Firefighter Medical Directives

Hamilton Health Sciences

CENTRE FOR PARAMEDIC EDUCATION AND RESEARCH

LAST REVISED 2026-02-13

The Centre for Paramedic Education and Research has agreed to provide medical direction and develop a Continuous Quality Improvement Program for for several area Fire Departments. These medical directives outline the standards to which the Fire Departments will provide patient care when dealing with a patient in cardiac arrest or peri-arrest state.

This Firefighter guide contains resuscitation guidelines consistent with the consistent with the 2025 Heart and Stroke BLS guidelines as well as the Ministry of Health and Long-Term Care Training Bulletin, Issue 111 – version 1.0 Deceased Patient Standard.

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Introduction

Purpose of Standards

These Firefighter Medical Directives are designed to guide the specifics of patient care delivered by Firefighters prior to Paramedic arrival and ensure the practices utilized are current with prehospital resuscitation guidelines when caring for a patient in a Cardiac Arrest or Peri-arrest state.

Summary

The Firefighter Medical Directives establish practice and patient care parameters needed to provide high quality patient care for the cardiac arrest / peri-arrest patient prior to Paramedic arrival. The directives are designed to be dynamic, in order to allow for changes based upon new medical evidence and / or standards of medical practice.

Use of the Medical Directives by Firefighters

These medical directives apply to Firefighters who provide patient care under the license and / or authority of the CPER Medical Director. Delegation of controlled acts or other procedures in these medical directives to Firefighters falls under the exclusive oversight of the CPER Medical Director.

The medical directives are designed to guide a Firefighter in the provision of timely and appropriate care to cardiac arrest / peri-arrest patients in the prehospital setting prior to the arrival of Paramedics. While great care has been taken in developing these medical directives, they cannot account for every clinical situation. Thus, they are not a substitute for sound clinical judgement.

General Structure of a Medical Directive

All medical directives follow the same format and are comprised of the following sections:

Written Management Process:	Description of the type of procedure to be performed
Algorithm Directive:	Although written in a linear fashion it is understood several tasks may / should be done simultaneously.

The Firefighter who proposes a treatment to a person shall ensure that consent is obtained. Valid consent requires that a person has the capacity to provide the consent.

Responsibility of Care

While on scene and prior to EMS Paramedic arrival, decisions on patient care are the responsibility of the fire crew in whole. Resuscitation for a patient in cardiac arrest should be initiated unless the patient is "obviously dead" (definition to follow) or a valid Do Not Resuscitate Confirmation Form is found for the patient.

Sometimes resuscitation is initiated but then subsequently the patient is found to be obviously dead or a valid Do Not Resuscitate Confirmation Form is found; resuscitation can be discontinued by the fire crew in these two instances. In all other cases, it is expected that if the fire crew initiates resuscitation, they would continue until transferring care to the EMS Paramedic team.

When transferring care to the Paramedic crew the reporting Firefighter shall attempt to provide:

- a history of the patient's current problem(s) and relevant past medical history
- pertinent physical findings
- a summary of management prior to EMS arrival
- the patient's response to treatment, including most recent vital signs

Occasionally, the cardiac arrest patient will be in an area that cannot be accessed by Paramedics and the only rescuers are Firefighters. The Firefighters would typically inform the highest qualified nearby Paramedic of the patient's status, and the Paramedic would contact the Base Hospital Physician for termination of resuscitation if necessary. An additional consideration when extricating a patient in cardiac arrest is if continued CPR puts rescuers at risk or cannot be continued for more than five minutes. In this case, the Base Hospital Physician can be contacted early via a Paramedic for consideration of termination of resuscitation.

Definitions

Age (for Cardiac Arrest / Bradycardia Directives)

- Adult Patient:
  - Any patient who has reached puberty and older for CPR guidelines. (Underarm hair for males, breast development for females)
  - Any patient ≥ 8 years old for AED guidelines
- Child (Pediatric) Patient:
  - Age ≥ 1 year old to puberty for CPR guidelines
  - Age ≥ 1 year old to < 8 years old for AED guidelines
- Infant Patient:
  - ≥ 24 hours old to < 1 year old
- Neonate Patient:
  - Birth to < 24 hours old

AED: The term "AED" has become commonly associated with a defibrillator which analyzes a cardiac rhythm, automatically charges when a shockable rhythm is identified, but requires an operator to press the "shock" button. For the purposes of this document the term AED will be used to describe the defibrillation devices utilized by the Fire Department. The Firefighter will be required to press the "shock" button when prompted to by the machine.

Deceased Person

- Deceased Patient: means a patient who is:
  - Obviously dead (see definition);
  - without vital signs and the subject of a Do Not Resuscitate Confirmation Form (See Appendix A)

- the subject of a medical certificate of death, presented to the Paramedic crew, in the form that is prescribed by the *Vital Statistics Act* and that appears on its face to be completed and signed in accordance with that Act;
- without vital signs and the subject of a Termination of Resuscitation Order given by a physician to a Paramedic, including a Base Hospital Physician; or
- without vital signs and the subject of a Withhold Resuscitation Order given by a physician to a Paramedic, including a Base Hospital Physician

- **Legal Death**: exists only when a physician or RN has certified death. (Completion of the Medical Certificate of Death).
- **Obviously Dead:** means death has occurred if gross signs of death are obvious, including the reason of :
  - Decapitation (head off body), transection (body split into two or more), visible decomposition (decayed body), putrefaction (rotting of body); or
  - Absence of vital signs and:
  - a grossly charred body (burned black)
  - an open head or torso wounds with gross outpouring of cranial or visceral contents (brains and guts spilled out of body)
  - gross rigor mortis (i.e. limbs and/or body stiff, posturing of limbs or body); or
  - lividity (dark purple or black discolouration of skin in lower area of body due to gravity, this discolouration does not change if firm pressure is applied to skin or with changing the position of body).

