	MEDICATION STANDING ORDERS INDEX	
	RELEASE DATE: 2026-04-14	
TABLE A - LISTING BY IDENTIFIER	TABLE B - LISTING BY DRUG NAME	

IDENTIFIER	TABLE A	CURRENT VERSION
M01	Adenosine	2025-12-19
M02.1	Acetaminophen	2025-01-27
M02.2	Ibuprofen	2025-01-27
M03.1	Morphine	2025-03-26
M03.2	Fentanyl	2025-07-09
M03.3	Hydromorphone	2025-03-26
M04.1	Dimenhydrinate	2025-01-28
M04.2	Metoclopramide	2025-01-29
M04.3	Ondansetron Revised	2026-03-06
M05	Epinephrine	2025-11-24
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M07.1	Midazolam	2025-02-04
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M08	Penicillin G Benzathine	2025-02-04
M09	Furosemide	2025-02-06
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M12	Hypertonic Saline	2025-12-04
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M13.2	Dexamethasone	2025-03-25
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M15.2	Ipratropium Bromide	2025-04-24
M16	Oxytocin	2025-06-09
M17	Ketamine	2025-12-18
M18	Sodium Bicarbonate Revised	2026-03-09
M19	Hydralazine	2025-02-12
M20	High Dose Insulin / Dextrose Therapy Deleted	2026-03-06
M21	Nitroglycerin	2025-10-27
M22	Olanzapine	2025-02-12
M23.1	Labetalol	2025-10-27
M23.3	Metoprolol	2025-01-29
M24	Magnesium Sulfate Revised	2026-03-09
M25	Lidocaine	2025-11-18
M26	Calcium Chloride	2025-02-14
M27	Benzotropine	2025-04-24
M28	Tranexamic Acid Revised	2026-03-09
M29	Levetiracetam	2025-11-13
M30	Hyperkalemia Therapy	2025-04-16
M31	Norepinephrine	2025-11-20
M32	Phenylephrine	2025-11-12
M33	Diphenhydramine	2025-12-19
M34	Haloperidol	2025-12-19
M37.1	Acetylsalicylic acid	2025-02-15
M37.2	Ticagrelor	2025-02-15

M38	Ketorolac	2025-07-07
M39	Atropine	2025-02-16
M40	Verapamil	2025-11-17
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TABLE B	IDENTIFIER
Acetaminophen	M02.1
Acetylsalicylic acid	M37.1
Adenosine	M01
Amiodarone	M14
Atropine	M39
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Dexamethasone	M13.2
Dextrose	M06.2
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Diphenhydramine	M33
Enoxaparin	M43
Epinephrine	M05
Fentanyl	M03.2
Furosemide	M09
Glucagon	M06.3
Glucagon Nasal Powder	M06.4
Glucose	M06.1
Haloperidol	M34
High Dose Insulin / Dextrose Therapy	M20

Hydralazine	M19
Hydrocortisone	M13.1
Hydromorphone	M03.3
Hyperkalemia Therapy	M30
Hypertonic Saline	M12
Ibuprofen	M02.2
Ipratropium Bromide	M15.2
Ketamine	M17
Ketorolac	M38
Labetalol	M23.1
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Lidocaine	M25
Lorazepam	M07.2
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Metoprolol	M23.3
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Morphine	M03.1
Naloxone	M11
Nitroglycerin	M21
Norepinephrine	M31
Olanzapine	M22
Ondansetron	M04.3
Oxytocin	M16
Penicillin G Benzathine	M08
Phenylephrine	M32

Salbutamol	M15.1
Sodium Bicarbonate	M18
Ticagrelor	M37.2
Tranexamic Acid	M28
Verapamil	M40

	M01 - ADENOSINE (ADENOCARD)	
	Version date: 2025-03-26	Effective date: 2025-04-30 (07:00)

INDICATIONS
<ul style="list-style-type: none"> • Known or suspected paroxysmal supraventricular tachycardia (PSVT) with stable hemodynamics

WARNINGS
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to adenosine • Atrial fibrillation or atrial flutter with underlying Wolff-Parkinson-White syndrome • Unstable tachycardia • Suspected ventricular tachycardia or undifferentiated wide-complex tachycardia (WCT)
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Sinoatrial node dysfunction • First degree AV block • Bundle branch block • Asthma • Chronic obstructive pulmonary disease • Heart transplant ⁴

ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Administer 6 mg by rapid push over 1 to 2 seconds, immediately followed by a saline flush ³ • Repeat 12 mg if the first dose is not effective within 2 minutes • Consider 12 to 18 mg if second dose not effective within 2 minutes <p>INFANTS / CHILDREN / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Administer 0.1 mg/kg (maximum per dose = 6 mg) by rapid push over 1 to 2 seconds, immediately followed by a saline flush ³ • Repeat 0.2 mg/kg (max dose = 12 mg) if the first dose is not effective within 2 minutes • Consider 0.3 mg/kg (max dose = 12 mg) if the first dose is not effective within 2 minutes 	

NOTES

- | |
|---|
| <ol style="list-style-type: none"> 1. Irregular or polymorphic QRS complexes suggest a ventricular source and are not consistent with PSVT. 2. Adenosine has a very short plasma half-life. Evidence of successful central drug delivery includes heart block or asystole.

Patients should be forewarned that they may experience dyspnea, lightheadedness, or a sense of impending doom. 3. If the dysrhythmia terminates but then recurs a second time, providers may consider repeated dosing starting with the last effective dose. If it recurs a third time, an alternative AVN blocking medication may be required. 4. Adenosine may cause prolonged asystole in the patient with a heart transplant, the dosing is uncertain, and some experts recommend against its use. <u>Paramedics must contact the Virtual Emergency Care & Transport Resource Service (VECTRS) and request on line medical support (OLMS) before treatment.</u> |
|---|

LINKS


- | |
|---|
| <ul style="list-style-type: none"> • C06 - Tachycardia |
|---|

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VERSION CHANGES (refer to X08 for change tracking)
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- | |
|--|
| <ul style="list-style-type: none"> • Addition of advanced work scope • Addition of third dose • Addition of warning re cardiac transplant • Revised contraindications / cautions and notes |
|--|

	M02.1 - ACETAMINOPHEN (TYLENOL)	
	Version date: 2025-01-27	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Mild to moderate pain
- Fever

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to acetaminophen

USE WITH CAUTION:

- Known liver failure ¹
- Do not administer oral medications if anesthesia or surgery is anticipated within the next 4 hours

ADMINISTRATION

ORAL

EMR / PCP / ICP / ACP

ADULTS / ADOLESCENTS:



- 650 to 1000 mg
- Repeat every 4 hours as necessary (daily max = 5 doses)

INFANTS / CHILDREN:

- 10 to 15 mg/kg (max dose = 650 mg)
- Repeat every 4 hours as necessary (daily max = 75 mg/kg)


NOTES

1. Life-threatening liver toxicity has been associated with daily doses exceeding 4 grams in adults and 75 mg/kg in infants, children and adolescents.

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LINKS
<ul style="list-style-type: none">• None

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope• Revised contraindications / cautions

	M02.2 - IBUPROFEN (ADVIL, MOTRIN)	
	Version date: 2025-01-27	Effective date: 2025-04-30 (07:00)

INDICATIONS
<ul style="list-style-type: none"> • Mild to moderate pain • Fever

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to ibuprofen • Aspirin-induced asthma or bronchospasm • Major trauma • Active major bleeding • Pregnancy
USE WITH CAUTION: <ul style="list-style-type: none"> • Renal impairment • Do not administer oral medications if anesthesia or surgery is anticipated within the next 4 hours

ADMINISTRATION	
ORAL	EMR / PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • 400 to 800 mg • Repeat every 6 hours as necessary (daily max = 4 doses) 	
INFANTS / CHILDREN: <ul style="list-style-type: none"> • 10 mg/kg (max dose = 400mg) • Repeat every 6 hours as necessary (daily max = 4 doses) 	

NOTES

LINKS

- None

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VERSION CHANGES (refer to X08 for change tracking)

- Addition of advanced work scope

	M03.1 - MORPHINE	
	Version date: 2025-03-26	Effective date: 2025-04-30 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> Moderate to severe pain

WARNINGS
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> Hypersensitivity to morphine Decreased level of consciousness Significant head injury Hypoventilation or respiratory failure Hypotension / hypoperfusion / shock¹
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> Drug or alcohol intoxication² Age > 75 years² Opioid naïve² Liver failure³ Renal failure³

ADMINISTRATION	
INTRAMUSCULAR	ICP / ACP
<p>ADULTS / ADOLESCENTS:²</p> <ul style="list-style-type: none"> Administer 0.1 mg/kg (maximum per dose = 10 mg) Repeat once in 30 minutes if necessary <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Administer 0.1 mg/kg (maximum per dose = 5 mg) Repeat once in 30 minutes if necessary 	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ADULTS / ADOLESCENTS:²</p> <ul style="list-style-type: none"> Administer 0.1 mg/kg by slow push over 1 to 2 minutes (maximum per dose = 10 mg) 	

M03.1 - Morphine

- Repeat every 15 minutes as necessary (maximum per hour = 20 mg)

INFANTS / CHILDREN:

- Administer 0.1 mg/kg by slow push over 1 to 2 minutes (maximum per dose = 5 mg)
- Repeat every 15 minutes as necessary (maximum per hour = 20 mg)

NOTES

1. Patients with hemodynamic instability may develop hypotension after morphine administration.
2. Morphine can have significant depressive effects on the cardiovascular and central nervous systems (CNS) and the respiratory drive of opioid-naïve patients, especially in combination with other CNS depressants or intoxicants. These effects may be amplified in the elderly, especially if frail or compromised. Consider smaller doses and slower administration.
3. Liver or renal failure can impair morphine metabolism. Administer 50 percent of the usual initial doses and extend the dosing interval by 25 to 50 percent.

LINKS

- A03 - High Alert Medications

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VERSION CHANGES (refer to X08 for change tracking)

- Addition of advanced work scope
- Revised contraindications / cautions

	M03.2 - FENTANYL (100 mcg / 2 ml)	
	Version date: 2025-07-09	Effective date: 2025-07-15 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS

- Analgesia for moderate to severe pain (table A)
- Procedural analgesia without sedation (table B)
- Procedural sedation & analgesia (table C)

WARNINGS

CONTRAINDICATIONS:

- Hypersensitivity to fentanyl
- Decreased level of consciousness
- Hypoventilation or respiratory failure
- Uncorrected hypotension / hypoperfusion / shock

USE WITH CAUTION:

- Compensated hypoperfusion / shock ¹
- Head injury
- Opioid naïve ³
- Age over 75 years ³
- Drug or alcohol intoxication ³
- Liver failure ⁴
- Renal failure ⁴

TABLE A: ANALGESIA

INTRANASAL ²

PCP / ICP / ACP

NOTE: The maximum volume per nostril should not exceed 1 ml in adults & adolescents, 0.5 ml in children, & 0.25 ml in infants (give half the dose per nostril if necessary)

ADULTS / ADOLESCENTS:

- Administer 2 mcg/kg (max = 100 mcg)
- If the pain is not controlled after 10 minutes and IV access is still not available, consider an additional 1 mcg/kg (max = 50 mcg)

INFANTS / CHILDREN:

- Administer 2 mcg/kg (max = 50 mcg)

<ul style="list-style-type: none"> If the pain is not controlled after 10 minutes and IV access is still not available, consider an additional 1 mcg/kg (max = 25 mcg) 	
INTRAMUSCULAR	PCP / ICP / ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer 1 mcg/kg (max = 100 mcg) Repeat 0.5 to 1 mcg/kg (max = 100 mcg) every 60 minutes as necessary to maintain pain control <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Administer 0.5 to 1 mcg/kg (max = 50 mcg) Repeat 0.5 to 1 mcg/kg (max = 50 mcg) every 60 minutes as necessary to maintain pain control 	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
<p>NOTE: Inject by slow push over 1 minute</p> <p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer 0.5 to 1 mcg/kg (max = 100 mcg) If the pain is not controlled after 5 minutes, consider an additional 0.25 to 0.5 mcg/kg (max = 50 mcg) Repeat 0.5 to 1 mcg/kg (max = 100 mcg) every 30 minutes as necessary to maintain pain control <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Begin with 0.5 to 1 mcg/kg (max = 50 mcg) If the pain is not controlled after 5 minutes, consider an additional repeat 0.25 to 0.5 mcg/kg (max = 25 mcg) Repeat 0.5 to 1 mcg/kg (max = 50 mcg) every 30 minutes as necessary to maintain pain control 	

TABLE B: PROCEDURAL ANALGESIA WITHOUT SEDATION

INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>NOTE: Inject by slow push over 1 minute</p> <p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Before the procedure administer 0.5 to 1 mcg/kg (max = 100 mcg) During the procedure repeat 0.25 to 0.5 mcg/kg (max = 50 mcg) as necessary to maintain the desired level of analgesia <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Before the procedure administer with 0.5 to 1 mcg/kg (max = 50 mcg) During the procedure repeat 0.25 to 0.5 mcg/kg (max = 25 mcg) as necessary to maintain the desired level of analgesia 	

TABLE C: PROCEDURAL SEDATION & ANALGESIA (A13)



INTRAVENOUS (INTRAOSSEOUS)	ACP ONLY
<p>NOTE: Inject by slow push over 30 seconds</p> <p>ADULT / ADOLESCENT:</p> <ul style="list-style-type: none"> • Before the procedure administer 0.5 to 1 mcg/kg (max = 50 mcg) • Repeat 0.25 to 0.5 mcg/kg (max = 25 mcg) every 30 seconds, titrating to the desired level of sedation • During the procedure repeat 0.25 to 0.5 mcg/kg (max = 25 mcg) as necessary to maintain the desired level of sedation <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> • Before the procedure administer 0.5 mcg/kg (max = 25 mcg) • Repeat 0.25 mcg/kg (max = 12.5 mcg) every 30 seconds, titrating to the desired level of sedation • During the procedure repeat 0.25 to 0.5 mcg/kg (max = 12.5 mcg) as necessary to maintain the desired level of sedation 	

NOTES


1. Patients with hemodynamic instability may decompensate after fentanyl administration. Always establish intravascular (IV) access before administering fentanyl to a patient with signs of compensated hypoperfusion or shock.
2. The preferred way to administer fentanyl is by the IV route. The intranasal (IN) route is for temporary administration in a patient with stable hemodynamics until IV access is achieved. It is not intended for ongoing pain management.
3. Fentanyl is a high-potency opioid that can have significant depressive effects on the central nervous system and the respiratory drive, especially in combination with drugs or alcohol. The dosing is highly variable among individuals, hence the wide range of initial and repeat doses.
 - Consider smaller doses and slower administration in elderly patients and those who do not regularly take opioids.
 - Patients who chronically consume opioids often develop tolerance and may require doses at the higher end of the range to achieve adequate pain relief.
4. Liver or renal failure can slow fentanyl metabolism. Consider extending the interval between dosing by 25 to 50 percent.

LINKS

- A03 - High Alert Medications
- A13 - Procedural Sedation & Analgesia

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Head injury moved to “use with caution” • Clarification in limited role of IN route • Correction of IM dose & increased interval between repeat dosing (based on pharmacokinetics) • Correction of IV dose, increased interval between repeat doses (based on pharmacokinetics), and addition of repeat half-dose after 5 minutes to achieve initial pain control • Revised notes for greater clarity

	M03.3 - HYDROMORPHONE	
	Version date: 2025-03-26	Effective date: 2025-04-30 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> Moderate to severe pain

WARNINGS
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> Hypersensitivity to hydromorphone Decreased level of consciousness Significant head injury Hypoventilation or respiratory failure Hypotension / hypoperfusion / shock ¹
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> Drug or alcohol intoxication ² Age over 75 years ² Opioid naïve ² Liver failure ³ Renal failure ³

ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer 0.2 to 0.5 mg by slow push over 1 to 2 minutes Repeat 2 to 4 hours as necessary <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Administer 0.01 mg/kg by slow push over 1 to 2 minutes Repeat every 3 to 6 hours as necessary 	
SUBCUTANEOUS	ACP

ADULTS / ADOLESCENTS:

- Administer 0.2 to 0.5 mg
- Repeat 4 hours as necessary

NOTES

1. Patients with hemodynamic instability may develop hypotension after hydromorphone administration.
2. Hydromorphone can have significant depressive effects on the cardiovascular and central nervous systems (CNS) and the respiratory drive of opioid-naïve patients, and in combination with other CNS depressants or intoxicants. These effects may be amplified in the elderly, especially if frail or compromised. Consider smaller doses and slower administration.
3. Liver or renal failure can impair hydromorphone metabolism. Administer 50 percent of the usual initial dose and extend the dosing interval by 25 to 50 percent.

