MEMORANDUM

TO: **Ontario Paramedics**

FROM: **Ontario Base Hospital Group Education Subcommittee (OBHG ESC)**

DATE: **January 16, 2023**

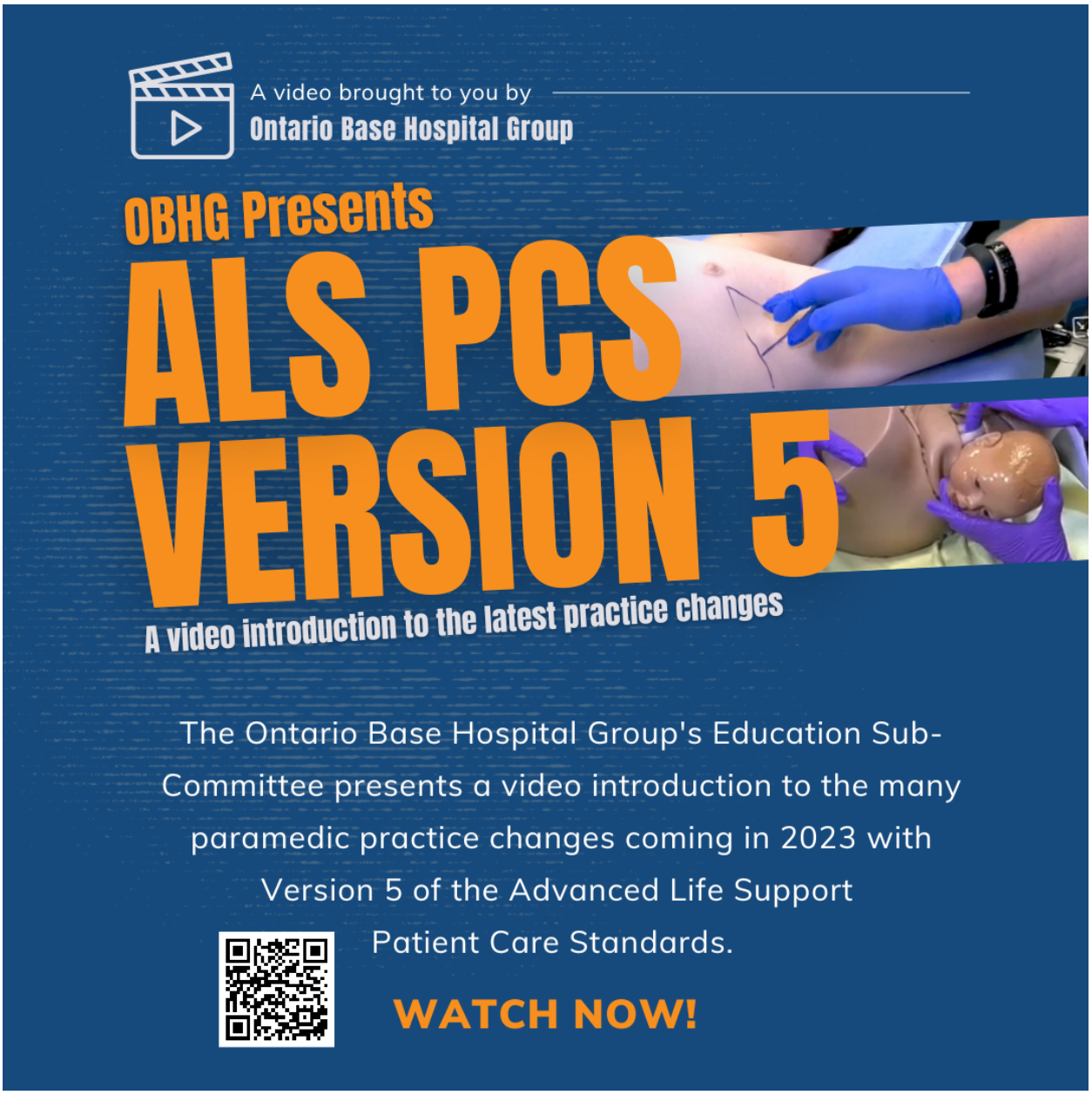
RE: **Advanced Life Support Patient Care Standards (ALS PCS) Version 5 Update — Impact on Clinical Practice and Educational Summary**

On February 1, 2023, an updated version of the ALS PCS, v.5, comes into force by the Ministry of Health (MOH). This communication memo will focus on the impact of clinical practice on patient care within the ALS PCS, v.5 utilized by Ontario paramedics. It is the responsibility of the paramedic to ensure they have reviewed all directives in their entirety.

