ONTARIO BASE HOSPITAL GROUP
Education Subcommittee (ESC)

Companion Document
Summary of changes

February 2022
Version 4.9

The change summary for the Companion Document is specific to changes made within the Companion Document only and not specific to the ALS PCS medical directives. Specific information currently stated in the Medical Directives have been removed from the Companion Document as the purpose is focused on educational information around the directives.

Updated Medical Directives:

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1) **<u>Cardiac Ischemia Medical Directive</u>**
   - **Removed bullet:**
     - The nitroglycerin canister should be considered a single patient use device.
   - **Added bullets:**
     - **12 Lead Acquisition**
       - Once a STEMI has been identified there is no need to repeat the 12 lead ECG.
       - If there is no evidence of STEMI, serial 12 lead ECGs would be recommended.
     - **Nitroglycerin Administration**
       - Nitroglycerin may be administered for an isolated posterior STEMI.
   - **Updated bullet:**
     - If a patient's vital signs fall outside the medical directive's parameters (i.e.: hypotension), the patient can no longer receive that medication (i.e.: nitroglycerin or morphine) even if the patient's vital signs return to acceptable ranges, **given the risk for recurrent decompensation (i.e. hypotension).**
   - ***ACP only,* updated bullet**:
     - Morphine is only to be considered following the third dose of nitroglycerin (unless nitroglycerin is contraindicated) and where pain is severe.

2) **<u>Hypoglycemia Medical Directive</u>**
   - **Removed bullet:**
     - The directive includes a fairly broad set of patient presentations to enable the paramedic to use the glucometer t rule in or rule out blood sugar related event.
   - ***ACP only,* removed bullet*:***
     - Preparation of 25% Solution: waste 25 mL of the preload and replace the 25 mL with sterile water or saline. This will create a 12.5 g/50 mL solution. Administer 0.5 g/kg for the gram dose or 2 mL/kg for fluid volume and administer no more than 40 mL.
   - **Added bullets:**
     - It is recommended that the max single dose of D10W OR D50W for your *hypoglycemic* patient be administered gradually <u>over 3 minutes</u>, with a discontinuation in the event your patient attains a level of consciousness where they can safely consume carbohydrates. The goal is to avoid over treatment since this can result in rebound hyperglycemia.

3) **Analgesia Medical Directive**

- **Removed bullets:**
  - The analgesia medical directive has single indication of "pain".
  - Age parameters for acetaminophen, ibuprofen and ketorolac are ≥12 years of age.
  - Dosing for acetaminophen is age specific.
  - Ketorolac is restricted to patients who are unable to tolerate oral medications.
  - Definition of 'unable to tolerate oral medications': for example: A patient that: must remain in the supine position (i.e. on a backboard), is vomiting or nauseated, has difficulty swallowing or has a feeding tube in place would not be able to tolerate oral medications.
- ***ACP only,* removed bullets:**
  - FentaNYL should not be used in any combination with morphine unless authorized by a BHP via patch.
  - Mandatory patch point for morphine and fentanyl for patients < 12 years old.
  - The maximum volume of IN fentanyl is 1 mL per nare.
  - Paramedics should consider starting with lower doses and administer narcotic analgesia in small aliquots q 3 minutes until desired analgesia is achieved or the max single dose is reached.
  - Ketorolac can be administered in conjunction with morphine or fentaNYL.
- **Added bullets:**
  - Paramedics are encouraged to use their clinical judgement when choosing which analgesia is best suited for their patient. The following points are things to consider when choosing the appropriate analgesia:
    - Acetaminophen and ibuprofen should be considered as first line analgesia for patients who are able to tolerate oral administration. Oral administration is as effective and is less invasive than parenteral analgesia.
    - Administration of acetaminophen and ibuprofen can provide analgesia similar to low-dose opioids without the euphoric effect.
    - Ketorolac should not be administered in conjunction with ibuprofen as they are both NSAIDs and administration of both may increase the adverse effects.
- **ACP *only,* added bullet:**
  - Active labour is defined as an increase in strength and duration of contractions with a decrease in time between contractions. Often patients will begin to feel the urge to push and will likely be unable to move around during the contraction.

