) Discrimination and harassment based on race, ancestry, place of origin, ethnic origin, citizenship, creed, sex, sexual orientation, age, marital status, or handicap.[1]

b) Sexual advances, unwanted or inappropriate actions, comments or other inappropriate behaviour.[2]

c) Use of racial, sexual or religious slurs or remarks, jokes or conduct.

4. CONFIDENTIALITY

Strict confidentiality must be maintained. Every paramedic must, therefore, sign an oath of confidentiality.

Any breach of this oath may result in dismissal (as determined by the employer) or de-certification (as determined by the Medical Director of the Base Hospital).

Confidential Information Includes:

a) All documents, reports, letters, forms, microrecords, and equipment software containing information which can be used to identify an individual and is of a personal nature e.g. a medical record.

b) Information obtained through one's position which is not available to the public in general.

c) Names, addresses, and medical information of patients.

d) If a paramedic is in doubt as to whether information is of a confidential nature, guidance should be sought from their supervisor or Base Hospital.

[1] *Ontario Human Rights Code, 1981,* S.O. 1981, c.53, sections 1 & 4(2)
[2] *Ontario Human Rights Code, 1981,* S.O. 1981, c.53, s.6(3)

5. DISCLOSURE OF CONFIDENTIAL INFORMATION

Personal information on patients and employees shall not be disclosed to anyone EXCEPT:

a) When the person to which the information relates has consented to its disclosure.[3]

For example, it is acceptable to disclose confidential information with formal written consent of the person for a specified purpose.

b) Where disclosure is made to a person or organization who needs the information in the performance of his/her duties and where disclosure is necessary and proper.

For example, it is acceptable for an Emergency Medical Attendant to disclose the contents of a patient's ACR form to medical staff at a receiving hospital.

c) In compassionate circumstances, to facilitate contact with the next of kin or a friend (or relative) of an individual who is injured, ill or deceased.[4]

d) For the purpose of complying with an Act of the Legislature or an Act of Parliament or a treaty agreement or arrangement thereunder.[5]

For example, it is acceptable to disclose confidential patient information to a person in possession of a subpoena or order issued under the Coroners Act.

e) Where disclosure is to an institution or a law enforcement agency in Canada to aid an investigation undertaken with a view to a law enforcement proceeding or from which a law enforcement proceeding is likely to result.[6]

For example, verbal or written information provided to Canadian police in the form of an interview, written statement, or official document is acceptable if the recipient is in possession of a subpoena, or search warrant.

[3] *Freedom of Information and Protection of Privacy act, 1987,* S.O. 1987, c.25, section 41(a)
[4] *Ibid.,* Section 42(d)
[5] *Ibid.,* Section 42(i)
[6] *Ibid.,* Section 42(e)