Contents

OBHG Video Introduction to the latest practice changes

Scan the QR Code below or visit OBHG Video Introduction to ALS PCS v5.



1. Medical Cardiac Arrest

All medical cardiac arrest medical directives have been merged into one. Paramedics can use clinical judgment to consider early transportation following the primary clinical considerations or remain on scene to perform high-quality CPR and resuscitative measures.

Rationale – The Medical Cardiac Arrest Directive now better aligns with current American Heart Association (AHA) guidelines. The primary clinical considerations provide paramedics considerations for early transport when presented with situations where reversible causes of cardiac arrest cannot be provided prior to transport.

For both PCPs and ACPs, 20 minutes of high-quality resuscitation is required before patching to a Base Hospital physician to consider a TOR. The exception to the 20 minutes is for the Primary Clinical Considerations or in cases of refractory VF or pulseless VT, where 3 consecutive shocks are delivered. In these cases, paramedics will consider an egress plan and transport the patient.

The timing of the mandatory patch point for patients meeting a potential TOR now aligns for both PCPs and ACPs, with current evidence of projected survival of 0.2%. However, patients considered for TOR earlier than 20 minutes have a significantly higher projected survival rate.[1,2] Paramedics will now have more time to obtain pertinent patient/medical/incident history prior to patching to BHP and can focus on high-quality resuscitation in the initial minutes.

PRIMARY CLINICAL CONSIDERATIONS (REVISED)

In the following settings, consider very early transport after a minimum of one analysis (and defibrillation if indicated) once an egress plan is organized:

1. pregnancy presumed to be ≥ 20 weeks gestation (fundus above umbilicus, ensure manual displacement of uterus to left),
2. hypothermia,
3. airway obstruction,
4. non-opioid drug overdose/toxicology,
5. or other known reversible cause of arrest not addressed.

For patients in refractory VF or pulseless VT, transport of the patient should begin after the third consecutive shock. Refractory VF or pulseless VT is defined, for the purpose of this directive, as persistent VF or pulseless VT after 3 consecutive shocks.

For ACPs, in cases of refractory VF or pulseless VT, transport following 3 rounds of EPINEPHrine (or after 3rd consecutive defibrillation if no IV/IO/CVAD/ETT access). Refractory VF or pulseless VT is defined, for the purpose of this directive, as persistent VF or pulseless VT after 3 consecutive shocks.

1 Kim et al. The Scene time interval and BLS TOR in OHCA. J Korean Med Sci 2015;30:104-9.
2 Grunau B et al. External validation of the universal TOR rule for OHCA in British Columbia. Ann Emerg Med 70 (2017) 374-81.

DEFIBRILLATION (REVISED)

	Current	Previous
Age	≥ 24 hrs	≥ 30 days
Defibrillation	N/A	4 doses

TOR CONDITIONS (REVISED)

	Current	Previous
Age	≥ 16 years	≥ 18 years
Other	Arrest not witnessed by paramedic AND No ROSC after 20 minutes of resuscitation AND No defibrillation delivered	Arrest not witnessed by EMS AND No ROSC AND No defibrillation delivered

MANDATORY PROVINCIAL PATCH POINT (REVISED)

Current	Previous
Patch to consider Medical TOR (if applicable). If the patch fails or if Medical TOR does not apply, transport to the closest appropriate hospital following ROSC or 20 minutes of resuscitation without ROSC. Patch early (e.g. following the 4th analysis) to consider TOR if there are extenuating circumstances surrounding egress, prolonged transport or significant clinical limitations where the paramedic considers ongoing resuscitation to be futile.	Patch to BHP for authorization, following the 3rd analysis, to consider Medical TOR (if applicable). If the BH patch fails, or the Medical TOR does not apply, transport to the closest appropriate receiving facility following ROSC or the 4th analysis.