LINKS

- A03 - High Alert Medications

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VERSION CHANGES (refer to X08 for change tracking)

- New

	M04.1 – DIMENHYDRINATE (<i>GRAVOL</i>)	
	Version date: 2025-01-28	Effective date: 2025-04-30 (07:00)



INDICATIONS
<ul style="list-style-type: none"> • Nausea and/or vomiting • Nausea and vomiting during pregnancy • Prevention of opioid-induced nausea or vomiting

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to dimenhydrinate


ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS) / INTRAMUSCULAR	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 1 mg/kg (maximum per dose = 50 mg) by slow push over 2 minutes • Repeat every 4 hours as required INFANTS / CHILDREN: <ul style="list-style-type: none"> • Administer 0.5 mg/kg (maximum per dose = 25 mg) by slow push over 2 minutes • Repeat every 4 hours as required 	

NOTES
<ul style="list-style-type: none"> • None

LINKS
<ul style="list-style-type: none"> • None

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of ACP work scope

	M04.2 – METOCLOPRAMIDE	
	Version date: 2025-01-29	Effective date: 2025-04-30 (07:00)



INDICATIONS
<ul style="list-style-type: none"> • Nausea and/or vomiting • Nausea and vomiting during pregnancy • Nausea & vomiting with migraine headache • Prevention of opioid-induced nausea or vomiting

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to metoclopramide • Known or suspected bowel obstruction
USE WITH CAUTION: <ul style="list-style-type: none"> • History of dystonic reaction with prior use • Tardive dyskinesia • Parkinson's disease


ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS) / INTRAMUSCULAR	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 5 to 10 mg by slow push over 1 to 2 minutes • Repeat every 6 hours as required 	

NOTES
<ol style="list-style-type: none"> 1. Acute dystonic reactions and akathisia (motor restlessness) are more common in the very young. They can occur with too rapid administration, usually occur within the first few hours of therapy, and are generally reversible with discontinuation. Sometimes, treatment is required (M27). 2. Paramedics with the advanced work scope may consider administration of benztropine for severe dystonic reactions, such as oculogyric crisis, torticollis, or trismus.

LINKS
<ul style="list-style-type: none">• M27 - Benztropine

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope• Revised contraindications / cautions

	M04.3 - ONDANSETRON (ZOFRAN)	
	Version date: 2026-04-06	Effective date: 2026-04-14 (07:00)

INDICATIONS
<ul style="list-style-type: none"> Nausea and / or vomiting

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> Hypersensitivity to ondansetron Prolonged QT syndrome Do not administer with amiodarone or haloperidol
USE WITH CAUTION: <ul style="list-style-type: none"> Pregnancy History of serotonin syndrome ¹

ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Administer 8 mg by slow push over 2 to 5 minutes Repeat every 4 hours as required INFANTS / CHILDREN: <ul style="list-style-type: none"> Administer 0.15 to 0.3 mg/kg (maximum per dose = 8 mg) once Repeat every 4 hours as required 	
INTRAMUSCULAR	ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Administer 8 mg Repeat every 4 hours as required INFANTS / CHILDREN: <ul style="list-style-type: none"> Administer 0.15 to 0.3 mg/kg (maximum per dose = 8 mg) Repeat every 4 hours as required 	

NOTES


M04.3 - Ondansetron

1. Serotonin syndrome has been reported with ondansetron administration in conjunction with fentanyl. Symptoms can include autonomic instability (tachycardia, fever, labile blood pressure); delirium, seizures, coma; and tremors, muscle rigidity, myoclonus and hyperreflexia.

LINKS	

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Addition of IM dosing • Addition of repeat dosing for infants & children

	M05 - EPINEPHRINE (ADRENALINE)	
	Version date: 2025-11-24	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS

- Cardiac arrest (table A)
- Bradycardia (table B)
- Newborn resuscitation (table C)
- Anaphylaxis & anaphylactic shock (table D)
- Asthma / bronchospasm (table E)
- Croup (table F)
- Push-dose pressor support (table G)
- Beta blocker or calcium channel blocker toxicity / overdose (table H)

WARNINGS

An epinephrine infusion must be administered by pump. Do not administer by gravity drip under any circumstances.

Refer to H11 for information regarding concentrations & dilutions.

TABLE A: CARDIAC ARREST

INTRAVENOUS (INTRAOSSEOUS) INJECTION	ICP / ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Dose = 1 mg • Administer by rapid push • Follow with a saline flush • Repeat every 3 to 5 minutes as required <p>INFANTS / CHILDREN / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Dose = 0.01 mg/kg (max / dose = 1 mg) • Administer by rapid push • Follow with a saline flush • Repeat every 3 to 5 minutes as required 	
ENDOTRACHEAL INSTILLATION ¹	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Dose = 2 to 2.5 mg • Add 10 ml of saline • Instill directly into the ETT • Promptly ventilate for 5 breaths • Repeat every 3 to 5 minutes as required 	

INFANTS / CHILDREN / ADOLESCENTS:

- Dose = 0.1 mg/kg (max / dose = 2.5 mg)
- Add to 2.5 to 5 ml saline
- Instill directly into the ETT
- Promptly ventilate for 5 breaths
- Repeat every 3 to 5 minutes as required

TABLE B: BRADYCARDIA ⁴

TABLE B: BRADYCARDIA ⁴	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
ADULTS: <ul style="list-style-type: none"> • Dose = 20 to 50 mcg • Administer by slow push over 1 to 2 minutes • Repeat every 3 to 5 minutes as required INFANTS / CHILDREN / ADOLESCENTS: <ul style="list-style-type: none"> • Dose = 10 mcg/kg (max / dose = 50 mcg) • Administer by slow push over 1 to 2 minutes • Repeat every 3 to 5 minutes as required 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
ADULTS: <ul style="list-style-type: none"> • Dose = 0.05 to 2 mcg/kg/min • Begin the infusion at 0.05 to 0.1 mcg/kg/min • Titrate in increments of 0.05 to 0.1 mcg/kg/min every 2 to 3 minutes as required 	

TABLE C: NEWBORN RESUSCITATION

TABLE C: NEWBORN RESUSCITATION			
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP		
	weight (kg)	dose (mg)	volume (ml)
UP TO 5 DAYS: <ul style="list-style-type: none"> • Dose = 0.01 mg/kg (max / dose = 0.04 mg) • Administer by rapid push • Follow with a 2.5 ml saline flush • Repeat every 3 to 5 minutes as required 	< 1	0.01	0.1
	1 - 2	0.02	0.2
	2 - 3	0.03	0.3
	3 - 4	0.04	0.4

ENDOTRACHEAL INSTILLATION ¹	ACP		
UP TO 5 DAYS: <ul style="list-style-type: none"> • Dose = 0.1 mg/kg (max / dose = 0.4 mg) • Instill directly into the ETT • Promptly ventilate for 2 to 3 breaths • Repeat every 3 to 5 minutes as required 	weight (kg)	dose (mg)	volume (ml)
	≤1 kg	0.1	1
	1 - 2	0.2	2
	2 - 3	0.3	3
	> 3	0.4	4

TABLE D: ANAPHYLAXIS & ANAPHYLACTIC SHOCK

AUTOINJECTION	EMR / PCP / ICP / ACP		
6 YEARS & OLDER: <ul style="list-style-type: none"> • Dose = 0.3 mg (orange injector) • Inject in the anterolateral thigh • Repeat once in 10 minutes if required UP TO 6 YEARS: <ul style="list-style-type: none"> • Dose = 0.15 mg (green injector) • Inject in the anterolateral thigh • Repeat once in 10 minutes if required 	<i>If a pediatric autoinjector is not available, administer the adult dose</i>		
INTRAMUSCULAR INJECTION	PCP / ICP / ACP		
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Dose = 0.5 mg • Inject in the anterolateral thigh • Repeat every 10 minutes as required INFANTS / CHILDREN: <ul style="list-style-type: none"> • Dose = 0.01 mg/kg • Max / dose = 0.5 mg • Inject in the anterolateral thigh • Repeat every 10 minutes as required 	weight (kg)	dose (mg)	volume (ml)
	5 - 10	0.1	0.1
	11 - 15	0.15	0.15
	16 - 20	0.2	0.2
	21 - 25	0.25	0.25
	26 - 30	0.3	0.3
	31 - 35	0.35	0.35
	36 - 40	0.4	0.4
	41 - 45	0.45	0.45
	> 46	0.5	0.5
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP		
ADULT: <ul style="list-style-type: none"> • Dose = 10 to 50 mcg • Administer by slow push over 1 to 2 minutes • Repeat every 3 to 5 minutes as required 			

INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Dose = 0.1 to 2 mcg/kg/min • Begin the infusion at 0.1 mcg/kg/min • Titrate in increments of 0.05 mcg/kg/min every 2 to 3 minutes as required 	

TABLE E: ASTHMA / BRONCHOSPASM ²			
INTRAMUSCULAR INJECTION	PCP / ICP / ACP		
	weight (kg)	dose (mg)	volume (ml)
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Dose = 0.5 mg • Inject in the anterolateral thigh • Repeat once in 20 minutes if required <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> • Dose = 0.01 mg/kg (max / dose = 0.5 mg) • Inject in the anterolateral thigh • Repeat once in 20 minutes if required 	5 - 10	0.1	0.1
	11 - 15	0.15	0.15
	16 - 20	0.2	0.2
	21 - 25	0.25	0.25
	26 - 30	0.3	0.3
	31 - 35	0.35	0.35
	36 - 40	0.4	0.4
	41 - 45	0.45	0.45
	> 46	0.5	0.5

TABLE F: CROUP	
NEBULIZATION	PCP / ICP / ACP
<p>UP TO 6 YEARS:</p> <ul style="list-style-type: none"> • Dose = 0.5 mg/kg (max / dose = 5 mg) • Dilute with saline to a maximum volume of 5 ml • Nebulize over 15 minutes • If the first dose is ineffective, repeat a second dose after 15 minutes • Repeat every 2 hours as required ³ 	

TABLE G: PUSH-DOSE PRESSOR SUPPORT ⁴

INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Dose = 10 to 50 mcg • Administer by slow push over 1 to 2 minutes • Repeat every 3 to 5 minutes as required 	

TABLE H: BETA BLOCKER OR CALCIUM CHANNEL BLOCKER TOXICITY / OVERDOSE ⁵

INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Dose = 0.1 to 2 mcg/kg/min • Begin the infusion at 0.1 mcg/kg/min • Titrate in increments of 0.05 mcg/kg/min every 2 to 3 minutes as required 	

NOTES

1. Because endotracheal (ET) administration results in less drug bioavailability and lower coronary perfusion pressure, the ET dose is higher than the IV dose in cardiac arrest and newborn resuscitation.
2. Intramuscular epinephrine is potentially useful in patients who cannot tolerate or cooperate with inhaled bronchodilators.


It may be beneficial in severe asthma exacerbations but can potentially cause serious cardiovascular complications in patients with chronic obstructive pulmonary disease (COPD).
3. The effects of epinephrine for croup will generally last about 2 hours. Some children may experience a rebound with recurring or worsening symptoms after it wears off. Observe for rebound symptoms after administration.
4. The safest way to administer a vasopressor is by continuous infusion, but establishing an infusion takes time. A critically low mean arterial pressure (MAP) may be the final step before cardiovascular collapse and cardiac arrest, so rapid intervention is required.

Bolus administration of epinephrine (push-dose pressor support) has been shown to be a safe and effective temporizing measure for immediate BP control in adults with shock. If ongoing pressor support is required, transition to a continuous infusion as soon as possible
5. Because of its propensity to cause tachycardia, epinephrine is an ideal agent in beta blocker or calcium channel blocker toxicity, but a higher than usual dose may be required.
6. Do not mix epinephrine with sodium bicarbonate.
7. The syringe / bag must be clearly labelled with the final concentration of epinephrine.

LINKS	
<ul style="list-style-type: none"> • A03 - High Alert Medications • C02 - Advanced Cardiac Arrest • C05 - Bradycardia • C07.1 - Undifferentiated Adult Shock • C07.2 - Undifferentiated Pediatric Shock • C07.3 - Cardiogenic Shock • C07.4 - Septic Shock 	<ul style="list-style-type: none"> • C12 - Beta Blocker & Calcium Channel Blocker Toxicity • D03 - Newborn Care & Resuscitation • E01 - Croup • E03 - Anaphylaxis • E07 - Asthma & COPD • F02.1 - Advanced Trauma Arrest • H11 – ACP Medication Formulary

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Provincial Medical Director	Associate Provincial Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Correction of incorrect IM volume & units for pediatric anaphylaxis & asthma • Epinephrine infusion can only be administered with a pump • Reordering of tables

	M06.1 - GLUCOSE	
	Version date: 2025-12-09	Effective date: 2026-01-06 (07:00)

INDICATIONS
<ul style="list-style-type: none"> Known or suspected hypoglycemia ¹

WARNINGS
<ul style="list-style-type: none"> None

ADMINISTRATION	
ORAL / BUCCAL ²	EMR / PCP / ICP / ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> 25 to 50 grams Repeat every 10 minutes as required, to a maximum 3 doses <p>ADOLESCENTS:</p> <ul style="list-style-type: none"> 12.5 to 25 grams Repeat every 10 minutes as required, to a maximum 3 doses <p>CHILDREN:</p> <ul style="list-style-type: none"> 12.5 grams Repeat every 10 minutes as required, to a maximum 3 doses <p>INFANTS (6 DAYS & OLDER):</p> <ul style="list-style-type: none"> 6.25 to 12.5 grams Repeat every 10 minutes as required, to a maximum 3 doses 	

NEWBORNS (UP TO 5 DAYS OF AGE): ⁴

OVER 34 WEEKS GESTATIONAL AGE & ABLE TO FEED:


- Administer formula or 5% dextrose in water (figure 1)

OVER 34 WEEKS GESTATIONAL AGE BUT UNABLE TO FEED:

- Administer glucose gel (table 1)
- Dry the inside of both cheeks with gauze, then massage half the dose into each buccal mucosa.



UNDER 34 WEEKS GESTATIONAL AGE:

- Administer glucose gel (table 1)
- Dry the inside of both cheeks with gauze, then massage half the dose into each buccal mucosa.

TABLE 1: GLUCOSE GEL DOSING (40%)			FIGURE 1
NEWBORN WEIGHT	VOLUME	DOSE	
2 kg or less	1 ml	400 mg	
2.1 to 3 kg	1.5 ml	600 mg	
3.1 to 4 kg	2 ml	800 mg	
4.1 to 5 kg	2.5 ml	1000 mg	
5.1 to 6 kg	3 ml	1200 mg	


NOTES
<ol style="list-style-type: none"> If blood glucose testing is not available, treat based on symptoms. If the patient is unable to chew or swallow, has a depressed level of consciousness, or is unable to protect the airway (and other options for correcting hypoglycemia are not promptly available) turn the patient on their side & apply glucose paste to the inside of the lower cheek. Be alert for potential aspiration. The amount of glucose may differ by preparation or manufacturers. Prompt administration is often more important than the exact dosing. Consult the package directions for the exact dosing recommendations. If uncertain, assume the following: <ul style="list-style-type: none"> Commercially available gel commonly contains approximately 30 grams of glucose per tube. Commercially available solution commonly contains approximately 25 grams of glucose per 100 ml. Commercially available tablets commonly contain approximately 4 grams of glucose per tablet. Babies do not normally learn to coordinate the sucking, swallowing and breathing necessary for feeding until about 34 weeks gestational age.