Research

Clinical research is fundamental to the practice of medicine and the development of safer, more effective treatment options for patients. At times, research protocols require temporary changes to medical directives. In recognition of the importance of prehospital clinical research, CPER Medical Directors may delegate changes in medical directives to Firefighters if the research-related treatment is endorsed by the appropriate organizations including the Fire Service Management and ethics review board. Changes to medical directives will be introduced as an auxiliary medical directive. Upon completion of a prehospital clinical trial, research-related treatment must be halted and care as prescribed in the original medical directives must resume.

List of Abbreviations

A

ACP	Advanced Care Paramedic
ALS	Advanced Life Support

B

BLS	Basic Life Support
BPM	Beats per Minute **OR** Breaths per Minute
BVM	bag-valve-mask

C

CCP	Critical Care Paramedic
CO	carbon monoxide
CPR	Cardiopulmonary Resuscitation
CTAS	Canadian Triage and Acuity Scale

E

ECG	electrocardiogram
$ETCO_2$	end tidal carbon dioxide
ETT	endotracheal tube

F

FiO_2	fraction of inspired oxygen

G

g	gram
GCS	Glasgow Coma Scale

H

HR	heart rate
Hx	history
HSF	Heart and Stroke Foundation

K

kg	kilogram

L

LOA	level of awareness
LOC	level of consciousness **OR** loss of consciousness

R

ROSC	return of spontaneous circulation

S

SpCO	Carbon monoxide saturation
SpO2	Oxygen saturation

V

VSA	vital signs absent

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Cardiac / Circulation

FIREFIGHTER MEDICAL DIRECTIVES

Adult Cardiac Arrest Management

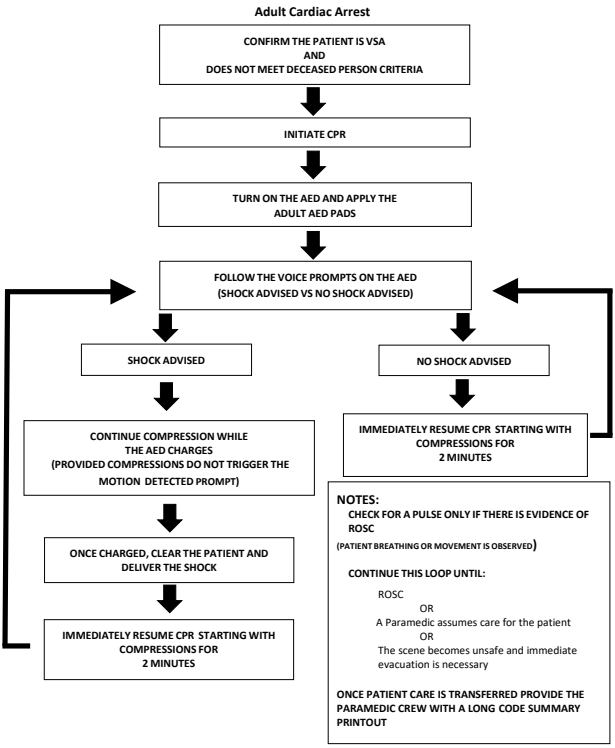
- As per HSF BLS standards confirm the patient is Vital Signs Absent
  - Unresponsive **AND**
  - Absent or Abnormal or Agonal Respirations **AND**
  - Absent Carotid Pulse
- Initiate CPR as per HSF BLS guidelines
  - Two rescuer 30:2 utilizing a BVM and ensuring Firefighters:
    - Push hard to a depth of at least 5 cm but not more than 6 cm (use of a CPR feedback device is recommended)
    - Push fast at a rate of at least 100 compressions per minute but not more than 120. (If the AED is equipped with a cadence device it is recommended this be utilized)
    - Allow the chest to fully recoil between compressions
    - Rotate compressor every 2 minutes
    - Provide ventilations which produce gentle chest rise
    - **MINIMIZE** interruptions in compression

If hypothermia is suspected:

- If trained, follow BICO guidelines.
- Attempt to prevent further heat loss. If available, apply heat to upper trunk.
- Follow standard BLS AED guidelines (if "no shock advised" and the firefighter suspects severe hypothermia, consider assessing pulse/breathing for up to one minute).
- Oropharyngeal airway placement and gentle suctioning if required are acceptable procedures. Vigorous airway procedures and suctioning should be avoided due the increased risk of ventricular fibrillation.
- Handle patient gently and attempt to maintain horizontal positioning.
- All hypothermic patients should receive a maximum of one defibrillation attempt. After one shock the focus should be on performing quality CPR until paramedics arrive and assume care.

- Apply the AED utilizing the Adult pads as soon as possible and follow the voice prompts
- Continue to follow the voice prompts until:
  - Return of spontaneous circulation (ROSC) OR
  - A Paramedic assumes care for the patient OR
  - The scene becomes unsafe and immediate evacuation is necessary
- Once transfer of patient care has occurred to the Paramedic crew and the patient is no longer on the Fire Department AED, print off a "long" code summary if your AED is capable. The long code summary will illustrate all cardiac rhythms including the initial rhythm. The Paramedic crew can then provide this information to the ED staff.
- If narcotic overdose is suspected in adult cardiac arrest, the firefighter may give one dose naloxone without interrupting CPR or defibrillation. The firefighter may consider additional doses of naloxone, as long as effective CPR and defibrillation can be maintained. The patient must be

Adult Cardiac Arrest Algorithm



Pediatric / Infant
Cardiac Arrest Management

- As per HSF BLS standards confirm the patient is Vital Signs Absent
  - Unresponsive **AND**
  - Absent or Abnormal or Agonal Respirations **AND**
  - Absent Carotid Pulse
- Initiate CPR as per HSF BLS guidelines
  - Two rescuer 15:2 utilizing a BVM and ensuring Firefighters:
    - Push hard to a depth of 1/3 anteroposterior (AP) depth of the thorax, about 4 cm in infants and about 5 cm in pediatrics (children)
    - Push fast at a rate of at least 100 compressions per minute but not more than 120. (If the AED is equipped with a cadence device it is recommended this be utilized)
    - Allow the chest to fully recoil between compressions
    - Rotate compressors every 2 minutes
    - Provide ventilations which produce gentle chest rise
    - **MINIMIZE** interruptions in compressions