ACP (including the above)
TREATMENT – EPINEPHRINE (REVISED)

	Current	Previous
Min. single dose	0.05 mg IV/IO/CVAD	0.1 mg IV/IO/CVAD
Min. single dose	0.5 mg ETT	1 mg ETT

TREATMENT – AMIODARONE (REVISED)

	Current	Previous
Age	≥ 24 hrs	N/A

TREATMENT – LIDOCAINE (REVISED)

	Current	Previous
Age	≥ 24 hrs	N/A
Second dose for ≥ 12 years	0.75 mg/kg IV/IO/CVAD	1.5 mg/kg IV/IO/CVAD
Second dose for ≥ 12 years	1.5 mg/kg ETT	3 mg/kg ETT

TREATMENT - 0.9% NACL (REVISED)

	Current	Previous
Age	≥ 24 hrs	N/A

MANDATORY PROVINCIAL PATCH POINT (REVISED)

Current	Previous
Patch to consider Medical TOR (if applicable). If the patch fails or if Medical TOR does not apply, transport to the closest appropriate hospital following ROSC or 20 minutes of resuscitation without ROSC. Patch early (e.g. following the 4th analysis) to consider TOR if there are extenuating circumstances surrounding egress, prolonged transport or significant clinical limitations where the paramedic considers ongoing resuscitation to be futile.	Patch to BHP following 3 rounds of epinephrine (or after 3rd analyses if no IV/IO/CVAD/ETT access). If the BH patch fails, transport to the closest appropriate receiving facility following the 4th epinephrine administration (or 4th analysis if no IV/IO/CVAD/ETT access).

CLINICAL CONSIDERATIONS (REVISED)

Current	Previous
Consider Regional Base Hospital advanced airway strategy where more than OPA/NPA and BVM is required. There is no clear role for routine administration of naloxone in confirmed cardiac arrest. The BHP might NOT authorize TOR even though the patient meets TOR rule. Factors may include: location of the patients, $ETCO_2$, age, bystander witnessed, bystander CPR, transportation time, and unusual cause of cardiac arrest such as electrocution, hanging, and toxicology. The BHP may authorize TOR even though the patient does NOT meet the TOR rule. Factors that may be taken into account include extenuating circumstances surrounding egress limitations, prolonged transport, caregiver wishes, existence of DNR confirmation form, and underlying end stage progressive illness. (ACP only) The IV/IO/CVAD routes of medication administration are preferred over the ETT route. However, ETT administration may be used if the IV/IO/CVAD routes are delayed (e.g. ≥ 5 min).	Consider very early transport after the 1st analysis (and defibrillation if indicated) in the following settings: pregnancy presumed to be ≥ 20 weeks gestation (fundus above umbilicus, ensure manual displacement of uterus to left), hypothermia, airway obstruction, suspected pulmonary embolus, medication overdose/toxicology, or other known reversible cause of arrest not addressed. Similarly, plan for extrication and transport for patients with refractory ventricular fibrillation and pediatric cardiac arrest (after 3 analyses), ensure quality CPR can be continued. In cardiac arrest associated with opioid overdose, continue standard medical cardiac arrest directive. There is no clear role for routine administration of naloxone in confirmed cardiac arrest. Follow the Deceased Patient Standard once TOR has been implemented. The IV and IO routes of medication administration are preferred over the ETT route. However, ETT administration may be used if the IV/IO routes are delayed (e.g. ≥ 5 min). If hyperkalemia is suspected as the causative event of the cardiac arrest, consider patching early for calcium gluconate.