LINKS
<ul style="list-style-type: none"> D10 - Neonatal Hypoglycemia E10 - Hypoglycemia

APPROVED BY	
	
Medical Director - Provincial EMS/PT	Associate Medical Director - Provincial EMS/PT

VERSION CHANGES (refer to X08 for change tracking)

- Addition newborn dosing
- Reduces infant dosing

	M06.2 - DEXTROSE	
	Version date: 2025-11-28	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Known hypoglycemia (table A) ¹ • Newborn hypoglycemia (table B)

WARNINGS
<p>In the newborn, a dextrose infusion must be administered by pump. Do not administer by gravity drip under any circumstances.</p> <p>Refer to H11 for information regarding concentrations & dilutions.</p>
<p>CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • For the treatment of newborn hypoglycemia, refer also to D10 • For the treatment of beta blocker or calcium channel blocker toxicity, refer to M20 • For treatment of hyperkalemia, refer to M30

TABLE A: HYPOGLYCEMIA	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
<p>ADULTS / ADOLESCENTS:</p> <p><u>10% CONCENTRATION:</u></p> <ul style="list-style-type: none"> • Dose = 5 ml/kg (maximum volume per dose = 250 ml) • Administer by slow push over 1 minute • Repeat every 5 minutes as required <p><u>50% CONCENTRATION:</u> ¹</p> <ul style="list-style-type: none"> • Dose = 1 ml/kg (maximum volume per dose = 50 ml) • Administer by slow push over 1 minute • Repeat every 5 minutes as required Dose 	
<p>INFANTS / CHILDREN (10% CONCENTRATION): ²</p> <ul style="list-style-type: none"> • Dose = 5 ml/kg • Administer by slow push over 1 minute • Maximum volume per dose = 250 ml • Repeat every 5 minutes as required 	

TABLE B: NEWBORN HYPOGLYCEMIA (DELIVERY UP TO 5 DAYS)

INTRAVENOUS (INTRAOSSEOUS) – INTERMITTENT DOSING	PCP / ICP / ACP
<ul style="list-style-type: none"> • Administer 2 ml/kg of the 10% concentration by slow push over 5 to 10 minutes • Repeat dosing as required 	
INTRAVENOUS (INTRAOSSEOUS) – CONTINUOUS INFUSION	ACP
<ul style="list-style-type: none"> • Administer 2 ml/kg of the 10% concentration by slow push over 5 to 10 minutes • Immediately begin a continuous infusion of the 10% concentration at 5 ml/kg per hour • If infusion pump is not available, repeat intermittent dosing as required 	



NOTES

1. If volume overload is of concern, a paramedic can administer 50% dextrose to an adult or adolescent patient.
2. Never use the 50% concentration with newborns, infants or children. They can develop severe neurological injury with the rapid shifts in serum osmolality that may occur with concentrated dextrose.

LINKS

- A03 - High Alert Medications
- C12 - Beta Blocker & Calcium Channel Blocker Toxicity
- D10 - Newborn Hypoglycemia
- E10 - Hypoglycemia
- E11 – Hyperkalemia
- H11 – ACP Medication Formulary
- M20 - High-Dose Insulin & Dextrose Therapy
- M30 - Hyperkalemia Therapy


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VERSION CHANGES (refer to X08 for change tracking)

- Dextrose infusion in newborns must be administered by pump

- Removal of dosing for beta blocker / calcium channel blocker toxicity (covered in M20)

	M06.3 - GLUCAGON	
	Version date: 2025-02-04	Effective date: 2025-04-30 (07:00)

INDICATIONS
<ul style="list-style-type: none"> Known or suspected hypoglycemia ¹

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> Hypersensitivity to glucagon

ADMINISTRATION	
INTRANASAL	EMR / PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Administer 1 mg Repeat once in 10 to 15 minutes if required (use the alternate nostril) INFANTS / CHILDREN: <ul style="list-style-type: none"> Administer 1 mg if weight over 20 kg Administer 0.5 mg if weight under 20 kg Repeat once in 10 to 15 minutes if required (use the alternate nostril) 	
INTRAMUSCULAR	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Administer 1 mg Repeat once in 15 minutes if required INFANTS / CHILDREN: <ul style="list-style-type: none"> Administer 1 mg if weight over 20 kg Administer 0.5 mg if weight under 20 kg Repeat once in 10 to 15 minutes if required 	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Administer 1 mg by slow push over 1 to 2 minutes Repeat once in 10 to 15 minutes if required 	

INFANTS / CHILDREN:

- Administer 1 mg if weight over 20 kg
- Administer 0.5 mg if weight under 20 kg
- Inject by slow push over 1 to 2 minutes
- Repeat once in 10 to 15 minutes if required

NOTES

1. If blood glucose testing is not available, treat based on symptoms.
2. Glucagon may cause significant nausea. Consider co-administration of antiemetic.
3. Ensure that the patient is eating or receives oral glucose / intravenous dextrose.

LINKS

- E10 - Hypoglycemia

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Provincial Medical Director



Associate Provincial Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- Addition of advanced work scope

	M06.4 - GLUCAGON POWDER (BAQSIMI)	
	Version date: 2025-02-04	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Known or suspected hypoglycemia ¹

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to glucagon

ADMINISTRATION

INTRANASAL

EMR / PCP / ICP / ACP

4 YEARS & OLDER:



- 3 mg once

NOTES

1. If blood glucose testing is not available, treat based on symptoms.
2. If there is no response within 15 minutes, glucose or dextrose must be administered.
3. Glucagon may cause significant nausea. Consider co-administration of antiemetic.
4. Ensure that the patient is eating or receives oral glucose / intravenous dextrose after glucagon administration.

LINKS

- E10 - Hypoglycemia

APPROVED BY	
	
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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Addition of advanced work scope

APPENDIX A: ADMINISTRATION OF BAQSIMI GLUCAGON NASAL POWDER.

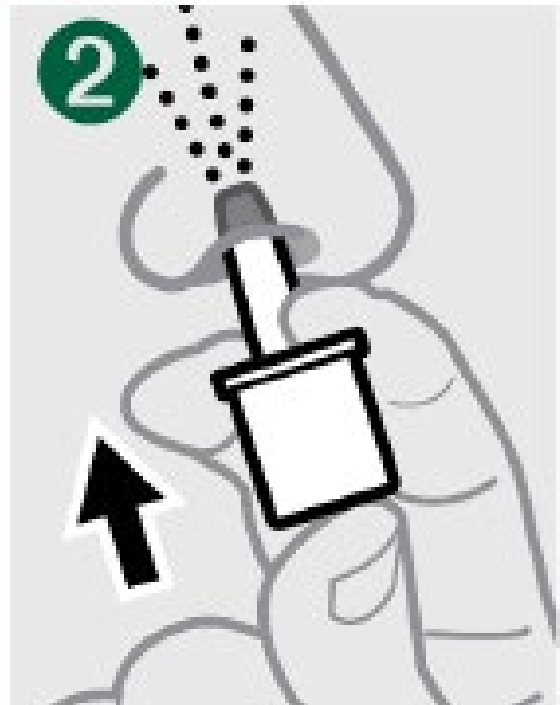
STEP #1: Remove the shrink wrap by pulling on the red stripe. Open the lid & remove the device from the tube. DO NOT TEST BEFORE USE.


STEP #2: Hold the device between your thumb and fingers. DO NOT PRESS THE PLUNGER UNTIL YOU ARE READY TO ADMINISTER.

STEP #3: Insert the tip gently into one nostril until your fingers touch the outside of the nose.



STEP #4: Push the plunger all the way in. The dose is complete when the green line is no longer showing.



	M07.1 - MIDAZOLAM (VERSED)	
	Version date: 2025-12-04	Effective date: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Active seizures (table A) • Chemical restraint, alcohol or benzodiazepine withdrawal, or stimulant toxicity (table B) • Advanced airway maintenance (table C) • Sedation for procedure (table D) • Procedural sedation & analgesia (table E)

WARNINGS
ABSOLUTE CONTRAINDICATIONS <ul style="list-style-type: none"> • Hypersensitivity to midazolam • Respiratory depression
USE WITH CAUTION: <ul style="list-style-type: none"> • Uncorrected hypotension / hypoperfusion / shock

TABLE A: SEIZURES ¹	
INTRANASAL ²	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 5 mg • Repeat once in 10 minutes if required (use the alternate nostril) INFANTS / CHILDREN: <ul style="list-style-type: none"> • Administer 0.2 mg/kg • Maximum per dose = 5 mg • Repeat once in 10 minutes if required (use the alternate nostril) 	
INTRAMUSCULAR ²	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 5 mg • Repeat once in 15 minutes if required INFANTS / CHILDREN:	

<ul style="list-style-type: none"> • Administer 0.2 mg/kg • Maximum per dose = 5 mg • Repeat once in 15 minutes if required 	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 0.05 to 0.1 mg/kg by slow push over 1 minute • Maximum per dose = 5 mg • Repeat every 5 minutes as required 	

TABLE B: CHEMICAL RESTRAINT / ALCOHOL OR BENZODIAZEPINE WITHDRAWAL / STIMULANT TOXICITY	
INTRAMUSCULAR	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • 5 mg • Repeat every 15 to 30 minutes as required • Maximum per hour = 20 mg³ 	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 0.05 to 0.1 mg/kg by slow push over 1 minute • Maximum per dose = 5 mg • Repeat every 10 to 15 minutes as required • Maximum per hour = 20 mg³ 	



TABLE C: FOR ADVANCED AIRWAY MAINTENANCE	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 0.05 to 0.1 mg/kg (maximum per dose = 5 mg) • Administer by slow push over 1 minute • Repeat every 5 minutes as required 	

TABLE D: SEDATION FOR PROCEDURE	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 0.05 to 0.1 mg/kg by slow push over 1 to 2 minutes Maximum per dose = 5 mg Repeat once in 5 minutes if required 	


TABLE E: PROCEDURAL SEDATION & ANALGESIA ⁴	
INTRAVENOUS (INTRAOSSEOUS)	ACP ONLY
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 0.05 to 0.1 mg/kg by slow push over 1 to 2 minutes Maximum per dose = 5 mg Titrate 0.05 mg/kg every 3 to 5 minutes as required to achieve desired level of sedation and analgesia 	

NOTES
<ol style="list-style-type: none"> Respiratory depression and hypotension are common in the post-seizure period. Continuously monitor respiratory and cardiac status. Providers must be prepared to manage the airway, support ventilations, and treat hypotension as required. Because of the unpredictability of seizures, administering medications by the intravenous (IV) route is preferred in patients who are actively seizing. If IV access is delayed or unavailable, intramuscular (IM) or intranasal (IN) midazolam (to a maximum of 2 doses) can be a temporizing measure, until vascular access is obtained. Chemical restraint with midazolam carries substantially more risk in the elderly compared to younger patients. Midazolam may have more pronounced respiratory and central nervous system effects, especially if the patient is frail, compromised, or cognitively impaired. Consider smaller individual and cumulative doses and slower administration. A paramedic with the advanced (ACP) work scope can combine midazolam (for its sedative and amnestic properties) with fentanyl (for its analgesic effects). One or both agents can be titrated to achieve an appropriate level of sedation and analgesia. When combining multiple CNS depressing agents, consider smaller individual and cumulative doses.

LINKS
<ul style="list-style-type: none"> A03 - High Alert Medications A13 - Procedural Sedation & Analgesia

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope• Addition of PSA to indications

	M07.5 - LORAZEPAM (ATIVAN)	
	Version date: 2025-02-04	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Severe anxiety or agitation that is interfering with, or may interfere with, the management and safe transport of the patient

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to lorazepam
- Hypotension / hypoperfusion / shock
- Respiratory depression
- Central nervous system depression

ADMINISTRATION

ORAL / SUBLINGUAL

PCP / ICP / ACP

ADULTS:

- 1 to 2 mg
- Repeat once in 15 to 30 minutes if required

ADOLESCENTS:



- 1 mg
- Repeat once in 15 to 30 minutes if required

LINKS


- E02 - Agitation

NOTES

1. Benzodiazepines may have more pronounced respiratory and central nervous system effects in the elderly, especially if frail or compromised. Consider the lower dose in patients over 75 years of age.

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope

	M08 – PENICILLIN G BENZATHINE (BICILLIN L-A)	
	Version date: 2025-02-04	Effective date: 2025-04-01 (07:00)

INDICATIONS

- Treatment of syphilis by community paramedic program

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to penicillin⁴
- Hypersensitivity to procaine

USE WITH CAUTION:

- Renal impairment
- Anticoagulation use or bleeding disorder

ADMINISTRATION

INTRAMUSCULAR

COMMUNITY PARAMEDIC

ALL AGES:



- 50,000 units/kg once (maximum dose = 2.4 million units)
- Inject half the volume by deep intramuscular injection into each buttock³
 - ADULTS: Inject into the upper outer quadrant of the buttock (dorsogluteal)
 - INFANTS & CHILDREN: Inject into the lower outer quadrant of the buttock (ventrogluteal)
- Before injecting, aspirate back to guard against intravascular injection⁴
- Observe for 30 minutes after administration

NOTES


1. Bicillin L-A is supplied in a prefilled syringe containing 1.2 million units in 2 ml. The maximum safe volume per injection site is 2 ml. Do not dilute it.
 - For patients weighing less than 24 kg (52 lbs), divide the total volume in half.
 - For patients weighing less than 48 kg (102 lb), two injections of a smaller volume may cause less discomfort than one of the two injections containing 2 ml.
2. To minimize discomfort, warm the antibiotic vial to room temperature and apply manual pressure over the injection site. Inject each at slow steady rate to minimize discomfort and avoid needle blockage. Discontinue injection if severe pain occurs.
3. Injection into other sites may cause damage to neurovascular structures or muscle fibrosis / atrophy.

4. Inadvertent intravascular administration may result in anaphylaxis, seizures, circulatory collapse, cardiac arrest, and death.
 - In case of anaphylaxis, treat as per E03 and transport to the closest open emergency department (ED).
 - In case of seizure, treat as per E14 and transport to the closest open ED.
5. Adverse effects (Jarisch-Herxheimer reaction) can start a few hours after beginning syphilis treatment, including fever & chills, headache, muscle pain and skin reactions, and do not represent an adverse reaction to penicillin..

LINKS
<ul style="list-style-type: none"> • E03 - Anaphylaxis • E14 - Seizure

APPROVED BY	
	
Medical Director - Community Paramedicine	Associate Medical Director - Community Paramedicine

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • New

	M09 - FUROSEMIDE (LASIX)	
	Version date: 2025-02-06	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Heart failure with evidence of pulmonary edema

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to furosemide or sulfonamides
- Hypotension / hypoperfusion / shock

ADMINISTRATION

INTRAVENOUS (INTRAOSSEOUS)

ICP / ACP

ADULTS:



- *Not currently on furosemide* - 20 to 40 mg
- *Currently on furosemide* - 40 to 80 mg
- Administer by slow push over 1 to 2 minutes
- No repeat dosing

NOTES


1. Although the safety and efficacy of diuretics to treat acute decompensated heart failure (ADHF) have not been established, extensive observational experience has demonstrated that are effective in relieving congestive symptoms in pulmonary edema and are essential for the successful treatment of most patients with ADHF and volume overload.