If hypothermia is suspected:

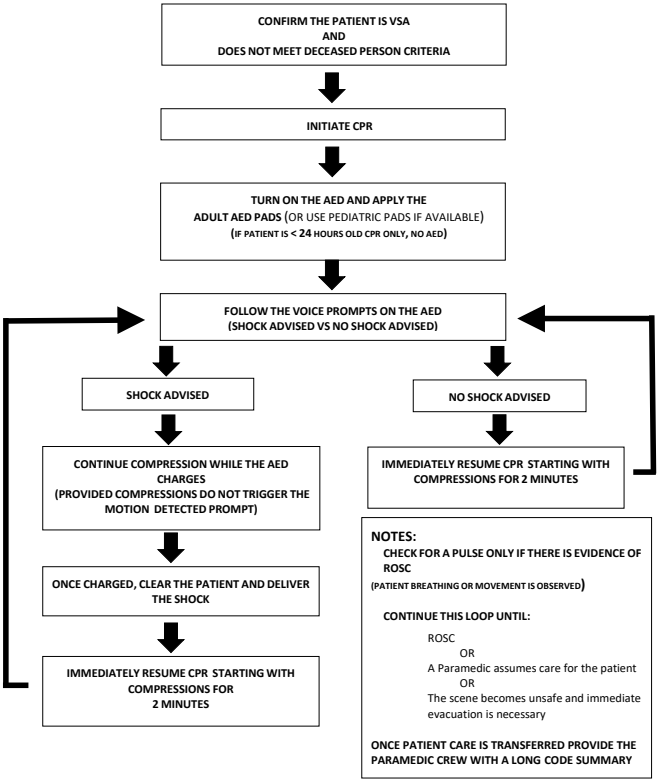
- If trained, follow BICO guidelines.
- Attempt to prevent further heat loss. If available, apply heat to upper trunk.
- Follow standard BLS AED guidelines (if "no shock advised" and the firefighter suspects severe hypothermia, consider assessing pulse/breathing for up to one minute).
- Oropharyngeal airway placement and gentle suctioning if required are acceptable procedures. Vigorous airway procedures and suctioning should be avoided due the increased risk of ventricular fibrillation.
- Handle patient gently and attempt to maintain horizontal positioning.
- All hypothermic patients should receive a maximum of one defibrillation attempt. After one shock the focus should be on performing quality CPR until paramedics arrive and assume care.

- Apply the AED utilizing the Adult pads as soon as possible and follow the voice prompts (or use pediatric pads if available)
- Pad position may need to be modified to an Anterior / Posterior location to accommodate very small children / infants.
- Continue to follow the voice prompts until:
  - Return of spontaneous circulation (ROSC) OR
  - A Paramedic assumes care for the patient OR
  - The scene becomes unsafe and immediate evacuation is necessary
- Once transfer of patient care has occurred to the Paramedic crew and the patient is no longer on the Fire Department AED, print off a "long" code summary if your AED is capable. The long code summary will illustrate all cardiac rhythms including the initial rhythm. The Paramedic crew can then provide this information to the ED staff.

NOTE:

- Pulse checks on infants should be assessed at the brachial artery (inside of upper arm between the axilla and elbow), and on children > 1 year old at the carotid artery in the neck.
- All patients <24 hours of age will receive CPR at a 3:1 ratio for compressions:ventilations
- Once care of a pediatric patient < 8 years of age is transferred to a Paramedic and manual defibrillation is utilized the Paramedics may elect to change to Pediatric Pads.

Pediatric / Infant Cardiac Arrest Algorithm

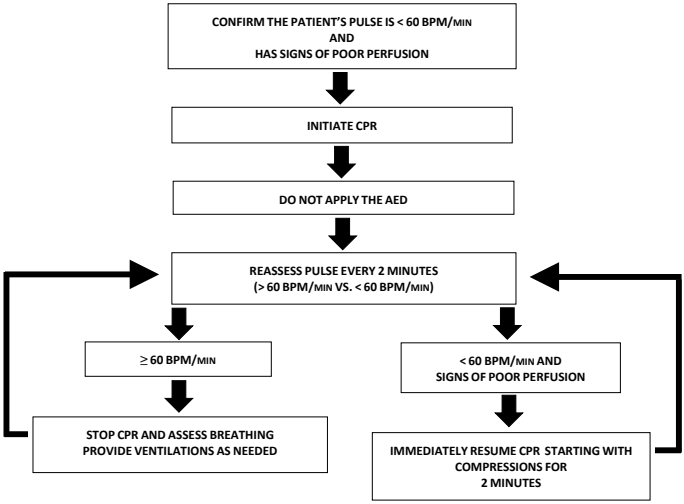


Pediatric / Infant Severe Bradycardia

- As per HSF BLS standards confirm the patient has a pulse < 60 BPM/min **AND** signs of poor perfusion
  - Altered Mental Status (unresponsive) **AND** any of the following
  - Cyanosis (bluish colouring around lips or in nail beds)
  - Mottling (skin looks marbled / patchy)
  - Cool extremities
  - Weak pulses
- Initiate CPR as per HSF BLS guidelines
  - Two rescuer 15:2 utilizing a BVM and ensuring Firefighters:
    - Push hard to a depth of 1/3 anteroposterior (AP) depth of the thorax, about 4 cm in infants and about 5 cm in pediatrics (children)
    - Push fast at a rate of at least 100 compressions per minute but not more than 120. (If the AED is equipped with a cadence device it is recommended this be utilized)
    - Allow the chest to fully recoil between compressions
    - Rotate compressors every 2 minutes
    - Provide ventilations which produce gentle chest rise
    - **MINIMIZE** interruptions in compressions
- **DO NOT** apply the AED unless the pulse is unobtainable and the patient is VSA.
- Continue CPR until:
  - The patient becomes responsive OR
  - The pulse rate increases to > 60 BPM/min OR
  - A Paramedic assumes care for the patient and directs you to stop OR
  - The scene becomes unsafe and immediate evacuation is necessary
- Assess the pulse rate every 2 min. If the pulse becomes undetectable refer to the *Pediatric / Infant Cardiac Arrest Guideline.*

NOTE: Pulse checks on infants should be assessed at the brachial artery (inside of upper arm between the axilla and elbow), and on children > 1 year old at the carotid artery in the neck.