2. Trauma Cardiac Arrest

Rationale – The Trauma Cardiac Arrest Medical Directive was updated to streamline the approach, simplify the language used in the medical directive, and allow paramedics to focus on reversible causes of the traumatic arrest and align with current Field Trauma Triage (FTT) guidelines. ACPs can now consider a needle thoracostomy without patching (see updated Medical Directive). It also aligns with AHA guidelines and changes to the age of the newborn resuscitation medical directive with clarification of signs of life and patient care prioritization.

DEFIBRILLATION (REVISED)

	Current	Previous
Age	≥ 24 hrs	≥ 30 days

TOR CONDITIONS (REVISED)

	Current	Previous
Other	No palpable pulses AND No defibrillation delivered AND Rhythm Asystole AND No signs of life at any time since fully extricated OR Signs of life when fully extricated with closest ED ≥ 30 min transport time away OR Rhythm PEA with the closest ED ≥ 30 min transport time away	No palpable pulses AND No defibrillation delivered AND Monitored HR = 0 OR Monitored HR > 0 with the closest ED ≥ 30 min transport time away

TOR CONTRAINDICATIONS (REVISED)

	Current	Previous
Other	Age < 16 years Defibrillation delivered Signs of life at any time since fully extricated medical contact Rhythm PEA and closest ED < 30 min transport time away Patients with penetrating trauma to the torso or head/neck and lead trauma hospital < 30 min transport time away	Age < 16 years Defibrillation delivered Monitored HR > 0 and closest ED < 30 min transport time

CLINICAL CONSIDERATIONS (REVISED)

Current	Previous
If no obvious external signs of significant blunt trauma, consider medical cardiac arrest and treat according to the appropriate medical cardiac arrest directive. Signs of life: specifically any spontaneous movement, respiratory efforts, organized electrical activity on ECG, and reactive pupils. An intravenous fluid bolus may be considered, where it does not delay transport and should not be prioritized over management of other reversible pathology.	If no obvious external signs of significant blunt trauma, consider medical cardiac arrest and treat according to the appropriate medical cardiac arrest directive.

3. Newborn Resuscitation

(FORMERLY NEONATAL RESUSCITATION)

Rationale – The primary focus is still on high-quality, effective ventilations using a good mask seal to provide positive pressure ventilations (PPV), repositioning or suctioning as required, then moving to alternative airways if necessary. If newborn resuscitation is required, initiate cardiac monitoring and right hand pulse oximetry monitoring. Do not delay ventilations to apply these interventions. Delays in initiating PPV in newly born infants increase mortality.

When determining gestation age, it is calculated from the first day of the last regular menstrual period. The gestational age is based on the date of the last period, not the date of conception. Commonly, gestational age is 40 weeks.

CONDITIONS (NEW)

Age	< 24 hours

CONTRAINDICATIONS (NEW)

Presumed gestational age less than 20 weeks

CLINICAL CONSIDERATIONS (REVISED)

Current	Previous
If newborn resuscitation is required, initiate cardiac monitoring and right-hand pulse oximetry monitoring. Infants born between 20–25 weeks gestation may be stillborn or die quickly. Initiate resuscitation and transport as soon as feasible. If gestational age cannot be confirmed, initiate resuscitation and rapid transport. If newborn is less than 20 weeks gestation, resuscitation is futile. Provide the newborn with warmth and consider patching to BHP for further direction.	If neonatal resuscitation is required, initiate cardiac monitoring and pulse oximetry monitoring.

ACP (including the above)

Rationale: EPINEPHrine is limited to 1 dose via ETT route and all subsequent doses should be administered via the IV/IO routes. Initial ETT EPINEPHrine administration has been shown to be faster to administer due to potential delays in IV/IO initiation.