LINKS

- E08 - Decompensated Heart Failure & Cardiogenic Pulmonary Edema

APPROVED BY	
	
Provincial Medical Director	Associate Provincial Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of ACP work scope

	M11 - NALOXONE (NARCAN)	
	Version date: 2025-02-10	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Respiratory depression due to known or suspected opioid toxicity

WARNINGS

CONTRAINDICATIONS:

- Hypersensitivity to naloxone

USE WITH CAUTION:

- Opioid dependency ²

ADMINISTRATION

INTRANASAL

EMR / PCP / ICP / ACP

ALL AGES:

- Administer 2 mg
- Repeat every 2 to 3 minutes as required (use alternating nostrils)
- If nasal spray is not available, administer 1 ml of the injectable solution to each nostril delivered with mucosal atomizer device

INTRAMUSCULAR / SUBCUTANEOUS

PCP / ICP / ACP

5 YEARS & OLDER:

- Administer 0.4 to 2 mg
- Repeat the initial dose every 2 to 3 minutes as required, up to a total maximum initial dose = 10 mg ¹

UP TO 5 YEARS:

- Administer 0.1 mg/kg (maximum per dose = 2 mg)
- Repeat the initial dose every 2 to 3 minutes as required, up to a total maximum initial dose = 10 mg ¹

INTRAVENOUS (INTRAOSSEOUS) INJECTION

PCP / ICP / ACP

5 YEARS & OLDER:

- Administer an initial dose of 0.1 to 2 mg ²
- Repeat the initial dose every 2 to 3 minutes as required, up to a total maximum initial dose = 10 mg ¹

UP TO 5 YEARS:

- Administer 0.1 mg/kg (maximum per dose = 2 mg)
- Repeat the initial dose every 2 to 3 minutes as required, up to a total maximum initial dose = 10 mg¹

NOTES

1. For high potency opioids (e.g. fentanyl, carfentanil, alfentanil) doses of up to 10 mg may be required for reversal.
2. For chronic opioid users, consider titrating multiple smaller intravascular doses to achieve adequate respirations.
3. If the time to medical care will be delayed, repeat dosing every 20 to 60 minutes may be required.

APPROVED BY



Provincial Medical Director



Associate Provincial Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- Addition of advanced work scope

	M12 - HYPERTONIC SALINE (3%)	
	Version date: 2025-12-04	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Known or suspected cerebral herniation syndromes • Sodkum channel blocker toxicity

WARNINGS
<ul style="list-style-type: none"> • None

ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 5 ml/kg over 10 to 20 minutes (maximum volume = 250 ml) 	

NOTES
1. The optimal concentration and dose of hypertonic saline is uncertain due to insufficient evidence.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • C13 – Sodium Channel Blocker Toxicity • F07 - Head Trauma

APPROVED BY


EMS Medical Director



EMS Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- Addition of sodium channel blocker toxicity to indications

	M13.1 - HYDROCORTISONE	
	Version date: 2026-03-06	EFFECTIVE DATE: 2026-04-14 (07:00)

INDICATIONS
<ul style="list-style-type: none"> • Anaphylaxis (table A) • Asthma / acute exacerbation of chronic obstructive pulmonary disease (table B) • Known or suspected acute adrenal insufficiency (adrenal crisis) with known chronic adrenal insufficiency (table C)

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to hydrocortisone

TABLE A: ANAPHYLAXIS	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 5 mg/kg once by slow push over 1 to 2 minutes • Maximum dose = 100 mg 	



TABLE B: ASTHMA / AECOPD ²	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 5 mg/kg once by slow push over 1 to 2 minutes • Maximum dose = 100 mg 	

TABLE C: ADRENAL CRISIS	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 2 mg/kg by slow push over 1 to 2 minutes • Maximum dose = 100 mg 	


INTRAMUSCULAR	PCP / ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Administer 2 mg/kg • Maximum dose = 100 mg 	

NOTES:
<ol style="list-style-type: none"> 1. Patients with known adrenal insufficiency may have their own supply of prepared doses of hydrocortisone for emergencies, and this can be substituted when available. 2. Corticosteroids have a small but beneficial effect in moderate exacerbation of chronic obstructive pulmonary disease (AECOPD), including an improvement in dyspnea. Side effects such as worsening of diabetes or hypertension are unlikely with a single dose. The optimal timing of administration is not established but if the time to medical care is delayed paramedics should consider administration.

LINKS
<ul style="list-style-type: none"> • E03 - Anaphylaxis • E05 - Adrenal Insufficiency • E07- Asthma & COPD

APPROVED BY	
	
Medical Director - Provincial EMS/PT	Associate Medical Director - Provincial EMS/PT

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Addition of IM dosing for adrenal crisis

	M13.2 - DEXAMETHASONE	
	Version date: 2025-03-25	Effective date: 2025-04-30 (07:00)



INDICATIONS
<ul style="list-style-type: none"> • Croup with severe respiratory distress or impending respiratory failure

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to dexamethasone


DOSING	
INTRAVENOUS (INTRAOSSEOUS)	ACP
UP TO 6 YEARS: <ul style="list-style-type: none"> • Administer 0.6 mg/kg once by slow push over 1 to 2 minutes • Maximum dose = 16 mg 	
INTRAMUSCULAR	ACP
UP TO 6 YEARS: <ul style="list-style-type: none"> • Administer 0.6 mg/kg once • Maximum dose = 16 mg 	

NOTES:
1. Not applicable

LINKS
<ul style="list-style-type: none"> • E01 - Croup

APPROVED BY	
	
Medical Director - Provincial EMS/PT	Associate Medical Director - Provincial EMS/PT

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• New

	M14 - AMIODARONE	
	Version date: 2026-03-11	EFFECTIVE DATE: 2026-04-14 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Cardiac arrest due to ventricular fibrillation (VF) or pulseless ventricular tachycardia (PVT) that has not responded to at least one shock, one cycle CPR, and one dose of epinephrine (table A) • Maintenance of a stable rhythm after a return of spontaneous circulation (table B) • Maintenance of normal sinus rhythm after electrical cardioversion of an unstable tachycardia (table C) • Chemical cardioversion of a stable tachycardia <u>if the time to medical care will be delayed</u> (table D)

WARNINGS
<p>An amiodarone infusion should be administered by a mechanical infusion pump. With cardiac arrest, return of spontaneous circulation (ROSC), and unstable tachycardia it can be given by gravity drip if a pump is not available and therapy cannot be delayed.</p> <p>Refer to H11 for information regarding dilution.</p>
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to amiodarone or iodine • Hypotension, hypoperfusion, or cardiogenic shock ¹ • Bradycardia • Atrioventricular node block
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Heart failure • Prolonged QTc • Bundle branch block

TABLE A: CARDIAC ARREST	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Initial dose = 300 mg (6 ml) • Administer by rapid injection followed by saline flush • Repeat dose = 150 mg <u>once</u> in 5 minutes if VF / VT persists <p>INFANTS / CHILDREN / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Initial dose = 5 mg/kg (0.1 ml/kg) up to a maximum of 300 mg 	

- Administer by rapid injection followed by saline flush
- Repeat dose = 5 mg/kg every 5 minutes up to 2 more times if VF / VT persists up to a cumulative maximum of 15 mg/kg

TABLE B: POST CARDIAC ARREST ²**AMIODARONE NOT GIVEN DURING RESUSCITATION**

INTRAVENOUS (INTRAOSSEOUS)

ICP / ACP

ADULTS:

- Loading dose = 300 mg (6 ml)
- Administer by infusion pump, gravity drip, or slow injection over 10 minutes
- Follow with a maintenance dose at a rate of 1 mg/min over 6 hours (total = 360 mg) using an infusion pump or gravity drip

AMIODARONE GIVEN DURING RESUSCITATION

INTRAVENOUS (INTRAOSSEOUS)

ICP / ACP

ADULTS:

- Do not administer the loading dose
- Initiate a maintenance dose at a rate of 1 mg/min over 6 hours (total = 360 mg) over 6 hours using an infusion pump or gravity drip

TABLE C: POST ELECTRICAL CARADIOVERSION OF UNSTABLE TACHYCARDIA

INTRAVENOUS (INTRAOSSEOUS)

ACP

ADULTS:

- Loading dose = 150 mg (3 ml)
- Administer by infusion pump, gravity drip or slow injection over 10 minutes
- Follow with a maintenance dose at a rate of 1 mg/min over 6 hours (total = 360 mg) using an infusion pump or gravity drip

TABLE D: CHEMICAL CARIOVERSION OF STABLE TACHYCARDIA

INTRAVENOUS (INTRAOSSEOUS)	ACP
ADULTS: <ul style="list-style-type: none"> • Loading dose = 150 mg (3 ml) • Administer by infusion pump or slow injection over 10 minutes • Follow with a maintenance dose at a rate of 1 mg/min over 6 hours (total = 360 mg) using an infusion pump 	



NOTES

1. Too rapid administration of amiodarone can result in hypotension. Amiodarone loading must be done by slow push. If administering by infusion and hypotension develops, slow the infusion rate. If hypotension persists, discontinue the infusion.
2. Evidence suggests that antiarrhythmic therapy reduces the risk of recurrent malignant ventricular dysrhythmias after VF / VT arrest of unknown etiology in adult patients. If the time to medical care will be delayed, consider amiodarone administration even with normal sinus rhythm.
3. For pediatric patients, information supporting antidysrhythmic administration after VF / VT arrest or electrical cardioversion of an unstable tachycardia is sparse. Underlying causes should be corrected, and recurrent ventricular dysrhythmias should be treated as per C06.2

LINKS


- A03 - High Alert Medications
- C02.1 - Advanced Cardiac Arrest (adult)
- C02.2 – Advanced Cardiac Arrest (pediatric)
- C06.1 - Tachycardia (adult)
- C06.2 - Tachycardia (pediatric)
- H11 – ACP Medication Formulary

APPROVED BY

	
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VERSION CHANGES (refer to X08 for change tracking)

- Can be administered by gravity drip after electrical cardioversion of unstable tachycardia (separation of table C for clarity)

	M15.1 – SALBUTAMOL (VENTOLIN, COMBIVENT)²	
	Version date: 2025-04-24	Effective date: 2024-04-30 (07:00)

INDICATIONS	
<ul style="list-style-type: none"> Acute exacerbation of asthma (table A) Acute exacerbation of chronic obstructive pulmonary disease (table B) Bronchospasm due to anaphylaxis (table C) 	For the treatment of hyperkalemia, refer to M30

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> Hypersensitivity to salbutamol

TABLE A: ACUTE EXACERBATION OF ASTHMA	
MDI WITH SPACER	EMR / PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Initial treatment - in the first hour administer 2 to 10 inhalations every 20 minutes for up to 3 doses as required Evaluate the response after every 2 inhalations After the initial treatment, repeat 2 to 10 inhalations every hour as required INFANTS / CHILDREN: <ul style="list-style-type: none"> Initial treatment - in the first hour administer 4 to 10 inhalations every 20 minutes for up to 3 doses as required After the first 4 inhalations, evaluate the response after every 2 inhalations After the initial treatment, repeat 4 to 10 inhalations every hour as required 	
NEBULIZER	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> Initial treatment - in the first hour administer 2.5 to 5 mg every 20 minutes for up to 3 doses as required Evaluate the response after every nebulization After the initial treatment, repeat 2.5 to 5 mg every hour as required INFANTS / CHILDREN: <ul style="list-style-type: none"> Initial treatment - administer 0.15 mg/kg per dose (minimum dose = 2.5 mg / maximum dose = 5 mg) every 20 minutes for up to 3 doses in the first hour Evaluate the response after every nebulization After the initial treatment, repeat 0.15 mg/kg every hour as required 	

TABLE B: ACUTE EXACERBATION OF COPD

MDI WITH SPACER	EMR / PCP / ICP / ACP
ADULTS: <ul style="list-style-type: none"> • Initial treatment - administer 2 to 4 inhalations every hour for up to 3 doses as required • Evaluate the response after every 2 inhalations • After the initial treatment, repeat 2 to 4 inhalations every 2 hours as required 	
NEBULIZER	PCP / ICP / ACP
ADULTS: <ul style="list-style-type: none"> • Initial treatment - administer 2.5 mg every hour for up to 3 doses as required • Evaluate the response after every nebulization • After the initial treatment, repeat 2.5 mg every 2 hours as required 	

TABLE C: BRONCHOSPASM DUE TO ANAPHYLAXIS

MDI WITH SPACER	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 2 to 10 inhalations • Repeat every 20 minutes as required 	
NEBULIZER	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 2.5 to 5 mg • Repeat every 20 minutes as required 	


NOTES

1. Medication administration by nebulization is considered an aerosol generating procedure (AGMP). Appropriate personnel protective equipment (PPE) is required (A09).
2. The dosing of Ventolin, Combivent, and generic salbutamol is equivalent.
3. Metered-dose inhalers (MDI) of Ventolin, Combivent, and generic salbutamol each provide 100 mcg salbutamol per actuation. Nebulizer solutions of Ventolin (0.5%), Combivent, and generic salbutamol (0.1%), each contain 2.5 mg of salbutamol per 2.5 ml.

LINKS
<ul style="list-style-type: none"> • A09 - Aerosol Generating Medical Procedures • E03 - Anaphylaxis • E07 - Asthma & COPD • M30 - Hyperkalemia Therapy

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Addition of advanced work scope • Revised dosing directions for asthma, COPD, and anaphylaxis for greater clarity and ease of use • Hyperkalemia indication moved to new standing order

	M15.2 – IPRATROPIUM BROMIDE (ATROVENT, COMBIVENT)²	
	Version date: 2025-02-11	Effective date: 2024-04-30 (07:00)

INDICATIONS

- Acute exacerbation of asthma (table A)
- Acute exacerbation of chronic obstructive pulmonary disease (table B)

WARNINGS

ABSOLUTE CONTRAINDICATION:

- Hypersensitivity to ipratropium bromide

USE WITH CAUTION:

- Narrow angle glaucoma
- Prostatic hypertrophy / bladder neck obstruction

TABLE A: ACUTE EXACERBATION OF ASTHMA

MDI WITH SPACER	ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 4 to 8 inhalations every 20 minutes for 3 doses as required, then repeat hourly as required 	
NEBULIZER	ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 0.5 mg every 20 minutes for up to 3 doses as required, then repeat hourly if required INFANTS / CHILDREN: <ul style="list-style-type: none"> • Administer 0.25 to 0.5 mg every 20 minutes for up to 3 as required, then repeat hourly if required 	

TABLE B: ACUTE EXACERBATION OF COPD

MDI WITH SPACER	ACP
ADULTS: <ul style="list-style-type: none"> • Administer 2 to 4 inhalations every hour for 3 doses as required, then repeat every 2 to 4 hours as required 	
NEBULIZER	ACP

ADULTS:

- Administer 0.5 mg every hour for 3 doses as required, then repeat every 2 to 4 hours as required

NOTES

1. Medication administration by nebulization is considered an aerosol generating procedure (AGMP). Appropriate personnel protective equipment (PPE) is required (A09).
2. The dosing of Atrovent, Combivent, and generic ipratropium is equivalent.
Metered-dose inhalers (MDI) of Atrovent, Combivent, and generic ipratropium bromide each provide 20 mcg ipratropium per actuation. Nebulizer solutions of Combivent and generic ipratropium each contain 2.5 mg of salbutamol per 2.5 ml.