Pediatric / Infant Severe Bradycardia Algorithm



NOTES:

IF NO PULSE IS FOUND REFER TO THE PEDIATRIC / INFANT CARDIAC ARREST GUIDELINE

SIGNS OF POOR PERFUSION INCLUDE:

ALTERED MENTAL STATUS (UNRESPONSIVE) AND ANY OF THE FOLLOWING:

Cyanosis (bluish colouring around lips or in nail beds)
Mottling (skin looks marbled / patchy)
Cool extremities
Weak pulses

CONTINUE CPR UNTIL:

The patient becomes responsive OR
The pulse rate increases to ≥ 60 BMP/min OR
A Paramedic assumes care for the patient and directs you to stop OR
The scene becomes unsafe and immediate evacuation is necessary

Neonatal Support

- Initial Assessment of a neonate:
  - Assess if the patient was a term delivery, with good muscle tone and good breathing or crying.
  - If the above is present, place the newborn on the mother's chest and ensure they are covered and dry. Wipe the mouth and then the nose of any secretions and monitor both the mother and newborn.

- If the neonate is NOT breathing or crying well, or if the patient is less than full term or has poor muscle tone:
  - **For 30 seconds**, provide warmth, position the airway, dry, stimulate, and reposition, and evaluate heart rate and respirations.

- If the patient is breathing and has a heart rate ≥100 BPM, the patient will then need supportive care and monitoring only.

  If the patient is not breathing effectively or if the patient has a heart rate <100 BPM:

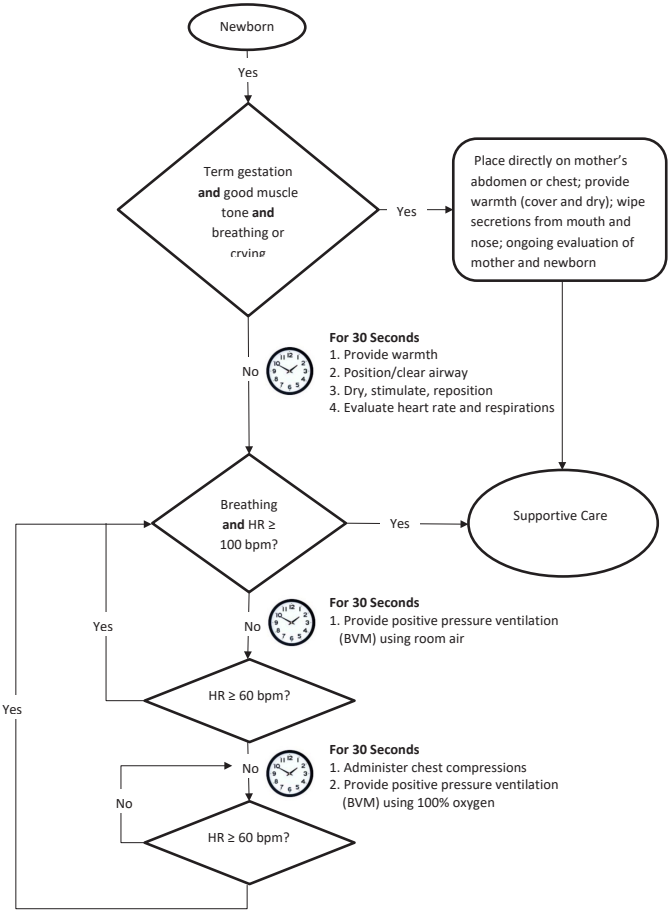
  - **For 30 seconds**, provide positive pressure ventilation (PPV) by BVM using **room air only**.
  - Care must be taken to avoid hyperventilation. The Firefighter managing the BVM must pay close attention to rate and volume of ventilations delivered.

- If the patient is not breathing effectively or if the patient has a heart rate between 60-100 BPM, continue providing PPV by BVM using room air only. Reassess every 30 seconds.

  If the patient is not breathing effectively and has a heart rate <60 BPM:
  - Administer chest compressions (3:1 ratio)
  - Provide positive pressure ventilation (PPV) by BVM with 100% oxygen.

- Reassess patient every thirty seconds until patient is breathing well and heart rate is above 100 BPM, or until care is transferred to the responding Paramedics.

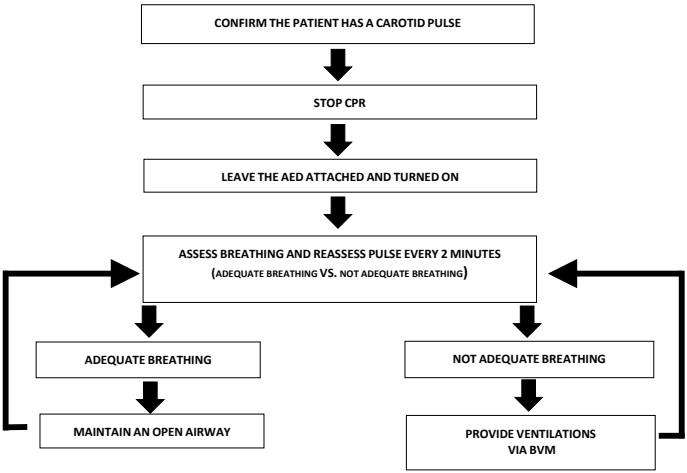
Neonatal Support Algorithm



Adult Return of Spontaneous Circulation Management

- In the event a patient has a ROSC as evidenced by the presence of a carotid pulse during resuscitation efforts, the Firefighter will:
  - For the **ADULT** patient:
    - Stop CPR
    - Leave the AED attached and turned on
      - The AED will continue to "analyze" the heart rhythm every two minutes. This is valuable should the patient rearrest into a shockable rhythm.
      - The Firefighter should also reassess for a pulse at least every 2 minutes. If at any point a carotid pulse is not found OR the AED gives a "Shock Advised" prompt refer to the *Adult Cardiac Arrest Guideline.*
    - Assess respiratory effort for adequacy
    - If a carotid pulse is present but breathing is not adequate (< 10 / min and / or very shallow) provide BVM ventilations 1 breath every 5 to 6 seconds (10 – 12 / min)
      - Care must be taken to avoid hyperventilation. The Firefighter managing the BVM must pay close attention to rate and volume of ventilations delivered.
    - If BVM Ventilations are not required then the Firefighter should assist the unconscious patient to maintain an open airway with positioning (semi – prone / recovery if no trauma), or supine with Jaw Thrust if trauma is suspected.
    - Continue above until care is transferred to the responding Paramedics.