CLINICAL CONSIDERATIONS (REVISED)

	Current	Previous
Min. single dose	0.05 mg IV/IO/CVAD	0.1 mg IV/IO
Min. single dose	N/A	1 mg ETT*
Max. single dose	N/A IV/IO	N/A IV/IO
Max. single dose	0.3 mg ETT	N/A ETT*
* EPINEPHrine is to be administered IV/IO after the single ETT dose if the conditions are still met		

4. Bronchoconstriction

Rationale – Dexamethasone has been added to the Bronchoconstriction Medical Directive for PCPs and ACPs. Early dexamethasone administration in asthma/COPD exacerbation improves patient outcomes and reduces healthcare system strain. Dexamethasone can be used in conjunction with salbutamol, EPINEPHrine and CPAP. Salbutamol, EPINEPHrine and CPAP are still priority treatments. The preferred route for dexamethasone administration is PO, and it should only be given IM/IV if the patient is extremely short of breath and all other care has been provided. Dexamethasone cannot be used for patients currently on oral or parenteral (IV/IM) steroids. This does not include inhaled, or topical steroids as these only affect at the local cellular level and not systemically. The formulary for dexamethasone comes in a vial and is approved for all three routes.

COPD is underdiagnosed in Canadians, and smoking is a significant risk factor in the development of COPD. The likelihood of a long-time smoker having COPD is high. Therefore, undiagnosed patients who smoke or previously smoked and have a 20 pack-year history, would be considered for dexamethasone. Pack-years is a way to measure smoking exposure that considers how long someone has smoked and how much they have smoked. For example, if you have smoked a pack a day for the last 20 years or two packs a day for the last 10 years, you have 20 pack-years.

CONDITIONS – DEXAMETHASONE (NEW)

Age	N/A
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Hx of asthma OR COPD OR 20 pack-year history of smoking

CONTRAINDICATIONS – DEXAMETHASONE (NEW)

Allergy or sensitivity to steroids
Currently on PO or parenteral steroids

TREATMENT – DEXAMETHASONE (NEW)

Route	PO/IM/IV
Dose	0.5 mg/kg
Max. single dose	8 mg
Dosing interval	N/A
Max. # of doses	1

5. Croup

Rationale – The anti-inflammatory benefits of dexamethasone for patients with croup are not immediately apparent. However, dexamethasone administration reduces mortality rates and hospital admissions by 1/3 and the potential need for intubation.

Dexamethasone can only be given PO for patients with mild, moderate or severe croup. In severe cases of croup, treat with nebulized EPINEPHrine first. If significant improvement occurs, the paramedic may consider administering dexamethasone if the patient can take oral medications.

The dosing chart for croup has been simplified to decrease the risk of dosing errors.

INDICATIONS (REVISED)

Current	Previous
Current history of URTI AND Barking cough or recent history of a barking cough	Severe respiratory distress AND Stridor at rest AND Current history of URTI AND Barking cough or recent history of a barking cough

CONDITIONS – EPINEPHrine (REVISED)

	Current	Previous
Age	≥ 6 months to < 8 years	< 8 years

TREATMENT – DEXAMETHASONE (NEW)

Age	≥ 6 months to < 8 years
LOA	Unaltered
HR	N/A
RR	N/A
SBP	N/A
Other	For mild, moderate, and severe croup

CONTRAINDICATIONS – DEXAMETHASONE (NEW)

Allergy or sensitivity to steroids
Steroids received within 48 hours
Unable to tolerate oral medication

TREATMENT – EPINEPHrine (REVISED)

Current			Previous		
Age	N/A	N/A	< 1	< 1	≥ 1 to < 8
Weight	< 10 kg	≥ 10 kg	< 5 kg	> 5 kg	N/A
Route	NEB	NEB	NEB	NEB	NEB
Concentration	1 mg/ml = 1:1,000	1 mg/ml = 1:1,000	1 mg/ml = 1:1,000	1 mg/ml = 1:1,000	1 mg/ml = 1:1,000
Dose	2.5 mg	5 mg	0.5 mg	2.5 mg	5.0 mg
Max. single dose	2.5 mg	5 mg	0.5 mg	2.5 mg	5.0 mg
Dosing interval	N/A	N/A	N/A	N/A	N/A
Max. # of doses	1	1	1	1	1

TREATMENT – DEXAMETHASONE (NEW)