LINKS

- A09 - Aerosol Generating Medical Procedures
- E07 - Asthma & COPD

APPROVED BY



Provincial Medical Director



Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- New

	M16 - OXYTOCIN (SYNTOCINON)	
	Version date: 2025-06-09	Effective date: 2025-06-17 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Routine postpartum prophylaxis (table A) • Postpartum hemorrhage (table B)



WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to oxytocin • Multiple gestations before all fetuses are delivered • Uterine inversion before the uterus has been repositioned

TABLE A: ROUTINE POSTPARTUM PROPHYLAXIS	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 10 units by slow push over 2 minutes 	
INTRAMUSCULAR	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • Administer 10 units 	


TABLE B: POSTPARTUM HEMORRHAGE	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ALL AGES: <ul style="list-style-type: none"> • If not yet given, administer 10 units IV by slow push over 1 minute • Then, administer by continuous infusion at 10 units/hr for 4 hours ¹ 	
PREPARATION: <ul style="list-style-type: none"> • Mix 40 units oxytocin in 1 liter of normal saline • Administer by infusion pump (if an infusion pump is not available, deliver at a drip rate for 250 ml/hr) 	

NOTES
<ul style="list-style-type: none"> • None

LINKS
<ul style="list-style-type: none"> • D02 - Prehospital Delivery • D08.1 - Post Partum Hemorrhage

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Correction to intramuscular administration

	M17 - KETAMINE (KETELAR)	
	Version date: 2025-12-18	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Analgesia for painful extrication when vascular access cannot be obtained (table A) • Analgesia for moderate to severe pain (table B) • Sedation for agitation (table C) • Sedation for maintenance of advanced airway (table D) • Procedural sedation & analgesia (table E) • Procedural sedation & analgesia when vascular access cannot be obtained (table F)

WARNINGS
<p>CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Known hypersensitivity to ketamine • Known history of laryngospasm with ketamine • Schizophrenia • Age under 3 months ¹ • Airway obstruction • Uncorrectable hypotension, hypoperfusion, or shock ² • Myocardial ischemia or infarction
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Corrected or correctable hypotension, hypoperfusion, or shock ² • Hypertension and/or tachycardia ³ • Respiratory depression (<u>when used for analgesia or agitation</u>) • Raised intracranial or intraocular pressure • Known history of hypersalivation or emergence reaction with ketamine ⁴ • Third trimester of pregnancy • Advanced age ⁵ • Decreased level of consciousness ⁶

TABLE A: ANALGESIA FOR PAINFUL EXTRICATION WITHOUT VASCULAR ACCESS ²	
INTRANASAL	PCP / ICP / ACP
<p>ALL PATIENTS OVER 3 MONTHS:</p> <ul style="list-style-type: none"> • Initial dose = 1 mg/kg (maximum = 100 mg per dose) • To maintain adequate analgesia, repeat 0.5 mg/kg every 10 minutes as required 	

TABLE B: ANALGESIA FOR MODERATE TO SEVERE PAIN⁶

INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL PATIENTS OVER 3 MONTHS:</p> <ul style="list-style-type: none"> Initial dose = 0.1 to 0.3 mg/kg (maximum = 30 mg per dose) To maintain adequate analgesia, repeat 0.1 to 0.3 mg/kg every 30 minutes as required Administer by slow push over 2 to 5 minutes⁷ 	

TABLE C: SEDATION FOR AGITATION⁸

INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS & ADOLESCENTS ONLY:</p> <ul style="list-style-type: none"> Initial dose = 2 mg/kg To achieve adequate sedation, repeat 2 mg/kg every 5 to 10 minutes & titrate to effect To maintain adequate sedation, repeat 2 mg/kg every 30 minutes as required Administer by slow push over 2 to 5 minutes⁷ 	
INTRAMUSCULAR	ACP
<p>ADULTS & ADOLESCENTS ONLY:</p> <ul style="list-style-type: none"> Initial dose = 4 mg/kg To achieve adequate sedation, repeat 4 mg/kg <u>once</u> after 10 minutes if required 	

TABLE D: MAINTENANCE OF ADVANCED AIRWAY

INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL PATIENTS OVER 3 MONTHS:</p> <ul style="list-style-type: none"> Initial dose = 1 mg/kg To achieve adequate sedation, repeat 1 mg/kg every 5 to 10 minutes & titrate to effect To maintain adequate sedation, repeat 1 mg/kg every 30 minutes as required Administer by slow push over 2 to 5 minutes⁷ 	

TABLE E: PROCEDURAL SEDATION & ANALGESIA ⁹

INTRAVENOUS (INTRAOSSEOUS)	ACP ONLY
<p>ALL PATIENTS OVER 3 MONTHS:</p> <ul style="list-style-type: none"> • Initial dose = 1 mg/kg • To achieve adequate PSA, repeat 1 mg/kg every 5 minutes <u>& titrate to effect</u> • To maintain adequate PSA, repeat 0.5 to 1 mg/kg every 5 to 10 minutes as required • Administer by slow push over 2 to 5 minutes ⁷ 	

TABLE F: PROCEDURAL SEDATION WHEN VASCULAR ACCESS CANNOT BE OBTAINED

INTRAMUSCULAR	ACP ONLY
<p>ALL PATIENTS OVER 3 MONTHS:</p> <ul style="list-style-type: none"> • Initial dose = 2 mg/kg • To achieve adequate PSA, repeat 1 to 2 mg/kg <u>once</u> after 10 minutes if required 	

NOTES

1. Limited information is available on appropriate dosing for infants and children. Its safety in newborns and young infants is not established.
2. Ketamine can precipitate deterioration in a patient who is otherwise compensating for hemodynamic compromise. Be especially careful when administering without vascular access.
3. Ketamine may cause a transient increase in heart rate and blood pressure, that do not require treatment.
4. Ketamine may cause hypersalivation and an increase in tracheobronchial secretions. Have suction equipment readily available.
5. Consider reducing the dose by 50 percent for patients over 65 years of age.
6. Ketamine can cause degree of sedation, although respiratory drive and protective reflexes usually remain intact. Use caution when combining ketamine with other CNS-depressing analgesics, especially opioids. Consider smaller individual and cumulative doses.
7. When given by the intravascular route, ketamine should always be administered slowly over 2 to 5 minutes. Depending on the urgency of the situation, a slower administration rate (10 to 15 minutes) reduces the risk of adverse reactions, such as hypersalivation or partial dissociation.
8. The dose for agitation is higher than that for other indications, to reduce the risk of partial dissociation which may increase the patient's anxiety.
9. Ketamine combines both analgesia and sedative properties. It can be used alone for procedural sedation and analgesia (PSA) or in combination with propofol or midazolam. Midazolam may decrease the incidence of emergence reactions.
10. If vascular access cannot be obtained, paramedics with the primary (PCP) work scope and above may administer intranasal ketamine for painful extrication. Likewise, paramedics with the advanced (ACP work scope only can

administer intramuscular ketamine for PSA. In both situations, other agents should not be administered and guard against hypotension. ²

LINKS

- A03 - High Alert Medications
- A13 - Procedural Sedation & Analgesia

APPROVED BY




Provincial Medical Director



Associate Provincial Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- Revision of all dosing
- Addition of indication for PSA (IM) without vascular access
- Hypersalivation and emergence reaction “moved to use with caution”

	M18 - SODIUM BICARBONATE	
	Version date: 2026-03-09	Effective date: 2026-04-14 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS	
<ul style="list-style-type: none"> Sodium channel blocker toxicity (table A) Beta blocker toxicity (table B) Prolonged cardiac arrest causing metabolic acidosis (table C) 	For the treatment of hyperkalemia, refer to M30

WARNINGS
<ul style="list-style-type: none"> None

TABLE A: SODIUM CHANNEL BLOCKER TOXICITY ¹	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ICP / ACP
<u>CARDIAC ARREST</u>	
ADULTS / ADOLESCENTS (8.4%): <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by rapid injection & follow with saline flush (maximum per dose = 100 mEq) Repeat once if arrest persists; immediately begin bicarbonate infusion if ROSC is achieved 	
INFANTS / CHILDREN (4.2%): ² <ul style="list-style-type: none"> Administer 0.5 to 1 mEq (1 to 2 ml/kg) by rapid injection & follow with saline flush (maximum per dose = 50 mEq) Repeat once if arrest persists; immediately begin bicarbonate infusion if ROSC is achieved 	
<u>NON-ARREST</u> ³	
ADULTS / ADOLESCENTS (8.4%) <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by slow injection over 2 to 5 minutes (maximum per dose = 100 mEq) Repeat if ECG abnormalities persist or recur ³ If time to medical care will be delayed begin bicarbonate infusion 	
INFANTS / CHILDREN (4.2%): ² <ul style="list-style-type: none"> Administer 0.5 to 1 mEq (1 to 2 ml/kg) by slow injection over 2 to 5 minutes (maximum per dose = 50 mEq) Repeat if ECG abnormalities persist or recur ³ If time to medical care will be delayed begin bicarbonate infusion 	

INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ADULT / ADOLESCENT:</p> <ul style="list-style-type: none"> • Begin the infusion at 2.5 ml/kg per hour and titrate the infusion rate to correct the ECG abnormalities (maximum per hour = 250 ml) ² • PREPARATION: Add 150 mEq (150 ml) of 8.4% sodium bicarbonate to 1 liter of 5% dextrose (do not use saline-containing solutions) <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> • Begin the infusion at 2.5 ml/kg per hour and titrate the infusion rate to correct the ECG abnormalities (maximum per hour = 150 ml) ² • PREPARATION: Add 150 mEq (150 ml) of 8.4% sodium bicarbonate to 1 liter of 5% dextrose (do not use saline-containing solutions) 	

TABLE B: BETA BLOCKER TOXICITY ⁴	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<u>CARDIAC ARREST</u>	
<p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> • Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by rapid injection & follow with saline flush (maximum per dose = 100 mEq) • Repeat once if arrest persists <p>INFANTS / CHILDREN (4.2%): ²</p> <ul style="list-style-type: none"> • Administer 0.5 to 1 mEq (1 to 2 ml/kg) by rapid injection & follow with saline flush (maximum per dose = 50 mEq) • Repeat once if arrest persists 	
<u>NON-ARREST</u>	
<p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> • Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by slow injection over 2 to 5 minutes (maximum per dose = 100 mEq) • Repeat as required if bradycardia, hypotension, or prolonged QTc persist or recur ⁴ <p>INFANTS / CHILDREN (4.2%): ²</p> <ul style="list-style-type: none"> • Administer 0.5 to 1 mEq (1 to 2 ml/kg) by slow injection over 2 to 5 minutes (maximum per dose = 50 mEq) • Repeat as required if bradycardia, hypotension, or prolonged QTc persist or recur ⁴ 	

TABLE C: PROLONGED CARDIAC ARREST CAUSING METABOLIC ACIDOSIS ⁵	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> • Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by rapid injection & follow with saline flush (maximum per dose = 100 mEq) <p>INFANTS / CHILDREN (4.2%): ²</p> <ul style="list-style-type: none"> • Administer 0.5 to 1 mEq (1 to 2 ml/kg) by rapid injection & follow with saline flush (maximum per dose = 50 mEq) 	

NOTES

- | |
|--|
| <ol style="list-style-type: none"> 1. Tricyclic antidepressants (TCA) and cocaine are especially common causes of cardiac arrest from overdose. 2. <u>Do not administer 8.4 % sodium bicarbonate by bolus injection to infants and children.</u> If 4.2 % concentration is not available, make a one-to-one dilution with sterile water (do not use saline-containing solutions). 3. Sodium channel blockers can cause QRS prolongation and terminal right axis deviation (RAD). In the non-arrest state, therapy should be targeted towards normalizing the QRS duration. 4. Some beta blockers (e.g. sotalol) can prolong the QTc interval and provoke torsade de pointe. Therapy should be targeted towards reducing the QTc interval. 5. In a prolonged cardiac arrest, metabolic acidosis from the accumulation of lactate may render medications ineffective. Empiric treatment with bicarbonate may be warranted in refractory arrest 6. Sodium bicarbonate is not compatible with calcium salts (flush intravenous tubing well between administration of calcium and bicarbonate). |
|--|

LINKS


- | |
|--|
| <ul style="list-style-type: none"> • A03 - High Alert Medications • C02.1 - Advanced Cardiac Arrest (Adult) • C02.2 - Advanced Cardiac Arrest (Pediatric) • C12 - Beta Blocker & Calcium Channel Blocker Toxicity • C13 - Sodium Channel Blocker Toxicity • M30 - Hyperkalemia Therapy |
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EMS Medical Director	EMS Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
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- | |
|--|
| <ul style="list-style-type: none"> • Removal of separate table for TCA & cocaine toxicity (duplicative of sodium channel blocker table) • Sequence of tables reordered |
|--|

	M19 - HYDRALAZINE (APRESOLINE)	
	Version date: 2025-04-17	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Severe hypertension in pregnancy when labetalol is contraindicated ¹

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to hydralazine

USE WITH CAUTION:

- Tachycardia (HR less than 100 beats per minute)

ADMINISTRATION

INTRAVENOUS (INTRAOSSEOUS)

ACP

ADULTS / ADOLESCENTS:



- Administer 5 to 10 mg by slow push over 10 minutes
- Repeat 5 to 10 mg every 20 to 40 minutes as required

NOTES


1. Severe hypertension in pregnancy is defined as a systolic blood pressure (SBP) of 160 mmHg or greater and/or a diastolic blood pressure (DBP) of 110 mmHg or greater. The presence of symptoms or signs of end-organ damage elevates the diagnosis to severe preeclampsia (D09).
2. Hydralazine may cause a reduction in uteroplacental blood flow. Hypotension and tachycardia must be assiduously avoided.

LINKS

- D09 - Preeclampsia & Eclampsia

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• New

	M21 - NITROGLYCERIN	
	Version date: 2025-10-27	EFFECTIVE DATE: 2026-01-06 (07:00 HOURS)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS

- Known or suspected acute coronary syndrome or suspected ischemic cardiac pain (table A)
- Acute cardiogenic pulmonary edema (table B)
- Uterine inversion (table C)

WARNINGS

A nitroglycerin infusion must be administered with a pump. Do not administer by gravity drip under any circumstances.

Refer to H11 for information regarding concentrations & dilutions.

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to nitroglycerin, nitrates, or nitrites
- Systolic bloods pressure (SBP) is less than 90 mmHg (excluding uterine inversion)
- Use of any phosphodiesterase-5 inhibitor (PDE-5) within the last 24 hours
 - VIAGRA (sildenafil)
 - CIALIS (tadalafil)
 - LEVITRA (vardenafil)
- Increased intracranial pressure

USE WITH CAUTION:

- Heart rate (HR) less than 50 or greater than 100 beats per minute
- Aortic or mitral stenosis, constrictive pericarditis, or hypertrophic cardiomyopathy with left ventricular outflow obstruction
- Right ventricular ischemic dysfunction (e.g. right ventricular MI) ¹
- Known or suspected hypovolemia
- Cardiogenic shock

TABLE A: ACUTE CORONARY SYNDROME / ISCHEMIC CARDIAC PAIN

SUBLINGUAL

PCP / ICP / ACP

ADULTS:

- Administer 0.4 mg
- Repeat every 5 minutes as required

TOPICAL (TRANSDERMAL)	PCP / ICP / ACP
ADULTS: <ul style="list-style-type: none"> • Apply 0.4 to 0.8 mg/hr • If the patient's own patch has been on for longer than 12 hours, replace it with a fresh dose 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
ADULTS: <ul style="list-style-type: none"> • Begin the infusion at 5 to 10 mcg/min • Increase in increments of 5 to 10 mcg/min every 5 to 10 minutes as required • Maximum infusion rate = 400 mcg/min 	

TABLE B: ACUTE CARDIOGENIC PULMONARY EDEMA

SUBLINGUAL	PCP / ICP / ACP
ADULTS: <ul style="list-style-type: none"> • Administer 0.4 mg • Repeat every 5 minutes as required 	
TOPICAL (TRANSDERMAL)	PCP / ICP / ACP
ADULTS: <ul style="list-style-type: none"> • Apply 0.4 to 0.8 mg/hr • If the patient's own patch has been on for longer than 12 hours, replace it with a fresh dose 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
ADULTS: <ul style="list-style-type: none"> • Begin the infusion at 5 to 10 mcg/min • Increase in increments of 5 to 10 mcg/min every 5 to 10 minutes as required • Maximum infusion rate = 400 mcg/min 	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
ADULTS: <ul style="list-style-type: none"> • Administer 1 mg by slow push over 2 to 3 minutes • Repeat once in 5 to 10 minutes if required ³ 	

TABLE C: UTERINE INVERSION³

INTRAVENOUS (INTRAOSSEOUS) INJECTION

ACP

ADULTS / ADOLESCENTS:

- Administer 40 or 50 mcg by slow push over 1 minute
- Repeat up to 4 more times if required

NOTES

1. Hypotension must be avoided, especially with ST elevation myocardial infarction (STEMI). If the patient develops symptoms from too rapid or too great of a drop in blood pressure, reduce the infusion rate or hold further administration.
2. When administering by injection in acute cardiogenic pulmonary edema, the target should be a systolic blood pressure (SBP) of 160 mmHg or less and/or a mean arterial pressure (MAP) of 120 mmHg or less. Repeat once in 5 to 10 minutes if required.
3. Nitroglycerin will relax the uterine muscle, potentially enabling uterine repositioning. Bolus administration results in a short half-life which may be necessary in the patient who is hemodynamically unstable due to hemorrhage.
4. The syringe / container must be clearly labelled with the final concentration of nitroglycerin to avoid a potentially serious medication error.

