MedicNEWS

Insight for paramedics in Eastern Ontario

June 2026

Counselling Patients After a Seizure

Practical guidance to support safety, medication adherence, and follow-up.

Pediatric Dosing, Reimagined in the App

A new weight-based dosing chart is coming to the Clinical Guide app in June.

Quality Improvement in Action

The Pediatric Analgesia Feasibility Project is now live across 4 participating services.

The 90-Day Patient Care Standard & You

Understanding RPPEO's new approach to clinical recency and what it means for you.

Learning from Near Misses

How small steps can prevent big consequences.

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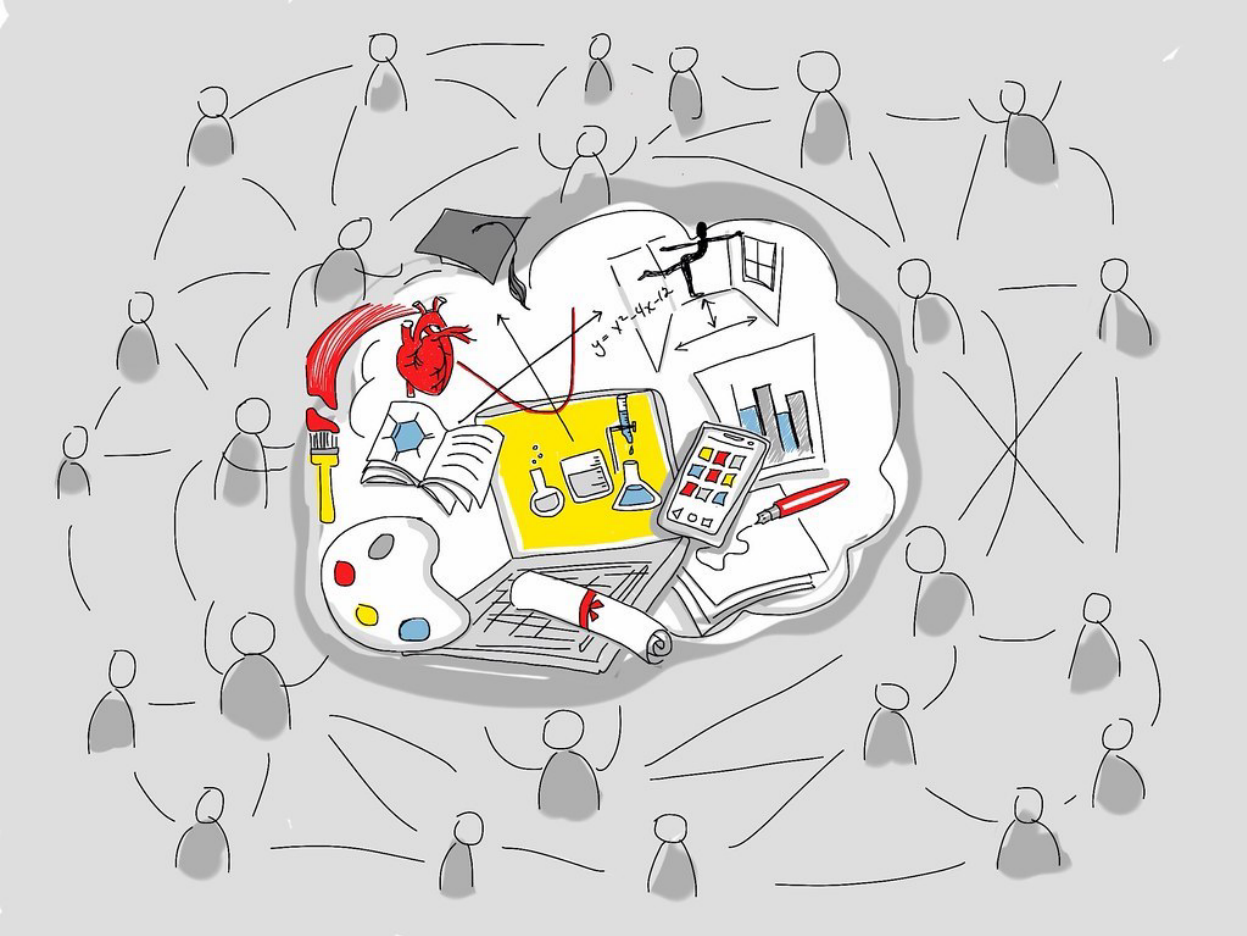
- **Pediatric dosing, reimagined in the app -** A new Pediatric Dosing Chart is coming to the Ontario Paramedic Clinical Guide app, bringing weight-based medication dosing, equipment guidance, and key reference information into one place to support safer, faster decision-making in pediatric calls.
- **Feature: Counselling patients after a seizure** - When patients are not transported, paramedics may be the only healthcare providers involved in their care. This article outlines how to provide clear, practical counselling to support safety, medication adherence, and follow-up.
- **ICYMI: Clinical bulletin on antiemetic use** - A recent RPPEO bulletin highlights the risks and trade-offs of common antiemetics in older adults, reinforcing the need for patient-specific decision-making rather than routine medication choice.
- **OMC update: what you hear when you call** - A new recorded message confirms that your call has been received and is being connected to a physician, helping reduce unnecessary redials and improving clarity during time-sensitive situations.
- **The 90-day patient care standard & you** - RPPEO introduces a more structured approach to monitoring clinical recency, clarifying expectations for maintaining certification and outlining what happens if paramedics exceed the 90-day threshold without patient contact.
- **Quality improvement in action: pediatric analgesia** - The Pediatric Analgesia Feasibility Project is now live across 4 participating services, testing the safe use of oral acetaminophen and ibuprofen in children and gathering real-world data to inform future practice.
- **From evidence to practice: CPEP update** - The Clinical Practice Evidence Panel continues to address key gaps in care, including pediatric analgesia, antipyresis, and the approach to anxiety and agitation, helping shape future provincial medical directives.
- **Paramedicine research: biomedical statistics** - Share your perspective in a short survey exploring paramedics' comfort with biomedical statistics, helping inform future education and support.