Age	≥ 6 months to < 8 years
Route	PO
Dose	0.5 mg/kg
Max. single dose	8 mg
Dosing interval	N/A
Max. # of doses	1

6. Emergency Childbirth

Rationale – The treatments, previously in a flowchart format, are now included in the medical directive: shoulder dystocia, breech delivery, prolapsed cord, umbilical cord management and external uterine massage. PCPs and ACPs can now administer oxytocin after all fetuses and/or placentas are delivered and up to 4 hours post-placenta delivery. The addition of oxytocin has the potential to dramatically affect maternal morbidity and mortality in the high acuity, low occurrence event of severe postpartum hemorrhage.

INDICATIONS (REVISED)

Current	Previous
Pregnant patient experiencing labour; OR Post-partum patient immediately following delivery and/or placenta	Pregnant patient experiencing labour; OR Post-partum patient immediately following delivery

CONDITIONS (REVISED)

The three clinical situations related to emergency childbirth have been included: shoulder dystocia, breech delivery, and prolapsed cord.

CONDITIONS – OXYTOCIN (NEW)

Age	Childbearing years
LOA	N/A
HR	N/A
RR	N/A
SBP	N/A
Other	Postpartum delivery and/or placental delivery

CONTRAINDICATIONS – EXTERNAL UTERINE MASSAGE (NEW)

Placenta not delivered

CONTRAINDICATIONS – OXYTOCIN (NEW)

Allergy or sensitivity to oxytocin
Undelivered fetus
Current SBP ≥ 160 mmHg OR suspected or known pre-eclampsia with current pregnancy
Eclampsia (seizures) with current pregnancy
> 4 hours post placenta delivery

TREATMENT – OXYTOCIN (NEW)

Route	IM
Dose	10 units
Max. single dose	10 units
Dosing interval	N/A
Max. # of doses	1

7. Supraglottic Airway

Rationale – Supraglottic airway (SGA) devices are used to establish an airway for oxygenation and ventilation without entering the trachea. They can be primary airway devices during cardiopulmonary resuscitation or rescue devices for failed airways. The Supraglottic Airway Medical Directive has moved from auxiliary to core, and the PCP and ACP directives now have consistent conditions and indications.

Paramedics should complete a thorough airway assessment and suction, if required, before SGA insertion. Upon SGA insertion, paramedics shall consider $ETCO_2$ and SpO_2 monitoring.

CONDITIONS (REVISED)

	Current	Previous
Other	Absent gag reflex	Patient must be in cardiac arrest

CONTRAINDICATIONS (REVISED)

Current	Previous
Airway obstruction by a foreign object Known esophageal disease (varices) Trauma to the oropharynx Caustic ingestion	Active vomiting Inability to clear the airway Airway edema Stridor Caustic ingestion

8. Nausea/Vomiting

Rationale – The Nausea Vomiting Medical Directive has changed to provide paramedics with improved abilities to treat various cases of nausea and vomiting. Patient safety is of the utmost importance. Since dimenhyDRINATE may cause somnolence, confusion and delirium, especially in the elderly, ondansetron has been added and is a preferred medication to treat nausea and vomiting in the elderly. Paramedics are encouraged to use clinical judgment when choosing a treatment option. Below is a table of preferred uses.

Ondansetron	DimenhyDRINATE
• cause from drug interactions - ie. chemotherapy, alcohol, cannabis, illicit drugs • head trauma (less risk of ICP) • taking diphenhydrAMINE, anticholinergics or tricyclic antidepressants (TCAs) • elderly patients	• motion sickness or vertigo • upset stomach due to food ingestion • best for people on SSRIs • hyperemesis for a pregnant patient • avoid with head injuries as it can cause increased ICP

CONDITIONS – Ondansetron (NEW)

Age	N/A
Weight	≥ 25 kg
LOA	Unaltered
HR	N/A
RR	N/A
SBP	N/A
Other	N/A

CONDITIONS – DimenhyDRINATE (REVISED)

	Current	Previous
Age	< 65 years	N/A

CONTRAINDICATIONS – ONDANSETRON (NEW)