LINKS

- A03 - High Alert Medications
- D08.2 - Uterine Inversion
- E04 - Acute Coronary Syndrome & STEMI & NSTEMI-ACS
- E08 - Heart Failure & Pulmonary Edema
- H11 – ACP Medication Formulary

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EMS Medical Director



EMS Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- A nitroglycerin infusion can only be administered by pump

	M22 - OLANZAPINE	
	Version date: 2025-02-12	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Known or suspected methamphetamine psychosis

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to olanzapine
- Uncooperative patient
- Hypotension
- Seizure or acute neurological deficit
- Chest pain or dyspnea suspicious for acute cardiac syndrome (ACS)

USE WITH CAUTION:

- History of extrapyramidal side effects
- History of neuroleptic malignant syndrome

ADMINISTRATION

ORAL

PCP / ICP / ACP

ADULTS / ADOLESCENTS:



- Administer 10 mg once

NOTES


1. Patients who have taken methamphetamine may rapidly develop extreme paranoia and demonstrate violent behavior with enhanced physical strength. After the onset of psychosis, forced medication administration may be difficult. Administration of olanzapine while the patient is cooperative may lessen the severity of psychotic symptoms.

LINKS

- E02 - Agitation

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope• Revised contraindications & cautions

	M23.1 - LABETALOL (TRANDATE)	
	Version date: 2025-10-27	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Acute ischemic stroke - blood pressure (BP) management prior to reperfusion therapy (table A) • Severe hypertension in pregnancy (table A) ² • Hypertensive emergency including acute aortic syndrome, subarachnoid hemorrhage, and intracerebral hemorrhage (table C)

WARNINGS
<p>A labetalol infusion must be administered by pump. Do not administer by gravity drip under any circumstances.</p> <p>Refer to H11 for information regarding concentrations & dilutions.</p>
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to labetalol • Sinus bradycardia • Sick sinus syndrome • Second- or third-degree heart block • Hypotension or compensated hypoperfusion • Decompensated heart failure • Cardiogenic shock • Cocaine overdose
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Asthma / chronic obstructive pulmonary disease • First degree heart block • Recent administration of verapamil or diltiazem • Compensated heart failure • Myasthenia gravis

TABLE A - ACUTE ISCHEMIC STROKE	
INTRAVENOUS	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Administer 10 to 20 mg by slow push over 1 to 2 minutes • Repeat once as required • Reduce the BP to 185/110 mmHg or lower ¹ 	

TABLE B - SEVERE HYPERTENSION IN PREGNANCY

INTRAVENOUS INJECTION	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer 20 mg by slow push over 1 to 2 minutes Repeat 20 to 40 mg every 10 to 30 minutes (cumulative maximum = 300 mg) If the time to medical care will be delayed, consider establishing a continuous infusion Reduce the BP to approximately 140/90 mmHg ² 	
INTRAVENOUS INFUSION	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer a loading dose of 20 mg by slow push over 1 to 2 minutes (this can be omitted if intermittent dosing was used prior to the infusion) Begin the infusion at 0.5 mg/min and slowly titrate (maximum infusion rate = 2 mg/min) Reduce the BP to approximately 140/90 mmHg ² 	

TABLE C - HYPERTENSIVE EMERGENCY ³

INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> Administer 20 mg by slow push over 1 to 2 minutes Repeat 20 to 40 mg every 10 to 30 minutes as required (cumulative maximum dose = 300 mg) If the time to medical care will be delayed, consider establishing a continuous infusion Limit the reduction in the mean arterial pressure (MAP) to 10 to 20 percent over the first hour, excluding acute aortic syndromes where the target SBP is 80 to 90 mmHg 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> Administer a loading dose of 20 mg by slow push over 1 to 2 minutes (this can be omitted if intermittent dosing was used prior to the infusion) Begin a continuous infusion at 0.5 mg/min and slowly titrate (maximum infusion rate = 2 mg/min) Limit the reduction in the mean arterial pressure (MAP) to 10 to 20 percent over the first hour, excluding acute aortic syndromes where the target SBP is 80 to 90 mmHg 	



NOTES

- Overly aggressive blood pressure (BP) reduction in acute ischemic stroke can reduce blood flow in the surrounding ischemic penumbra, but severe hypertension can contraindicate intravenous fibrinolytic therapy.
- Overly aggressive BP reduction may result in reduced uteroplacental blood flow.


3. Hypertensive emergencies include intracerebral hemorrhage, subarachnoid hemorrhage, acute decompensated heart failure, acute cardiogenic pulmonary edema, and hypertensive encephalopathy. Overly aggressive BP reduction may result in myocardial or cerebral ischemia.

Acute aortic syndromes such as aortic dissection or rupture aortic aneurysm require more aggressive BP reduction.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • D09 - Preeclampsia / Eclampsia • E06 - Abdominal Aortic Aneurysm • E12 - Hypertensive Emergency • H11 – ACP Medication Formulary

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • A labetalol infusion can only be administered by pump

	M23.3 - METOPROLOL (LOPRESSOR)	
	Version date: 2025-01-29	Effective date: 2025-04-30 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Rate control for stable atrial fibrillation / flutter (AF) • Stable supraventricular tachycardia (SVT) refractory to, or recurring after, adenosine

WARNINGS
<p>CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to metoprolol • Wide QRS complex ² • Second or third degree heart block • Hypotension or compensated hypoperfusion • Decompensated heart failure • Cardiogenic shock • Cocaine overdose
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Asthma / chronic obstructive pulmonary disease • History of sinus node dysfunction or first degree heart block • Recent administration of verapamil or diltiazem • Compensated heart failure • Myasthenia gravis

ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Administer 2.5 to 5 mg by slow push over 2 minutes • Repeat every 5 minutes as required • Max total dose = 15 mg 	



NOTES

- 1. A wide QRS complex with SVT or AF may indicate pre-excitation with an accessory pathway. Administration of atrioventricular node (AVN) blocking medications may result in life-threatening ventricular arrhythmias.

LINKS


- C06 - Tachycardia

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VERSION CHANGES (refer to X08 for change tracking)

- New

	M24 - MAGNESIUM SULFATE (20%)	
	Version date: 2026-03-09	EFFECTIVE DATE: 2026-04-14 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Cardiac arrest with polymorphic ventricular tachycardia (table A) • Torsade de pointes with pulse (table B) • Preeclampsia / eclampsia (table C) • Acute exacerbation of asthma or chronic obstructive pulmonary disease (table D)

WARNINGS
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Myasthenia gravis • Renal failure <p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Known or suspected hypermagnesemia

TABLE A: CARDIAC ARREST WITH POLYMORPHIC VENTRICULAR TACHYCARDIA	
INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Initial dose = 2 grams • Administer by rapid injection followed by saline flush • Repeat up to two more times as required (cumulative maximum = 6 grams) <p>INFANTS / CHILDREN / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Initial dose = 50 mg/kg (maximum per dose = 2 grams) • Administer by rapid injection followed by saline flush • Repeat up to two more times as required (cumulative maximum = 6 grams) 	

TABLE B: TORSADE DE POINTES WITH PULSE	
INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Initial dose = 1 gram • Administer by gravity drip, infusion pump, or slow injection over 15 minutes 	

- Repeat up to three more times as required (cumulative maximum = 4 grams)

INFANTS / CHILDREN / ADOLESCENTS:

- Initial dose = 20 mg/kg (maximum per dose = 1 gram)
- Administer by gravity drip, infusion pump, or slow injection over 15 minutes
- Repeat up to three more times as required (cumulative maximum = 4 grams)

TABLE C: PREECLAMPSIA / ECLAMPSIA

INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
<p style="text-align: center;"><u>ECLAMPSIA (PATIENT HAS NOT RECEIVED PROPHYLAXIS)</u></p> <p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Initial dose = 4 to 6 grams • Administer by gravity drip, infusion pump, or slow injection over 10 minutes • If seizure(s) recur, repeat 2 to 4 grams (cumulative maximum dose = 10 grams) 	
<p style="text-align: center;"><u>ECLAMPSIA (PATIENT HAS RECEIVED PROPHYLAXIS)</u></p> <p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Initial dose = 2 to 4 grams • Administer by gravity drip, infusion pump, or slow injection over 10 minutes • If seizure(s) recur, repeat 2 to 4 grams (cumulative maximum dose = 10 grams) 	
<p style="text-align: center;"><u>SEVERE PREECLAMPSIA (PROPHYLAXIS)</u></p> <p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Initial dose = 4 grams • Administer by gravity drip, infusion pump, or slow injection over 15 to 30 minutes 	

TABLE D: ACUTE EXACERBATION OF ASTHMA OR COPD ³

INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Single dose = 2 grams • Administer by gravity drip, infusion pump, or slow injection over over 20 minutes <p>INFANTS / CHILDREN / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Single dose = 50 mg/kg (maximum per dose = 2 grams) • Administer by gravity drip, infusion pump, or slow injection over 20 minutes 	

NOTES

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| <ol style="list-style-type: none"> 1. Monitor closely for signs of magnesium toxicity. Signs include slurred speech, decreased muscle tone and level of consciousness, and hypoventilation. Calcium chloride may be given to counteract magnesium toxicity. 2. Excluding during cardiac arrest or pre-arrest (torsade) magnesium should be administered gradually by infusion or slow injection, depending on the dose, rate of administration, and available equipment / resources. 3. Magnesium sulfate has demonstrated benefit in acute asthma. It may reduce hospitalization in individuals with respiratory failure or severe exacerbations of COPD that do not respond to short-acting inhaled bronchodilators. In patients with hypermagnesemia it may precipitate respiratory muscle weakness. |
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LINKS


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| <ul style="list-style-type: none"> • C02.1 - Advanced Cardiac Arrest (Adult) • C02.2 - Cardiac Arrest (Pediatric) • C06.1 - Tachycardia (Adult) • D09 - Preeclampsia & Eclampsia • E07 - Asthma & COPD • M26 - Calcium Chloride |
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VERSION CHANGES (refer to X08 for change tracking)
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| <ul style="list-style-type: none"> • May be administered by gravity drip pr infusion pump, or slow injection |
|---|

	M25 - LIDOCAINE HYDROCHLORIDE (XYLOCAINE)	
	Version date: 2025-11-18	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Cardiac arrest due to ventricular fibrillation (VF) or ventricular tachycardia (VT) that has not responded to at least one shock, one cycle of cardiopulmonary resuscitation, and one dose of epinephrine (table A) • Sodium channel blocker cardiotoxicity (table B) • Intraosseous (IO) analgesia (table C)

WARNINGS
<p>A lidocaine infusion should be administered by pump. During cardiac arrest and with return of spontaneous circulation (ROSC) it can be carefully given by gravity drip if a pump is not available and therapy cannot be delayed.</p> <p style="text-align: center;">Refer to H11 for information regarding concentrations & dilutions.</p>
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to lidocaine or amide-type local anesthetics (e.g. bupivacaine, ropivacaine, mepivacaine)
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Bradycardia • Atrioventricular node or infranodal block • Hypersensitivity to lidocaine, bupivacaine or mepivacaine • Use the lowest effective infusion rate: ² <ul style="list-style-type: none"> ○ Heart failure / myocardial depression ○ Renal failure ○ Liver failure

TABLE A: CARDIAC ARREST ¹	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Dose = 1 to 1.5 mg/kg • Maximum per dose = 100 mg • Administer by rapid push • Follow with a saline flush • Repeat dose = 0.5 to 0.75 mg/kg every 5 minutes as required • Cumulative maximum dose = 3 mg/kg • If ROSC is achieved, begin a continuous infusion as soon as possible 	

INFANTS / CHILDREN / ADOLESCENTS: <ul style="list-style-type: none"> • Dose = 1 mg/kg • Maximum per dose = 100 mg • Administer by rapid push • Follow with a saline flush • Immediately begin a continuous infusion • If the time from the initial load to the initiation of the infusion exceeds 15 minutes repeat 1 mg/kg (maximum = 100 mg) once 	
ENDOTRACHEAL	ACP
ADULTS: <ul style="list-style-type: none"> • Dose = 2 to 3.75 mg/kg • Dilute in sterile water • Instill directly into the ETT • Ventilate for five breaths • Repeat every 5 minutes as required • Cumulative maximum = 3 doses INFANTS / CHILDREN / ADOLESCENTS: <ul style="list-style-type: none"> • Dose = 2 to 3 mg/kg • Dilute in sterile water • Instill directly into the ETT • Ventilate for five breaths • Repeat every 5 minutes as required • Cumulative maximum = 3 doses 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
ALL AGES: <ul style="list-style-type: none"> • Begin the infusion at 0.02 mg/kg/min • Titrate in increments of 0.01 mg/kg/min every 5 to 10 minutes as required • Maximum infusion rate = 0.05 mg/kg/min 	

TABLE B: SODIUM CHANNEL BLOCKER CARDIOTOXICITY ¹



INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
ALL AGES: <ul style="list-style-type: none"> • Dose = 1 mg/kg • Maximum per dose = 100 mg • Administer by slow push over 2 to 5 minutes • Immediately begin a continuous infusion 	

INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Begin the infusion at 0.02 to 0.05 mg/kg/min • Titrate in increments of 0.01 mg/kg/min every 5 to 10 minutes as required • Maximum infusion rate = 0.05 mg/kg/min ⁴ 	


TABLE C: INTRAOSSEOUS ANALGESIA ³	
INTRAOSSEOUS	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Dose = 0.5 mg/kg • Maximum per dose = 50 mg • Slowly infuse over 2 minutes • Allow to dwell for 1 to 2 minutes • Flush with 10 ml of sterile saline • If initial relief is not sufficient, repeat 0.25 mg/kg (maximum per dose = 25 mg) • Repeat 0.25 to 0.50 mg/kg every 30 to 45 minutes as necessary (cumulative maximum per hour = 1.25 mg/kg) 	

NOTES
<ol style="list-style-type: none"> 1. In cardiac arrest lidocaine may be used instead of amiodarone, especially the arrest is due to sodium channel blocker cardiotoxicity, such as with tricyclic antidepressant (TCA) or cocaine overdose. Lidocaine is a sodium channel antagonist itself but competitively binds to sodium channels and rarely causes QRS prolongation. 2. In patients with known heart, renal or liver failure, the lowest continuous infusion dose should be used. DO NOT REDUCE THE BOLUS DOSES USED IN CARDIAC ARREST. 3. The 10 mg/ml concentration is preferred for intraosseous analgesia due to the larger volume. 4. The syringe / container must be clearly labelled with the final concentration of lidocaine to avoid a potentially serious medication error.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • C02.1 - Advanced Cardiac Arrest (Adult) • C02.2 – Advanced Cardiac Arrest (Pediatric) • C13 - Sodium Channel Blocker Toxicity • H11 – ACP Medication Formulary