Adult Return of Spontaneous Circulation Algorithm



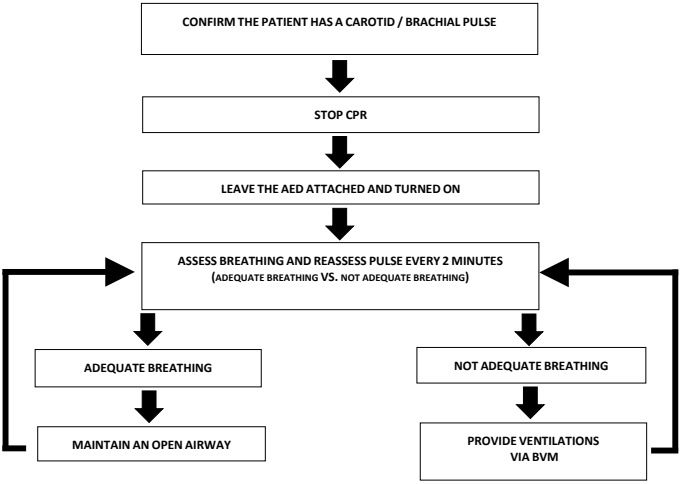
NOTES:

The AED will continue to "analyze" the heart rhythm every two minutes. This is valuable should the patient rearrest into a shockable rhythm.
The Firefighter should also reassess for a pulse at least every two minutes. If at any point a carotid pulse is not found OR the AED gives a "Shock Advised" prompt refer to the *Adult Cardiac Arrest Guideline.*
If a carotid pulse is present but breathing is not adequate (< 10 / min and / or very shallow) provide BVM ventilations 1 breath every 5 to 6 seconds (10 – 12 / min)
Care must be taken to avoid hyperventilation. The Firefighter managing the BVM must pay close attention to rate and volume of ventilations delivered.

Pediatric / Infant
Return of Spontaneous Circulation Management

- For the **Pediatric / Infant** patient:
  - Stop CPR
  - Leave the AED attached and turned on
    - The AED will continue to "analyze" the heart rhythm every two minutes. This is valuable should the patient rearrest into a shockable rhythm.
    - The Firefighter should also reassess for a pulse at least every two minutes. If at any point a carotid / brachial pulse is not found, OR is present but at a rate of < 60 BPM/min with signs of poor perfusion OR the AED gives a "Shock Advised" prompt refer to the *Pediatric Bradycardia* OR *Cardiac Arrest Guidelines.*
  - Assess respiratory effort for adequacy
  - If a carotid / brachial pulse is present but breathing is not adequate (< 20 / min for infants or < 12 / min for children and / or very shallow) provide BVM ventilations 1 breath every 3 to 5 seconds (12 – 20 / min)
    - Care must be taken to avoid hyperventilation. The Firefighter managing the BVM must pay close attention to rate and volume of ventilations delivered.
  - If BVM Ventilations are not required then the Firefighter should assist the unconscious patient to maintain an open airway with positioning (semi – prone / recovery if no trauma), or supine with Jaw Thrust if trauma is suspected.
  - Continue above until care is transferred to the responding Paramedics.

Pediatric / Infant
Return of Spontaneous Circulation Algorithm



NOTES:

The AED will continue to "analyze" the heart rhythm every two minutes. This is valuable should the patient rearrest into a shockable rhythm.

The Firefighter should also reassess for a pulse at least every two minutes. If at any point a carotid / brachial pulse is not found, OR is present but at a rate of < 60 BPM/min with signs of poor perfusion OR the AED gives a "Shock Advised" prompt refer to the *Pediatric Bradycardia* OR *Cardiac Arrest Guidelines.*

If a carotid / brachial pulse is present but breathing is not adequate (< 20 / min for infants or < 12 / min for children and / or very shallow) provide BVM ventilations 1 breath every 3 to 5 seconds (12 – 20 / min)

Care must be taken to avoid hyperventilation. The Firefighter managing the BVM must pay close attention to rate and volume of ventilations delivered.

Airway / Breathing

FIREFIGHTER MEDICAL DIRECTIVES

Anaphylaxis Medical Directive

A Firefighter may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Anaphylaxis as recognized by the following:

1. Exposure to a known or likely allergen;

AND

2. An acute reaction involving one major body system, excluding urticaria. Urticaria as a single symptom should not be considered as anaphylaxis.

- Skin or oral mucosa (urticarial/hives, swollen lips, or swollen tongue. May also have hoarse voice or difficulty swallowing)
- Respiratory (difficulty breathing, wheeze, or stridor)
- Vascular (reduced blood pressure (<90 mmHg or syncope/fainting)
- Gastrointestinal (GI) (persistent vomiting, or diarrhea)

CONDITIONS

Epinephrine	
AGE:	≥ 2 year old
WEIGHT:	≥ 15Kg
LOA:	N/A
HR:	N/A
RR:	N/A
SBP:	N/A
Other:	

CONTRAINDICATIONS

Epinephrine

Allergy or sensitivity to epinephrine

TREATMENT

Consider **epinephrine auto-injector**:

	Age ≥ 2 years - < 8 years **Route** intramuscular	**Age** ≥ 8 years **Route** intramuscular
Dose	0.15 mg EpiPen Jr.	0.3 mg EpiPen
Max. dose	1 injection	1 injection
Dosing interval	Minimum 5 min.	Minimum 5 min.
Max. # of doses	2	2

CLINICAL CONSIDERATIONS

A firefighter may administer a maximum of 2 doses of epinephrine regardless of doses administered prior to firefighter contact. If the patient has received epinephrine prior to firefighter contact, attempt to determine the time of administration. In an estimated 5 minutes, if the patient meets the criteria of the Anaphylaxis Medical Directive consider another administration.