4) **Opioid Toxicity Medical Directive**
   - **Removed bullets:**
     - Contraindication lists uncorrected hypoglycemia—this is specific reversible cause that is appropriate to correct prior to determining the need for additional therapy.
     - The mandatory patch point has been removed.
     - Removed the routes of administration section.
   - **Added bullets:**
     - Naloxone may be administered to patients who are not responding to assisted ventilations or in situations whereby the provision of persistent ventilations is difficult (i.e. challenging extrications, prolonged transport times).
     - The age for Naloxone administration is now ≥ 24 hours. The age cut off of ≥ 24 hours minimizes the risk of life-threatening opioid withdrawal syndrome in the newborn.
     - Naloxone may unmask alternative toxidromes in mixed overdose situations (leading to possible seizures, hypertensive crisis, etc.).
     - Naloxone is shorter acting than most opioids and these patients are at high risk of having a recurrence of their opioid effect. Every effort should be made to transport the patient to the closest appropriate receiving facility for ongoing monitoring.
   - **Updated bullets:**
     - IV naloxone titration refers to administering only small increments of the 0.4 mg dose at a time to restore respiratory effort, but limit the rise in wakefulness. **Consider dilution for easier titration of IV Naloxone.**
     - The directive now allows for three (3) total doses of naloxone, administered in **five (5)** minute intervals by **all** routes.

5) **Cardiogenic Shock Medical Directive**
   - ***ACP only,* added bullets:**
     - A contraindication to Dopamine administration is mechanical shock. Examples of mechanical shock include tension pneumothorax, pulmonary embolism, and cardiac tamponade.
     - Notify the receiving hospital staff if the DOPamine drip goes interstial as DOPamine can cause tissue necrosis which can be mitigated by a phentolamine injection at the hospital into the affected tissue.

6) **Symptomatic Bradycardia Medical Directive**
   - **Added bullets:**
     - Mandatory BHP patch point has been removed.
     - Transcutaneous pacing should not be delayed to initiate IV access if the patient is unstable.
     - A contraindication to Dopamine administration is mechanical shock. Examples of mechanical shock include tension pneumothorax, pulmonary embolism, and cardiac tamponade.

- Notify the receiving hospital staff if the DOPamine drip goes interstial as DOPamine can cause tissue necrosis which can be mitigated by a phentolamine injection at the hospital into the affected tissue.

7) Seizure Medical Directive

- **Removed bullet:**
  - Contraindication list hypoglycemia – this is a specific reversible cause that is appropriate to correct prior to determining the need for midazolam.
- **Added bullets:**
  - Midazolam has a wide variety of routes of administration to suit the varied presentations. **Utilize the route that can be accessed the quickest.**
  - IO: is to be accessed **only** in the setting of near arrest.

8) Orotracheal Intubation Medical Directive

- **Removed bullets:**
  - Topical Lidocaine dosing has been updated: A single spray is 10 mg, and the maximum body dose is 5 mg/kg which includes Lidocaine administered by any route (IV and topical).
- **Added bullets:**
  - The onset of action for topical Lidocaine is within 1 minute but it may take up to 3 – 5 minutes to have full effect.
  - The formula that is recommended for sizing a **cuffed** pediatric endotracheal tube is **3.5+(Age/4)**. This formula allows for a slightly smaller tube as the cuff will create the seal versus the tube only.
  - It is recommended that paramedics start with smaller volume of air when inflating the cuff (example 1ml increments) and continue until no air is heard on auscultation escaping past the cuff. It is also appropriate to use a smaller syringe such a 3ml or 5ml to avoid over inflating the cuff in smaller patients.
- **Updated bullets:**
  - **Topical** Lidocaine is indicated for **patients with a GCS ≥ 4** and should be applied to the hypopharynx.
  - The number of **advanced airway** attempts is clearly defined as two (2) attempts per patient regardless of the route chosen.

9) Hyperkalemia Medical Directive

- **Removed bullets:**
  - A patch to the BHP is required.
  - CVAD has been included as a route of administration for calcium gluconate.
- **Added bullet:**
  - Considerations: Sodium bicarbonate is not a very effective agent for hyperkalemia and should not be routinely administered. This would be a patch point for discussion with a BHP.

10) ACP Cricothyrotomy Medical Directive

- **Removed bullet:**
  - A patch to the BHP is required prior to the attempt.