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Revised notes for greater clarity• Lidocaine can be administered without an infusion pump if necessary

	M26 - CALCIUM CHLORIDE (10%)	
	Version date: 2025-02-14	Effective date: 2025-04-30 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS	
<ul style="list-style-type: none"> • Magnesium toxicity during treatment for eclampsia (table A) • Beta blocker and/or calcium channel blocker toxicity (table B) 	For the treatment of hyperkalemia refer to M30

WARNINGS
<ul style="list-style-type: none"> • None

TABLE A: MAGNESIUM TOXICITY	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by slow push over 2 to 5 minutes (maximum per dose = 2 grams) • Repeat once as required if signs of magnesium toxicity persist 	

TABLE B: BETA BLOCKER TOXICITY / CALCIUM CHANNEL BLOCKER TOXICITY ¹	
INTRAVENOUS (INTRAOSSEOUS)	ACP
<u>CARDIAC ARREST</u>	
ALL AGES: <ul style="list-style-type: none"> • Administer 20 mg/kg (0.2 ml/kg) by rapid push & follow with saline flush (maximum per dose = 2 grams) • Repeat once if arrest persists 	
<u>NONARREST</u>	
ALL AGES: <ul style="list-style-type: none"> • Administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by slow push over 5 minutes (maximum per dose = 2 grams) • Repeat once if bradycardia or hypotension persist 	

NOTES

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| <p>1. Evidence supporting the effectiveness of calcium administration in beta blocker (BB) or calcium channel blocker (CCB) toxicity is limited. Calcium may improve blood pressure and cardiac output in BB overdose, but may be ineffective with CCB toxicity, due to their negative effect on intracellular calcium handling.</p> <p>Severe hypercalcemia can provoke cardiac dysrhythmias due to the shortening of myocardial action potential duration. A trial of calcium is reasonable, but the serum level should be monitored before administering multiple sodium bicarbonate</p> <p>2. Sodium bicarbonate is not compatible with calcium salts (flush intravenous tubing well between administration of calcium and bicarbonate).</p> |
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LINKS


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| <ul style="list-style-type: none"> • A03 - High Alert Medications • C02 - Advanced Cardiac Arrest • C12 - Beta Blocker & Calcium Channel Blocker Toxicity • D09 - Preeclampsia & Eclampsia • M30 - Hyperkalemia Therapy |
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VERSION CHANGES (refer to X08 for change tracking)
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| <ul style="list-style-type: none"> • Addition of ACP work scope • Clarification of different dosing information for arrest vs nonarrest • Addition of indication for BB and CCB toxicity • Hyperkalemia moved to separate document (M30) |
|--|

	M27 - BENZTROPINE	
	Version date: 2025-04-24	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Extrapyrimal side effects (EPSE) after receiving a dopamine blocking medication ¹

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to benztropine

USE WITH CAUTION:

- Tachycardia
- Known angle-closure glaucoma

ADMINISTRATION

INTRAMUSCULAR

ACP

ADULTS / ADOLESCENTS:

- Administer 2 mg once


NOTES

1. Any medication that reduces the effect of dopamine in the brain may cause the following extrapyramidal side effects:
 - Motor hyperactivity or restlessness (akathisia)
 - Muscle rigidity
 - Bradykinesia (slowed motor movement)
 - Tremor
 - Acute dystonic reactions
 - Laryngospasm
 - Oculogyric crisis
 - Torticollis / retrocollis
 - Opisthotonis
2. Common precipitants include some of the medications administered by paramedics (haloperidol, metoclopramide, olanzapine) and many commonly prescribed antipsychotic medications including flupenthixol (FLUANXOL), loxapine (LOXAPAC), clozapine (CLOZARIL), quetiapine (SEROQUEL), and risperidone.

LINKS	
<ul style="list-style-type: none"> • M04.2 - Metoclopramide • M22 - Olanzapine • M34 - Haloperidol 	

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • New

	M28 - TRANEXAMIC ACID (TXA)	
	Version date: 2026-03-09	Effective date: 2026-04-14 (07:00)

INDICATIONS
<ul style="list-style-type: none"> • Major trauma and hemorrhage with or without signs of shock <u>within three hours of injury</u> • Nontraumatic hemorrhagic with signs of hypoperfusion or shock ² • Post partum hemorrhage ²

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to tranexamic acid



ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
ADULTS / ADOLESCENTS: <ul style="list-style-type: none"> • Single dose = 1 gram • Administer by gravity drip, infusion pump or slow injection over 10 minutes 	
INFANTS / CHILDREN: ¹ <ul style="list-style-type: none"> • Single dose = 15 mg/kg (maximum per dose = 1 gram) • Administer by gravity drip, infusion pump, or slow injection over 10 minutes 	

NOTES
<ol style="list-style-type: none"> 1. There is limited evidence to support the use of tranexamic acid in shock from nontraumatic hemorrhage, but it may be of benefit in some situations. 2. Do not give TXA in the same line as oxytocin. 3. There is limited data available regarding TXA in infants. Paramedics should contact OLMS to discuss administration.

LINKS


- C07.2 - Non Trauma Hemorrhagic Shock
- D08.1 - Post Partum Hemorrhage
- F01 - Major Trauma

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VERSION CHANGES (refer to X08 for change tracking)

- Can be administered by gravity drip or infusion pump

	M29 – LEVETIRACETAM (KEPPRA)	
	Version date: 2025-11-13	EFFECTIVE DATE: 2026-01-06 (07:00)

INDICATIONS

- Seizure prophylaxis with severe traumatic brain injury ¹
- Status epilepticus

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to levetiracetam

USE WITH CAUTION:

- Prolonged QT ²
- Pregnancy ³

ADMINISTRATION

INTRAVENOUS (INTRAOSSEOUS)

ACP

SEIZURE PROPHYLAXIS WITH SEVERE TRAUMATIC BRAIN INJURY

ADULTS:

- Administer 20 mg/kg once by infusion pump over 15 minutes

INFANTS / CHILDREN / ADOLESCENTS:

- Administer 10 to 20 mg/kg once by infusion pump over 15 minutes

STATUS EPILEPTICUS

ALL AGES:

- Administer 60 mg/kg (max / dose = 4500 mg) by infusion pump over 15 minutes ⁴

NOTES

1. If the time to the next level of care will be significantly delayed, paramedics with the advanced work scope *may* consider the prophylactic administration of levetiracetam in patients with severe acute TBI. For the purposes of this document, TBI is defined as significant head trauma and any one or more of the following:
 - Penetrating head wound
 - Depressed skull fracture
 - GCS less than 11

NOTE: The evidence supporting the benefit of anticonvulsant medication in traumatic brain injury (TBI) is conflicting. The optimal timing of administration is unclear, early administration may not change long-term outcomes, and some agents may inhibit neurological recovery.

2. Levetiracetam can cause or exacerbate prolonged QT and, except during status epilepticus, its use should be avoided with known prolonged QT.
3. Levetiracetam crosses the placenta and is detectable in the newborn but is associated with a lower risk of congenital malformations with long-term use compared to other anticonvulsants.
4. In status epilepticus, if an infusion pump is not available, the dose of levetiracetam can be added to 250 ml of intravenous crystalloid solution and infused over 15 minutes.
5. Levetiracetam can cause CNS depression, and this may be exacerbated after a prolonged seizure or benzodiazepine administration. Carefully monitor respiratory status after administration.

LINKS

- E14 - Seizure & Status Epilepticus
- F07 - Head Trauma

APPROVED BY




EMS Medical Director



EMS Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- Indications limited to status epilepticus & TBI under certain conditions
- Addition of pregnancy as a caution
- Caveat that administration should be by infusion pump, unless status & no pump available

	M30 - HYPERKALEMIA THERAPY	
	Version date: 2025-04-16	Effective date: 2025-04-30 (07:00)
ERS HIGH RISK MEDICATIONS (A03)		

INDICATIONS
<ul style="list-style-type: none"> Hyperkalemia that is known by measurement or suspected, based on the presence of symptoms and / or electrocardiographic (ECG) abnormalities, in a patient with end-stage renal disease (ESRD) or advanced stage chronic kidney disease (CKD) Any dialysis-dependent patient who has missed at least one or more dialysis treatments <u>irrespective of symptoms and / or ECG abnormalities</u> Overdose with potassium containing medications

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> Uncorrected hypoglycemia (insulin) ¹ Hypersensitivity to salbutamol
USE WITH CAUTION: <ul style="list-style-type: none"> Digoxin toxicity (calcium) ²

TABLE A: CARDIAC ARREST		
CALCIUM CHLORIDE (10%)	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
ALL AGES: <ul style="list-style-type: none"> Administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by rapid push & follow with saline flush (maximum per dose = 2 grams) Repeat once if the arrest persists 		
SODIUM BICARBONATE ³	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
NOTE: USE THE 4.2% CONCENTRATION IN INFANTS & CHILDREN		
ADULTS / ADOLESCENTS (8.4%): <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by rapid push & follow with saline flush (maximum per dose = 100 mEq) Repeat once if arrest persists 		
INFANTS / CHILDREN (4.2%): <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (2 to 4 ml/kg) by rapid push & follow with saline flush (maximum per dose = 50 mEq) Repeat once if the arrest persists 		

TABLE B: RETURN OF SPONTANEOUS CIRCULATION		
CALCIUM CHLORIDE (10%)	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • If not given during arrest administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 2 grams) • Repeat as required if symptoms or ECG abnormalities persist or recur • If the time to medical care will be delayed, consider empirically repeating every 60 minutes 		
SODIUM BICARBONATE ³	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>NOTE: USE THE 4.2% CONCENTRATION IN INFANTS & CHILDREN</p> <p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> • If not given during arrest, administer 1 to 2 mEq/kg (1 to 2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 100 mEq) • Repeat as required if symptoms or ECG abnormalities persist or recur • If the time to medical care will be delayed, consider empirically repeating every 60 minutes <p>INFANTS / CHILDREN (4.2%):</p> <ul style="list-style-type: none"> • If not given during arrest, administer 1 to 2 mEq/kg (2 to 4 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 50 mEq) • Repeat as required if symptoms or ECG abnormalities persist or recur • If the time to medical care will be delayed, consider empirically repeating every 60 minutes 		
INSULIN & DEXTROSE	INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> • Administer 10 units of rapid acting insulin by slow push over 1 to 2 minutes with 50 ml (25 gm) of 50% dextrose • If the time to medical care will be delayed, consider empirically repeating every 4 hours • Monitor the BG hourly ¹ <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> • Administer 0.1 units/kg (max per dose = 10 units) of rapid acting insulin by slow push over 1 to 2 minutes & 5 ml/kg of <u>10% dextrose</u> • If the time to medical care will be delayed, consider empirically repeating every 4 hours • Monitor the BG hourly ¹ 		

TABLE C: NONARREST		
SALBUTAMOL ⁴	NEBULIZER	PCP / ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 10 mg over 10 minutes Repeat every 15 minutes as required if symptoms or ECG abnormalities persist or recur 		
SALBUTAMOL ⁴	METERED-DOSE INHALER (MDI) ⁵	PCP / ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 16 inhalations (1600 mcg) as one dose every 30 seconds Repeat one dose every 15 minutes as required if symptoms or ECG abnormalities persist or recur 		
CALCIUM CHLORIDE (10%)	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> Administer 10 to 20 mg/kg (0.1 to 0.2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 1 gram) Repeat as required if symptoms or ECG abnormalities persist or recur If the time to medical care will be delayed, consider repeating every 60 minutes 		
SODIUM BICARBONATE ³	INTRAVENOUS (INTRAOSSEOUS)	ICP / ACP
<p>NOTE: USE THE 4.2% CONCENTRATION IN INFANTS & CHILDREN</p> <p>ADULTS / ADOLESCENTS (8.4%):</p> <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (1 to 2 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 100 mEq) Repeat as required if symptoms or ECG abnormalities persist or recur If the time to medical care will be delayed, consider empirically repeating every 60 minutes <p>INFANTS / CHILDREN (4.2%):</p> <ul style="list-style-type: none"> Administer 1 to 2 mEq/kg (2 to 4 ml/kg) by slow push over 1 to 2 minutes (maximum per dose = 50 mEq) Repeat as required if symptoms or ECG abnormalities persist or recur If the time to medical care will be delayed, consider empirically repeating every 60 minutes 		
INSULIN & DEXTROSE ⁵	INTRAVENOUS (INTRAOSSEOUS)	ACP
<p>ADULTS / ADOLESCENTS:</p> <ul style="list-style-type: none"> Administer 10 units of rapid acting insulin by slow push over 1 to 2 minutes with 50 ml (25 gm) of 50% dextrose If the time to medical care will be delayed, consider empirically repeating every 4 hours Monitor the BG hourly ¹ <p>INFANTS / CHILDREN:</p> <ul style="list-style-type: none"> Administer 0.1 units/kg (max per dose = 10 units) of rapid acting insulin by slow push over 1 to 2 minutes & 5 ml/kg of 10% dextrose If the time to medical care will be delayed, consider empirically repeating every 4 hours Monitor the BG hourly ¹ 		

NOTES

1. Low blood glucose (BG) must be corrected before insulin administration. BG must be monitored hourly after insulin administration.
2. Evidence supporting the safety of calcium administration for hyperkalemia due to acute digoxin toxicity is limited.
3. Do not use sodium bicarbonate as monotherapy. It has limited effect on serum potassium, but *may* be effective in the presence of metabolic acidosis.

Sodium bicarbonate is not compatible with calcium chloride. Flush intravenous tubing well between administration of calcium and bicarbonate).
4. Salbutamol has only a minor effect on serum potassium, but may be useful if other medications are out of scope or as a temporizing measure until vascular access is established.

Administration by MDI instead of nebulizer is not well studied. Sixteen inhalations (1600 mg) *may* be roughly equivalent to 10 mg by nebulizer.

When salbutamol is not available, Combivent may be substituted on a one-to-one basis.
5. Dextrose should never be administered alone as its effects on insulin release are variable. Insulin can be given alone when the BG is greater than 15 to 20 mmol/l, but it must be monitored closely.