A patient suspected of having an allergic reaction should be assessed by paramedics. Any patient exhibiting signs and symptoms of shortness of breath or airway compromise after eating must be assessed for foreign body obstruction before administering epinephrine.

EpiPen Jr, is recommended for children ≥ 15Kg to < 30Kg and EpiPen is recommended for adults > 30Kg. Age based dosing is used to align with first aid training.

Carbon Monoxide Exposure

- Carbon Monoxide is a colourless, odourless gas that is produced during combustion reactions. It can cause profound hypoxia in patients exposed to the gas, even if only for a few minutes. Patients who are hypoxic due to exposure to carbon monoxide may have normal oxygen saturations on a monitor. Patients should be treated with high flow oxygen based solely on the criteria of exposure.

- Elevated ambient carbon monoxide levels should be suspected in all building fires, any sustained exposure to enclosed vehicle exhaust, and any unvented combustion source (ie. Barbecue used indoors, malfunctioning heater, etc). Carbon monoxide levels should also be assessed for any environment where a CO detector has been activated.

- Any patient who has had a potentially significant exposure to CO (symptomatic or asymptomatic) will receive high flow oxygen at 100%. This oxygen needs to be maintained until arrival at hospital.

  Potentially significant exposure examples include:

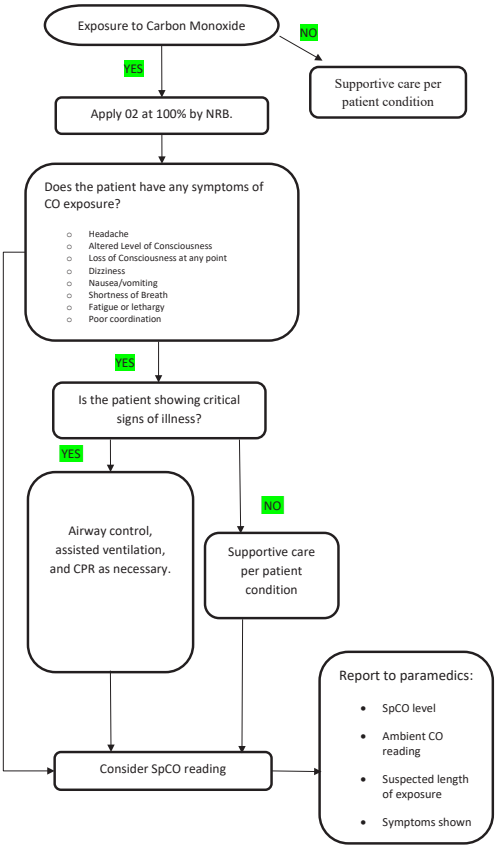
  - More than a few minutes of potential exposure based on carbon monoxide alarm alert, fire department detector, exposure to a potential source of carbon monoxide i.e. generator in an enclosed space. Clinical judgement will be required.
  - Currently asymptomatic, but decreased level of consciousness at any point after potential exposure.
  - All intentional exposures (symptomatic or asymptomatic).

- The definitive testing for CO poisoning is done through blood gas exam. Some Fire Departments may have finger SpCO monitors as part of their equipment. It is appropriate to obtain a SpCO reading as part of the vital signs, after 100% oxygen has been initiated. The SpCO reading may be a useful piece of information that the hospital can use as a reference to care.

- If the patient shows any critical signs of illness, including but not limited to altered LOC, respiratory distress, or cardiac arrest, the firefighters will perform airway control, ventilation, or CPR as necessary.

- Documentation of all CO-exposed patients should include length of exposure and ambient concentration recorded, SpCO reading found, symptoms reported, and a minimum of one full set of vital signs. This information should also be reported to the transporting paramedic crew on transfer of care.

Carbon Monoxide Exposure Algorithm



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Level of Consciousness

FIREFIGHTER MEDICAL DIRECTIVES

Opioid Toxicity Medical Directive

A Firefighter may provide the treatment prescribed in this Medical Directive if authorized.

INDICATIONS

Altered LOC;

AND

Respiratory depression;

AND

Inability to adequately ventilate OR persistent need to assist ventilations and EMS ETA is significantly delayed - use clinical judgement

AND

Suspected opioid overdose

CONDITIONS

Naloxone	
AGE:	≥ 12 years
LOA:	Altered
HR:	N/A
RR:	< 10 breaths/min
SBP:	N/A
Other:	N/A

CONTRAINDICATIONS

Naloxone
Allergy or sensitivity to naloxone

TREATMENT

Consider **naloxone**

	Route Intranasal	
Dose	4 mg	
Max. single dose	4 mg	
Dosing interval	2-3 minutes	Alternate nostrils with repeat doses
Max. # of doses	N/A	Repeat as required until EMS arrival or supply is exhausted

CLINICAL CONSIDERATIONS

If adequate ventilation and oxygenation can be accomplished with a BVM and basic airway management, this is preferred over naloxone administration. If adequate ventilation and oxygenation cannot be accomplished as evidenced by chest rise/fall and or spO2 ≥ 92%, consider naloxone administration.