Allergy to ondansetron
Prolonged QT syndrome (known to patient)
Apomorphine use

CONTRAINDICATIONS – DimenhyDRINATE (REVISED)

Current	Previous
Allergy or sensitivity to dimenHYDINATE OR other antihistamines	Allergy or sensitivity to dimenhyDRINATE or other antihistamines
Overdose on antihistamines or OR anticholinergics or OR tricyclic antidepressants	Overdose on antihistamines or anticholinergics or tricyclic antidepressants
Co-administration of diphenhydrAMINE	

TREATMENT – ONDANSETRON (NEW)

Weight	≥ 25 kg
Route	PO
Dose	4 mg
Max. single dose	4 mg
Dosing interval	N/A
Max. # of doses	1

CLINICAL CONSIDERATIONS (REVISED)

Current	Previous
IV administration of dimenhyDRINATE applies only to PCPs authorized for PCP Autonomous IV. Prior to IV administration, dilute dimenHYDRINATE (concentration of 50 mg/1 ml) 1:9 with Normal Saline or sterile water. If administered IM, do not dilute. If a patient has received ondansetron and has no relief of their nausea and vomiting symptoms after 30 minutes, dimenhyDRINATE may be considered.	IV administration of dimenhyDRINATE applies only to PCPs authorized for PCP Autonomous IV. Prior to IV administration, dilute dimenhyDRINATE (concentration of 50 mg/1 ml) 1:9 with Normal Saline or sterile water. If administered IM, do not dilute.

9. Tension Pneumothorax (ACP)

Rationale – ACPs are no longer required to patch for authorization from a Base Hospital Physician before performing a needle thoracostomy. The change of primary location to the 4th anterior axiliary line intercostal space is supported in current literature. It is preferred to the 2nd intercostal space midclavicular line, as the chest wall is thinner and has a lower rate of needle displacement during transport.

INDICATIONS (REVISED)

Current	Previous
Pre-arrest or VSA AND Absent or severely diminished breath sounds on the affected side(s)	Suspected tension pneumothorax AND Critically ill or VSA AND Absent or severely diminished breath sounds on the affected side(s)

MANDATORY PROVINCIAL PATCH POINT (REMOVED)

ACPs are no longer required to patch for authorization from a Base Hospital Physician prior to performing needle thoracostomy

CLINICAL CONSIDERATIONS (REVISED)

Current	Previous
Needle thoracostomy may be performed at the 4th intercostal space anterior axillary line (preferred) or the 2nd intercostal space in the midclavicular line	Needle thoracostomy may only be performed at the 2nd intercostal space in the midclavicular line

10. Combative Patient (ACP)

Rationale – When patients are severely agitated, it creates challenges in obtaining a focused history and physical exam. ACPs are no longer required to patch for authorization for sedation. The need for timely sedation in these patients helps ensure the safety of prehospital providers and patients themselves. Paramedics should use appropriate assessments to determine the right treatment plan. Paramedics shall obtain a complete set of vital signs, including blood glucose post-sedation. Consider qualitative $ETCO_2$ monitoring once the patient is sedated.

Changes to the medical directive allow paramedics to administer a lower weight-based dose (e.g. 0.05 mg/kg) of midazolam based on clinical judgment, considering factors such as patient age, degree of combativeness, and the level of suspicion of hypotension or hypoxia. Do not co-administer midazolam and ketamine unless approval is received from BHP.