Continuing Education



WE'RE HIRING!

RPPEO Education Facilitators

POSTED: APRIL 21, 2026

The Regional Paramedic Program for Eastern Ontario (RPPEO) is seeking outstanding Primary and Advanced Care Paramedics to join our team as Education Facilitators.

POSITION SUMMARY:
As an Education Facilitator, you will facilitate a variety of educational events, including Spring and Fall Core Continuing Medical Education (CME) and Elective CME opportunities such as Airway Day and Trauma Day. Additional opportunities are available to participate in Entry to Practice Certification evaluations and Return to Clinical Practice cases.

QUALIFICATIONS:

- Professional paramedic certified with RPPEO
- Minimum of three (3) years of paramedic experience
- Strong interpersonal, organizational, critical thinking, decision making, and conflict resolution skills
- Ability to use professional judgement
- Excellent written and verbal communication skills
- Proven ability to work in a team and collaborate with others
- Effective time management skills
- Ability and willingness to travel throughout Eastern Ontario
- Additional education and/or teaching experience is considered an asset (e.g., adult education, preceptorship, bachelor's or master's degree, etc.).

HOW TO APPLY:

If you are interested in joining our team, please submit your resume and cover letter to **info@rppeo.ca** before **Friday, May 29, 2026, at 23:59h.**

Only candidates selected for an interview will be contacted.

Learn more about RPPEO and our role in paramedic education and certification:

What We Do

Medical **Direction**

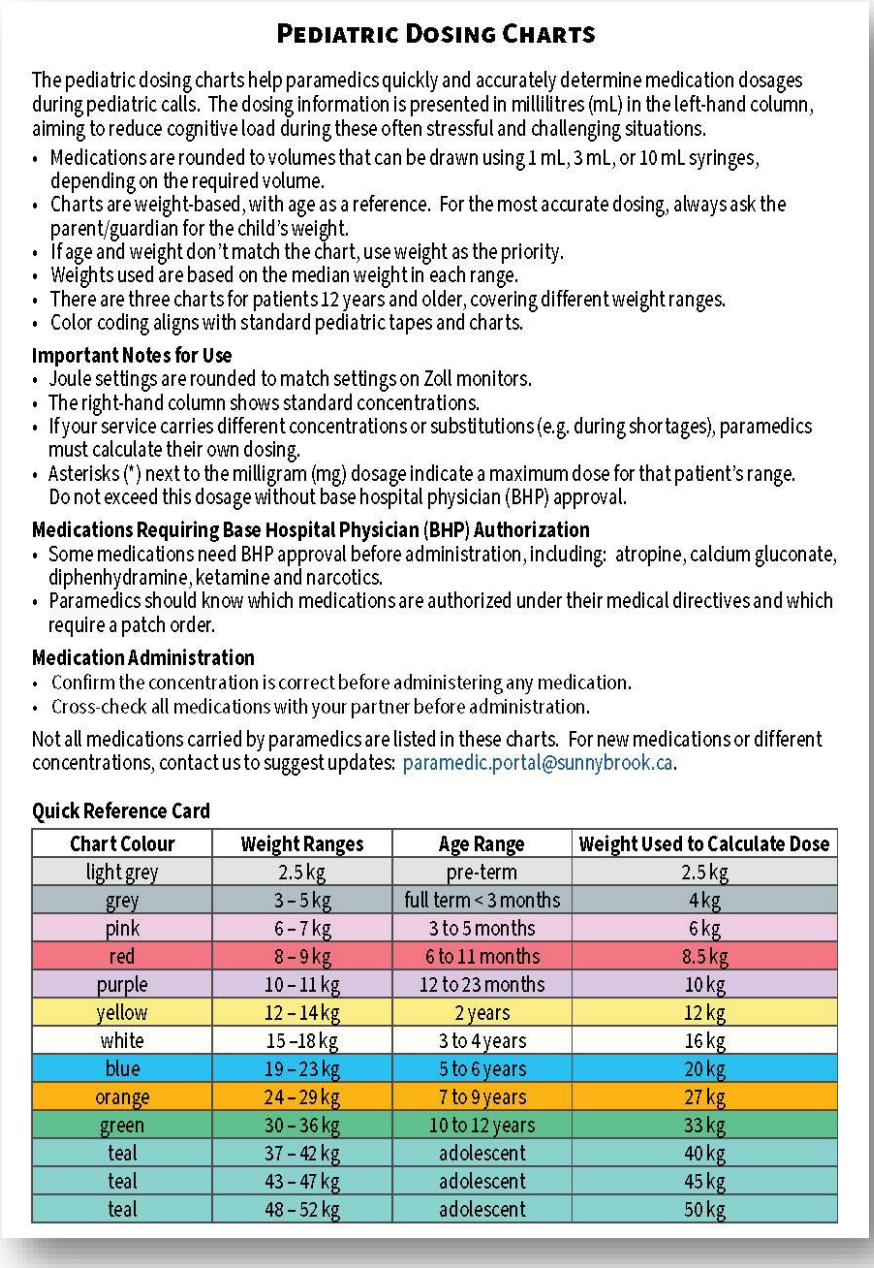
Pediatric Dosing, Reimagined **in the App**

A New Pediatric Dosing Chart is Coming to the Ontario Paramedic Clinical Guide App

Pediatric calls are among the most challenging situations paramedics face. They are inherently higher risk, relatively infrequent, and often require rapid decisions under pressure while managing weight-based dosing and age-appropriate equipment.

To support paramedics in these moments, a new Pediatric Dosing Chart will be available in the Ontario Paramedic Clinical Guide app beginning in June 2026.

This chart brings together key pediatric reference information in one place, designed specifically for out-of-hospital emergency care. Its purpose is straightforward: help paramedics make safe, efficient decisions when time and clarity matter most.



Pediatric Dosing Charts

The pediatric dosing charts help paramedics quickly and accurately determine medication dosages during pediatric calls. The dosing information is presented in millilitres (mL) in the left-hand column, aiming to reduce cognitive load during these often stressful and challenging situations.

- Medications are rounded to volumes that can be drawn using 1 mL, 3 mL, or 10 mL syringes, depending on the required volume.
- Charts are weight-based, with age as a reference. For the most accurate dosing, always ask the parent/guardian for the child's weight.
- If age and weight don't match the chart, use weight as the priority.
- Weights used are based on the median weight in each range.
- There are three charts for patients 12 years and older, covering different weight ranges.
- Color coding aligns with standard pediatric tapes and charts.