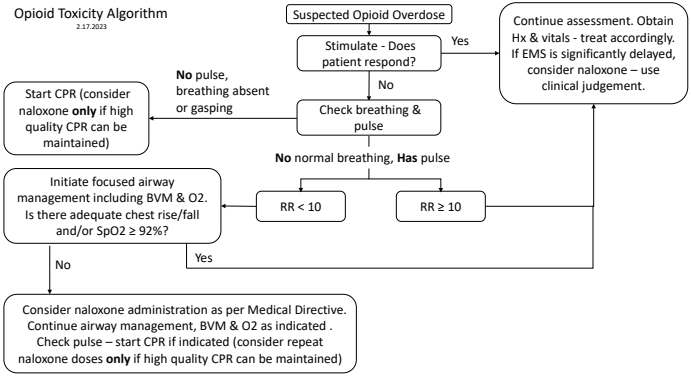
During situations such as COVID-19 pandemic, firefighters should consider naloxone administration without the requirement of an “Inability to adequately ventilate.” In the event of a declared respiratory outbreak, Firefighters should refer to OBHG for any specific outbreak direction. Please refer to Respiratory Outbreak Opioid Toxicity Algorithm, p. 39

Ventilation with a BVM is considered an AGMP (aerosol generating medical procedure). Providers should wear appropriate PPE including a N95 mask, maintain a tight mask seal with a 2 handed, 2 person technique and ventilate with a BVM equipped with an inline submicron hydrophobic filter placed as close as possible to the patient.

Naloxone may unmask alternative toxidromes in mixed overdose situations (leading to possible seizures, hypertensive crisis etc.).

Naloxone is shorter acting than most narcotics and these patients are at high risk of having a recurrence of their narcotic effect. Every effort should be made to convince the patient to stay on scene until paramedics arrive.

Combative behaviour should be anticipated following naloxone administration and firefighters should protect themselves accordingly.


Opioid Toxicity Algorithm
2.17.2023
Suspected Opioid Overdose
Stimulate - Does patient respond?
Yes
Continue assessment. Obtain Hx & vitals - treat accordingly. If EMS is significantly delayed, consider naloxone – use clinical judgement.
No
Check breathing & pulse
No pulse, breathing absent or gasping
Start CPR (consider naloxone only if high quality CPR can be maintained)
No normal breathing, Has pulse
RR < 10
RR ≥ 10
Initiate focused airway management including BVM & O2. Is there adequate chest rise/fall and/or SpO2 ≥ 92%?
No
Yes
Consider naloxone administration as per Medical Directive. Continue airway management, BVM & O2 as indicated . Check pulse – start CPR if indicated (consider repeat naloxone doses only if high quality CPR can be maintained)

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Medical References

FIREFIGHTER MEDICAL DIRECTIVES

CPR Guidelines

Component	Recommendations ★ Adults	★ Children	★ Infants
Recognition	★★★ Check for responsiveness (for all ages) ★★★ No breathing or only gasping (ie, abnormal) ★★★ No pulse palpated within 10 seconds for all ages ★★ HR < 60 and signs of hypoperfusion		
CPR sequence	★★★ C-A-B		
Compression rate	★★★ 100-120/min		
Compression depth	★ 5.0 – 6.0 cm (2.0 - 2.4 inches)	★ At least 1/3 AP diameter ★ About 5 cm (2 inches)	★ At least 1/3 AP diameter ★ About 4 cm (1 1/2 inches)
Chest wall recoil	★★★ Allow complete recoil between compressions Rotate compressors every 2 minutes		
Compression interruptions	★★★ Minimize interruptions in chest compressions Attempt to limit interruptions to < 10 seconds		
Airway	★★★ Head tilt-chin lift or where trauma is suspected, jaw thrust		
Compression-to-ventilation ratio (until advanced airway placed)	★ 30:2 1 or 2 rescuers	★★ 30:2 Single rescuer ★★ 15:2 2 HCP rescuers Neonates: 3:1	
Ventilations with advanced airway (HCP)	★★★ 1 breath every 6-8 seconds (10 breaths/min) Asynchronous with chest compressions About 1 second per breath without too much force Visible chest rise		
Defibrillation	★★★ Attach and use AED as soon as available. Minimize interruptions in CPR pre & post rhythm interpretation/defibrillation to < 10 seconds		

Do Not Resusitate Confirmation Form

EpiPen Reference

Administration Guidelines

- The EpiPen Auto-Injector is a disposable drug delivery system with a spring activated concealed needle.
- EpiPen Auto-Injector is designed to deliver a single dose of epinephrine 0.3 mg
- EpiPen Jr. Auto-Injector is designed to deliver a single dose of epinephrine 0.15 mg
- EpiPen is stable at room temperature until the marked expiration date. It should not be refrigerated or exposed to extreme heat or direct light. The solution should be clear and colourless as observed through the viewing window of the unit.

Procedure for Administration of EpiPen

Assuring that a primary survey, history and physical exam have indicated the patient meets the Anaphylaxis Medical Directive, the Firefighter will immediately:

- Confirm no allergies to epinephrine. Expose the lateral thigh where the injection is to be given. If removal of clothing is likely to result in a delay of more than a few seconds, apply the injector over the clothing. EpiPen will work through clothing.
- Remove the EpiPen from the case.
- Check the EpiPen label for the drug dosage and expiry date. Have a partner verify this information.
- Activate the EpiPen by removing the blue safety cap. Never put fingers over the orange tip.
- Hold the EpiPen with the orange tip against the outer, fleshy aspect of the thigh, and apply moderate pressure to release the spring activated plunger. This pushes the concealed needle into the thigh muscle and expels the dose of epinephrine.
- Hold the unit in place for three seconds after the unit activates.
- Document the time of the procedure, the name of the drug, the site used and the patient's response.
- Take pulse and respirations every 5 minutes. Monitor and manage ABC's as required.
- If there is no improvement in the patient's condition within 5 minutes of the last administration, providing the criteria of the Anaphylaxis Medical Directive are met, follow the steps previously outlined and administer another dose if available. A firefighter may administer a maximum of 2 doses of epinephrine regardless of doses administered prior to firefighter contact..
- Safely dispose of the needle in sharps container. DO NOT RECAP. Remember, it is the responsibility of the person who gave the EpiPen to safely dispose of the sharp.

"Blue to the Sky. Orange to the thigh."