LINKS / REFERENCES

- A03 - High Alert Medications
- C02.1 - Advanced Cardiac Arrest (Adult)
- C02.1 - Advanced Cardiac Arrest (Pediatric)
- E11 - Hyperkalemia

APPROVED BY




EMS Medical Director



EMS Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- New

	M31- NOREPINEPHRINE (LEVOPHED)	
	Version date: 2025-11-20	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Cardiogenic shock (table A) • Post cardiac arrest shock (table B) • Septic or undifferentiated shock (table C)

WARNINGS
<p>A norepinephrine infusion must be administered by pump. Do not administer by gravity drip under any circumstances.</p> <p style="text-align: center;">Refer to H11 for information regarding concentrations & dilutions.</p>
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Uncorrected hypovolemia ¹ <p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Cardiogenic shock when significant tachycardia cannot be tolerated (e.g. myocardial ischemia) ²

TABLE A: CARDIOGENIC SHOCK	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Begin at 0.05 mcg/kg/min • Titrate in increments of 0.05 mcg/kg/min every 2 to 3 minutes as required • Usual dose range = 0.05 to 0.4 mcg/kg/min 	

TABLE B: POST CARDIAC ARREST SHOCK	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Begin at 0.05 to 0.15 mcg/kg/min • Titrate in increments of 0.05 mcg/kg/min every 2 to 3 minutes as required • Usual dose range = 0.01 to 1 mcg/kg/min 	


TABLE C: SEPTIC OR UNDIFFERENTIATED SHOCK	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Begin at 0.05 to 0.15 mcg/kg/min • Titrate in increments of 0.05 mcg/kg/min every 2 to 3 minutes as required • Usual dose range = 0.025 to 1 mcg/kg/min 	

NOTES
<ol style="list-style-type: none"> 1. Norepinephrine is the preferred agent in septic and undifferentiated shock but may worsen tissue perfusion if any volume deficit is not first corrected. 2. Norepinephrine is the initial vasopressor of choice in cardiogenic shock but may result in significant tachycardia potentially worsening myocardial ischemia. 3. The syringe / container must be clearly labelled with the final concentration of norepinephrine to avoid a potentially serious medication error.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • C02.2 - Return of Spontaneous Circulation • C07.1 - Undifferentiated Shock • C07.3 - Cardiogenic Shock • C07.4 - Septic Shock • H11 – ACP Medication Formulary

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VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Separate tables for septic / undifferentiated shock and post arrest shock • Cardiogenic shock dosing for adults only • A norepinephrine infusion can only be administered by pump

	M32- PHENYLEPHRINE (NEO-SYNEPHRINE)	
	Version date: 2025-11-20	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH-ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Push-dose pressor support (table A) • Alternative vasopressor for septic shock or undifferentiated shock (table B) • Alternative vasopressor for cardiogenic shock (table C)

WARNINGS
<p>A phenylephrine infusion must be administered by pump. Do not administer by gravity drip under any circumstances.</p> <p style="text-align: center;">Refer to H11 for information regarding concentrations & dilutions.</p>
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> • Uncorrected hypovolemia ¹ <p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> • Hypersensitivity to phenylephrine



TABLE A: PUSH-DOSE PRESSOR SUPPORT ²	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • 50 to 100 mcg • Slow push over 1 to 2 minutes • Repeat every 3 to 5 minutes as required 	

TABLE B: SEPTIC SHOCK / UNDIFFERENTIATED SHOCK ¹	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ALL AGES:</p> <ul style="list-style-type: none"> • Begin at 0.5 mcg/kg/min • Titrate in increments of 0.5 mcg/kg/min every 2 to 3 minutes as required • Usual dose range = 0.25 to 5 mcg/kg/min 	

TABLE C: CARADIOGENIC SHOCK	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> • Begin at 0.5 mcg/kg/min • Titrate in increments of 0.5 mcg/kg/min every 2 to 3 minutes as required • Usual dose range = 0.1 to 10 mcg/kg/min 	


NOTES
<ol style="list-style-type: none"> 1. In septic or undifferentiated shock, phenylephrine may worsen tissue perfusion if any volume deficit is not first corrected by “squeezing” the undifferentiated circulation. 2. The safest way to administer a vasopressor is by continuous infusion, but establishing an infusion takes time. A critically low mean arterial pressure (MAP) may be the final step before cardiovascular collapse and cardiac arrest, so rapid intervention is required. Bolus administration of phenylephrine (push-dose pressor support) has been shown to be a safe and effective temporizing measure for immediate BP control in adults with shock (its safety in infants and children is uncertain). If ongoing blood pressure support is required, transition to a continuous infusion as soon as possible. 3. The syringe / bag must be clearly labelled with the final concentration of phenylephrine to avoid medication error.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • C07.1 - Undifferentiated Shock • C07.3 - Cardiogenic Shock • C07.4 - Septic Shock • H11 – ACP Medication Formulary

APPROVED BY	
	
EMS Medical Director	EMS Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)

- Cardiogenic shock dosing for adults only
- Warning that phenylephrine infusion can only be administered by pump

	M33 – DIPHENHYDRAMINE (<i>BENADRYL</i>)	
	Version date: 2025-12-19	Effective date: 2026-01-06 (07:00)

INDICATIONS

- Vancoymycin infusion reaction (Community Paramedic Program)
- Contrast induced pruritis (Adult Transport Team)

WARNINGS

CONTRAINDICATIONS:

- Hypersensitivity to diphenhydramine
- Angioedema or anaphylaxis ¹

DOSING

INTRAVENOUS (INTRAOSSEOUS)

ADULTS / ADOLESCENTS:

- Initial dose = 50 mg by slow push over 2 minutes
- Repeat every 4 to 6 hours as required
- Administer by slow push over 2 minutes

INFANTS / CHILDREN:



- Initial dose = 1 mg/kg (maximum = 25 mg per dose)
- Repeat every 4 to 6 hours as required
- Administer by slow push over 2 minutes

NOTES


1. There is little evidence to support the use of either H1 or H2 histamine blocking agents and they may mask a biphasic reaction. Antihistamines should never be administered as sole therapy for anaphylaxis.

LINKS

- G02 - Vancomycin Infusion Reaction

APPROVED BY	
	
Provincial Medical Director	Associate Provincial Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">Limited to CPP and ATT (not longer carried by EMS/PT)

	M34 - HALOPERIDOL (HALDOL)	
	Version date: 2025-12-19	Effective date: 2026-01-06 (07:00)

INDICATIONS

- Acute agitation or combative behavior where the safety of the patient, health care providers and the public at large is or may be at risk

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Known or suspected neuroleptic malignant syndrome
- Uncorrected hypotension / hypoperfusion / shock
- Known prolonged QT
- Agitation from a hypoglycemia or hypoxemia ¹

USE WITH CAUTION:

- Postictal delirium
- Myasthenia gravis

ADMINISTRATION

INTRAMUSCULAR

ICP / ACP

ADULTS & ADOLESCENTS:

- **Maximum per dose = 10 mg**
- Initial dose = 0.5 mg/kg
- Repeat 0.5 mg/kg once in 15 to 30 minutes as required
- Consider reducing the dose by up to 50 percent for patients over 75 years of age ²

INTRAVENOUS (INTRAOSSEOUS)

ICP / ACP

ADULTS & ADOLESCENTS:

- **Maximum per dose = 10 mg**
- Initial dose = 0.5 mg/kg
- Repeat 0.5 mg/kg once in 10 to 15 minutes as required to achieve adequate control
- Administer by slow push over 2 to 5 minutes
- Consider reducing the dose by up to 50 percent for patients over 75 years of age ²

NOTES

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|---|
| <ol style="list-style-type: none"> 1. Always treat correctable underlying causes of agitation or combative behavior, such as hypoglycemia or hypoxemia, before administering sedating medications. 2. Older patients may be more prone to excess sedation and extrapyramidal side effects (EPSE). Use lower single and cumulative doses, and administer at slower rates. 3. Haloperidol reduces the effect of dopamine in the brain and may cause EPSE, such as acute dystonias. These are more common in younger and male patients, , especially with multiple doses. Benztropine may be required to reverse these. |
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LINKS


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| <ul style="list-style-type: none"> • E02 - Agitation |
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APPROVED BY	
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Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
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| <ul style="list-style-type: none"> • Revised dosing (adult & adolescent doses combined to eliminate duplication & redundancy) • Cumulative maximum dose reduced to 20 mg (due to stocking limitations) |
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	M37.1- ACETYLSALICYLIC ACID (ASA)	
	Version date: 2025-02-15	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Known or suspected acute coronary syndrome (ACS)

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to ASA
- Known ASA-induced asthma
- Active major bleeding

ADMINISTRATION

ORAL

EMR / PCP / ICP / ACP

ADULTS:



- Administer 160 mg once
- Advise the patient to chew and dissolve the medication

NOTES


1. Paramedics should administer ASA even if the patient is already on daily ASA or has taken as advised by the 9-1-1-call taker.

LINKS

- E04 - Acute Coronary Syndrome & STEMI & NSTEMI-ACS

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope

	M37.2 - TICAGRELOR (<i>BRILINTA</i>)	
	Version date: 2025-02-15	Effective date: 2025-04-30 (07:00)

INDICATIONS

- Known or suspected ST elevation myocardial infarction (STEMI) if patient is going directly to primary coronary intervention (PCI)

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to ticagrelor
- Patient may be candidate for fibrinolysis
- Active major bleeding

ADMINISTRATION

This requires authorization from the Code-STEMI physician / VECTRS emergency physician (or designate)

ORAL

PCP / ICP / ACP



ADULTS:

- Administer 2 tablets (180 mg) as directed by the Code-STEMI physician


NOTES

LINKS

- E04 - Acute Coronary Syndrome & STEMI & NSTEMI-ACS

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none">• Addition of advanced work scope

	M38 - KETOROLAC (TORADOL)	
	Version date: 2025-07-07	Effective date: 2025-07-15 (07:00)

INDICATIONS
<ul style="list-style-type: none"> Moderate to severe pain

WARNINGS
<p>ABSOLUTE CONTRAINDICATIONS:</p> <ul style="list-style-type: none"> Hypersensitivity to ketorolac History of aspirin-induced asthma or bronchospasm Active bleeding Intracranial injury Acute coronary syndrome (ACS) Known impaired renal function, end-stage renal disease, or dialysis - dependent
<p>USE WITH CAUTION:</p> <ul style="list-style-type: none"> Pregnancy

ADMINISTRATION	
INTRAVENOUS (INTRAOSSEOUS)	PCP / ICP / ACP
<p>NOTE:</p> <ul style="list-style-type: none"> Administer by slow push over 60 seconds Repeat every 4 to 6 hours as required <p>ADULTS = 30 mg CHILDREN & ADOLESCENTS = 0.5 mg/kg (max / dose = 30 mg) INFANTS = 0.25 to 0.5 mg / kg (max / dose = 15 mg)</p>	
INTRAMUSCULAR	PCP / ICP / ACP
<p>NOTE:</p> <ul style="list-style-type: none"> Repeat every 4 to 6 hours as required <p>ADULTS = 30 mg CHILDREN & ADOLESCENTS = 0.5 mg/kg (max / dose = 30 mg) INFANTS (6 MONTHS & OLDER) = 0.5 mg/kg (max / dose = 15 mg) ¹</p>	

NOTES

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| 1. There is limited data to support intramuscular administration in infants, especially under 6 months of age. |
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LINKS


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| <ul style="list-style-type: none"> None |
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APPROVED BY	
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Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
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|--|
| <ul style="list-style-type: none"> Replacement of term “known renal failure” with “known renal impairment”, and moved into absolute contraindications section Up date of infant dosing Addition of IV (IO) dosing for infants and IM dosing for infants over 6 months |
|--|

	M39 - ATROPINE	
	Version date: 2025-02-16	Effective date: 2025-04-01 (07:00)

INDICATIONS

- A palpable pulse with a sustained heart rate (HR) less than the age-appropriate physiological minimum, causing any of the following symptoms / signs of cardiopulmonary compromise:
 - acutely altered level of consciousness
 - hypotension / perfusion
 - ischemic chest pain, or
 - acute heart failure / pulmonary edema

WARNINGS

ABSOLUTE CONTRAINDICATIONS:

- Hypersensitivity to atropine

USE WITH CAUTION:

- Myocardial ischemia
- Cardiac transplant ²
- Myasthenia gravis

DOSING

INTRAVENOUS / INTRAOSSEOUS (ICP & ABOVE):

- 10 years & older:
 - 1 mg
 - Administer by rapid push & flush
 - Repeat every 3 to 5 minutes as required
 - Total maximum dose = 3 mg
- Up to 10 years:
 - 0.02 mg/kg (single dose maximum = 0.5 mg)
 - Administer by rapid push & flush
 - Repeat every 3 to 5 minutes as required
 - Total maximum dose = 1 mg


NOTES

1. Atropine may not be effective in type II second-degree or third-degree AV blocks, but can be safely trialed. Be prepared to proceed to transcutaneous pacing (TCP).
2. Atropine is usually ineffective in heart transplant patients due to lack of cholinergic innervation, although reinnervation may occur over years. If required, atropine may be used cautiously but observe for paradoxical slowing of the heart rate and high-degree AV block.

LINKS
<ul style="list-style-type: none"> • C05 - Bradycardia

APPROVED BY	
	
Medical Director - Provincial EMS/PT	Associate Medical Director - Provincial EMS/PT

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Addition of advanced work scope • Revised contraindications / cautions


	M40 - VERAPAMIL (ISOPTIN)	
	Version date: 2025-11-17	EFFECTIVE DATE: 2026-01-06 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> • Rate control in atrial fibrillation or flutter as an alternative to beta blockade (table A) • Supraventricular re-entrant tachycardia (e.g. PSVT) where adenosine has been ineffective or the rhythm has recurred after adenosine administration (table B)

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> • Hypersensitivity to verapamil • Unstable hemodynamics • Wide complex tachycardia • Known or suspected preexcitation (e.g. Wolff-Parkinson-White syndrome) • Known or suspected sick sinus syndrome
USE WITH CAUTION: <ul style="list-style-type: none"> • Prior administration of beta blocker or amiodarone ¹ • Cirrhosis ²

TABLE A: ATRIAL FIBRILLATION / FLUTTER	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
ADULTS: <ul style="list-style-type: none"> • 5 to 10 mg • Administer by slow push over 2 minutes • If there is an inadequate response after 15 to 30 minutes, repeat 5 to 10 mg once • If there is an adequate response after one or two doses, begin a continuous infusion 	
INTRAVENOUS (INTRAOSSEOUS) INFUSION	ACP
ADULTS: <ul style="list-style-type: none"> • Begin at 5 mg/hr • Titrate in increments of 5 mg/hr every 15 minutes as required • Maximum infusion rate = 20 mg/hr 	

TABLE B: SUPRAVENTRICULAR TACHYCARDIA	
INTRAVENOUS (INTRAOSSEOUS) INJECTION	ACP
<p>ADULTS:</p> <ul style="list-style-type: none"> 5 to 10 mg Administer by slow push over 2 minutes If there is an inadequate response after 15 to 30 minutes, repeat 5 to 10 mg once 	
NOTES	
<ol style="list-style-type: none"> 1. The effects of verapamil and other atrioventricular nodal blocking agents (e.g. beta blockers. amiodarone) can be cumulative leading to severe hypotension or heart block. Administer with caution. 2. Reduce the dose by 50 percent in patients with cirrhosis or severe hepatic impairment. 	
LINKS	
<ul style="list-style-type: none"> A03 - High Alert Medications C06 - Tachycardia 	
APPROVED BY	
	
EMS Medical Director	EMS Associate Medical Director
VERSION CHANGES (refer to X08 for change tracking)	
<ul style="list-style-type: none"> New (replaces M10 - Diltiazem) 	

	M43 - ENOXAPARIN (LOVENOX)	
	Version date: 2025-02-16	Effective date: 2025-04-30 (07:00)
ERS HIGH ALERT MEDICATION (A03)		

INDICATIONS
<ul style="list-style-type: none"> Known or suspected ST elevation myocardial infarction (STEMI) if the patient is going directly to primary coronary intervention (PCI)

WARNINGS
ABSOLUTE CONTRAINDICATIONS: <ul style="list-style-type: none"> Hypersensitivity to enoxaparin Patient may be candidate for fibrinolysis Active major bleeding Heparin-induced thrombocytopenia (HIT) within the past 100 days
USE WITH CAUTION: <ul style="list-style-type: none"> Current anticoagulation use Renal impairment Heparin-induced thrombocytopenia greater than 100 days ago

ADMINISTRATION	
This requires authorization from the Code-STEMI physician / VECTRS emergency physician (or designate)	
INTRA VENOUS (INTRA OSSEOUS)	PCP / ICP / ACP
ADULTS UNDER 75 YEARS: <ul style="list-style-type: none"> Administer 0.5 mg/kg by slow push over 60 second Maximum per dose = 50 mg 	
SUBCUTANEOUS	PCP / ICP / ACP
ADULTS UNDER 75 YEARS: <ul style="list-style-type: none"> Administer 1 mg/kg Maximum per dose = 100 mg ADULTS OVER 75 YEARS: <ul style="list-style-type: none"> Administer 0.75 mg/kg Maximum per dose = 75 mg 	

NOTES
1. There is an increased risk of intracranial bleeding in patients over 75 years of age.

LINKS
<ul style="list-style-type: none"> • A03 - High Alert Medications • E04 - Acute Coronary Syndrome & STEMI & NSTEMI-ACS

APPROVED BY	
	
Provincial Medical Director	Provincial Associate Medical Director

VERSION CHANGES (refer to X08 for change tracking)
<ul style="list-style-type: none"> • Addition of advanced work scope • Revised contraindications / cautions