CONDITIONS – MIDAZOLAM (REVISED)

	Current	Previous
SBP	N/A	Normotension
Other	N/A	No reversible causes (e.g. hypoglycemia, hypoxia, hypotension)

CONDITIONS – KETAMINE (REVISED)

	Current	Previous
SBP	N/A	Normotension
Other	Suspected excited delirium/ severe violent psychosis	Suspected excited delirium, severe violent psychosis No reversible causes (e.g. hypoglycemia, hypoxia, hypotension)

CONTRAINDICATIONS – KETAMINE (REVISED)

Current	Previous
Allergy or sensitivity to ketamine	Allergy or sensitivity to ketamine Known history of asthma Known pregnancy

MANDATORY PROVINCIAL PATCH POINT (REMOVED)

ACPs are no longer required to patch for authorization in order to allow timely treatment

TREATMENT – MIDAZOLAM (REVISED)

Current	Previous
Age	≥ 18 years
Route	IV/IM/IN
Dose	Up to 0.1 mg/kg
Max. single dose	5 mg
Dosing interval	5 min
Max. total dose	10 mg
Max. # of doses	N/A

CLINICAL CONSIDERATIONS (REVISED)

Current	Previous
Reversible causes of combative, violent or agitated behaviours (e.g. hypoglycemia, hypoxia, hypovolemia) should be considered and treated (if possible) prior to treating with midazolam or ketamine. Paramedics can administer a lower weight base dose (e.g. 0.05 mg/kg) of midazolam based on clinical judgment taking into consideration such as but not limited to, patient age, and degree of combativeness, and the level of suspicion of hypotension or hypoxia when unable to obtain vital signs. Do not co-administer midazolam and ketamine unless direction received from BHP. Consider quantitative $ETCO_2$ monitoring once the patient has been sedated. If ketamine emergence reaction develops, a BHP patch is required if further sedation orders are required.	Do not co-administer midazolam and ketamine unless direction received from BHP. If ketamine emergence reaction develops, a BHP patch is required if further sedation orders are required. Consider obtaining IV access once patient has been sedated.

11. CVAD

Rationale – While establishing a new peripheral IV line is preferred in the prehospital environment, central venous access devices (CVAD) offer additional parenteral routes of therapy administration should a routine IV be difficult or impossible to place. The CVAD Medical Directive has moved to core. The updated medical directive only allows paramedics to utilize an external CVAD.

Scan the QR Code below or view CVAD Video online.

CONDITIONS (REVISED)

	Current	Previous
Other	Patient has pre-existing CVAD with an accessible external lumen in place	Patient has an accessible pre-existing central venous catheter in place

CONTRAINDICATIONS (NEW)

Current	Previous
Inability to confirm patency of CVAD line Inability to flush or aspirate Injury or suspected fracture proximal to the access site Swelling of the involved limb Bleeding at the insertion site	N/A

12. Procedural Sedation (Auxiliary)

Rationale – The Procedural Sedation Medical Directive now introduces fentaNYL administration as these patients require both analgesia and sedation post procedure. Paramedics should consider a lower dose of fentaNYL in elderly and lighter-weight individuals. FentaNYL and midazolam together have a synergistic effect, providing patients with effective analgesia and sedation. The dosing for midazolam is now weight-based to align with other medical directives. Consider quantitative $ETCO_2$ monitoring once the patient has been sedated.

CONDITIONS – FentaNYL (NEW)

Age	≥ 18 years
LOA	N/A
HR	N/A
RR	≥ 10/min *
SBP	Normotension
Other	N/A

* Non-intubated patients only

CONTRAINDICATIONS – FentaNYL (NEW)

Allergy or sensitivity to fentaNYL

TREATMENT – FentaNYL (NEW)

Route	IV/IO/CVAD/IN
Dose	25 – 75 mcg
Max. single dose	75 mcg
Dosing interval	5 min
Max cumulative dose	150 mcg
Other	N/A

TREATMENT – MIDAZOLAM (REVISED)

	Current	**Previous**
Route	IV/IO/CVAD/IN	IV
Dose	Up to 0.1 mg/kg	2.5 – 5 mg

CLINICAL CONSIDERATIONS (REVISED)

Current	**Previous**
Consider lower dose of medication in elderly and lighter weight individuals. Consider quantitative $ETCO_2$ monitoring once the patient has been sedated.	N/A

13. Electronic Control Device Probe Removal

REMOVED

Rationale – This directive has been moved from ALS PCS to the BLS PCS. Police are trained and equipped for removal of the new taser probe systems and advanced medical intervention is generally not required.