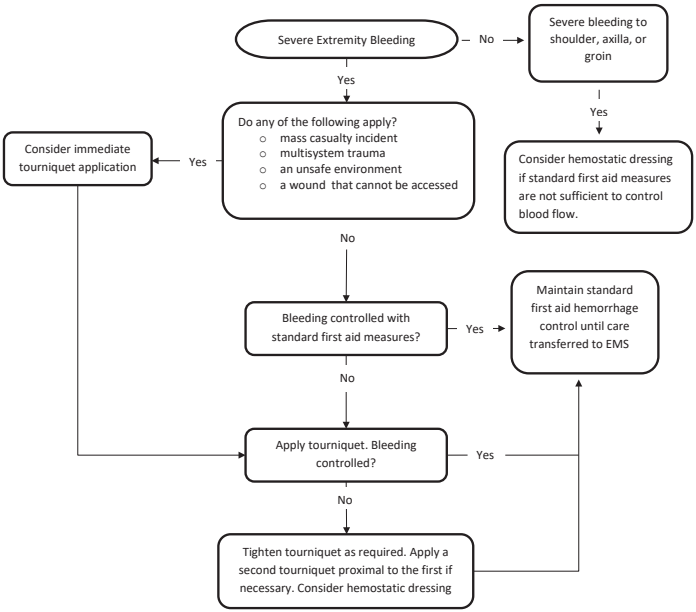
NOTE:

1. The effects of the medication should be evident within seconds by an increased heart rate. Within 5 – 10 minutes, blood pressure should increase and respiratory distress decrease. Effects should last 5 to 10 minutes.
2. A firefighter may administer a maximum of 2 doses of epinephrine regardless of doses administered prior to firefighter contact. If the patient has received epinephrine prior to firefighter contact, attempt to determine the time of administration. In an estimated 5 minutes, if the patient meets the criteria of the Anaphylaxis Medical Directive consider another administration.
3. In the case of children or other challenging patients, if the Firefighter encounters resistance to hands-on assessment or treatment, the crew may consider utilizing a designated and trained person to administer the EpiPen if present. The patient may be more comfortable with this individual and allow the treatment. These individuals may include a parent, sibling, teacher, educational assistant, personal support worker, etc. These individuals will in most cases make themselves known to you and may have already explained their actions prior to Firefighter arrival.
4. Urticaria (Hives) alone is not an indication for administration of epinephrine. At least one other serious sign or symptom must be present before giving epinephrine.

FIREFIGHTER CAUTION:

Accidental digital injection of epinephrine requires prompt medical attention. Report all needle stick injuries to your department.

Major Bleed Flow Chart



Asherman Chest Seals for Penetrating Chest Wounds

Penetrating chest wounds can be life threatening due to the potential for tension pneumothorax. Tension pneumothorax occurs when outside air is sucked into the chest cavity during respirations after a deep puncture trauma. If that air is not also expelled, it will put pressure on the heart and lungs, compromising pulmonary and respiratory function. The one way valve on an Asherman chest seal allows air and blood to escape but does not allow air to enter the chest cavity.

There is no drawback to applying an Asherman chest seal for any penetrating trauma, even if the wound isn't deep enough to suck air into the chest cavity. If there is profuse bleeding from the puncture, use hemorrhage control techniques first.

To apply an Asherman chest seal, attempt to clean and dry the area around the wound as best as possible. The adhesive on the chest seal may not stick as well if the area is very wet or dirty. Once the area around the injury is prepared, peel the cover off of the adhesive area of the chest seal and apply over the wound. Attempt to place the valve directly over the injury. Apply some pressure all around the valve to make sure it is adhered.

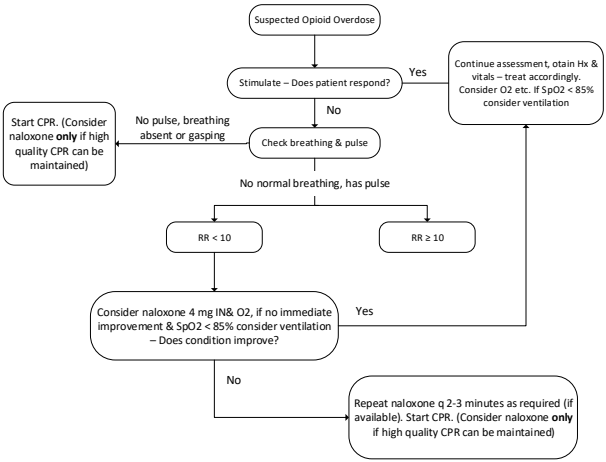
If the trauma is from a gunshot, the Firefighter must look for both an entrance and an exit wound. If there is both an entrance and an exit wound, use a chest seal on both sites. If a chest seal is not available, it is appropriate to defer to Standard First Aid guidelines for care of penetrating chest wounds.

In the event that an Asherman Chest Seal is used during a call, the on scene Firefighters must notify the arriving Paramedics of the application along with other relevant information. The Paramedics should consider this administration the same as any other treatment provided by a trained allied agency. The usual transfer of care can proceed and Paramedics can take over care and use of their own Medical Directives as per normal practice. Documentation by all parties should follow established policies and standards.

Please note that if the trauma is from a gunshot, you must look for both an entrance and exit wound. If there is both an entrance and exit wound, Ashermans should be used on both sites. If an Asherman is not available on a scene with a penetrating chest trauma, it is still appropriate to follow Standard First Aid guidelines.
In the event that an Asherman chest seal is utilized during a call the on scene Firefighters must notify the arriving Paramedics of the application along with other relevant information. The Paramedics should consider this administration the same as any other treatment provided by a trained allied agency. The usual transfer of care can proceed and Paramedics can take over care and use of their own Medical Directives as per normal practice. Documentation by all parties should follow established policies and standards.

Respiratory Outbreak Opioid Toxicity Algorithm

Please refer to prevailing medical guidance as directed by local health unit and specific OBHG guidance when in declared respiratory outbreak.



Contact

FIREFIGHTER MEDICAL DIRECTIVES

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