Important Notes for Use

- Joule settings are rounded to match settings on Zoll monitors.
- The right-hand column shows standard concentrations.
- If your service carries different concentrations or substitutions (e.g. during shortages), paramedics must calculate their own dosing.
- Asterisks (*) next to the milligram (mg) dosage indicate a maximum dose for that patient's range. Do not exceed this dosage without base hospital physician (BHP) approval.

Medications Requiring Base Hospital Physician (BHP) Authorization

- Some medications need BHP approval before administration, including: atropine, calcium gluconate, diphenhydramine, ketamine and narcotics.
- Paramedics should know which medications are authorized under their medical directives and which require a patch order.

Medication Administration

- Confirm the concentration is correct before administering any medication.
- Cross-check all medications with your partner before administration.

Not all medications carried by paramedics are listed in these charts. For new medications or different concentrations, contact us to suggest updates: paramedic.portal@sunnybrook.ca.

Quick Reference Card

Chart Colour	Weight Ranges	Age Range	Weight Used to Calculate Dose
light grey	2.5 kg	pre-term	2.5 kg
grey	3 – 5 kg	full term < 3 months	4 kg
pink	6 – 7 kg	3 to 5 months	6 kg
red	8 – 9 kg	6 to 11 months	8.5 kg
purple	10 – 11 kg	12 to 23 months	10 kg
yellow	12 – 14 kg	2 years	12 kg
white	15 –18 kg	3 to 4 years	16 kg
blue	19 – 23 kg	5 to 6 years	20 kg
orange	24 – 29 kg	7 to 9 years	27 kg
green	30 – 36 kg	10 to 12 years	33 kg
teal	37 – 42 kg	adolescent	40 kg
teal	43 – 47 kg	adolescent	45 kg
teal	48 – 52 kg	adolescent	50 kg

A new Pediatric Dosing Chart is coming to the App.

What the Pediatric Dosing Chart is

The Pediatric Dosing Chart is a weight-based clinical reference tool that organizes commonly needed pediatric information into clear, visual categories.

It is designed to support care during real calls by reducing the number of steps required to arrive at safe medication doses and equipment choices.

The chart includes:

- Pre-calculated medication doses presented in millilitres
- Weight-based groupings aligned with familiar colour systems
- Normal pediatric vital sign ranges
- Defibrillation and cardioversion energy settings

- Equipment sizing guidance, including airway and resuscitation tools

The goal is not to replace clinical judgement. It is to reduce cognitive load so attention can stay on assessment, communication, and patient care.

Designed for Ontario paramedic practice

This chart has been built with Ontario paramedicine in mind.

Unlike many pediatric tools developed for hospital settings, this chart reflects the realities of prehospital care and aligns with the ALS Patient Care Standards and Ontario medical directives.

It is structured to match:

- Medications carried by Ontario paramedic services
- Dosing approaches used in the ALS PCS
- The need for rapid decision-making in a dynamic, out-of-hospital environment

This avoids the need to adapt generic references in high-stakes situations.

Why this kind of tool matters

Pediatric medication dosing involves multiple steps that can introduce risk:

- Estimating or confirming weight
- Calculating a weight-based dose
- Converting to the correct volume
- Selecting appropriate equipment

Even experienced paramedics may encounter these situations infrequently. Under stress, the risk of error increases.

This work builds on the efforts of the team at Sunnybrook Centre for Prehospital Medicine, who developed the Pediatric Dosing Charts to support safe, practical medication dosing in the field. Their work reflects a strong focus on usability, safety, and real-world paramedic practice, and now forms part of a broader provincial approach through the Clinical Guide.

Tools like this one aim to reduce those layers of calculation and bring the information together in a format that is quick to read and easy to apply.

The intent is not to simplify the work so much as it is to support it. When cognitive load is reduced, it creates space to focus on the patient.

What to expect

The Pediatric Dosing Chart will be integrated into the clinical app as a reference tool available during calls.

This means:

- Quick access to weight-based dosing guidance
- Key pediatric reference information in one place
- A tool designed to be used alongside existing clinical resources

As with any clinical reference, it should be used alongside your training, judgement, and the ALS PCS.

Your feedback matters

Frontline experience is essential to making tools like this usable in real practice.

If you have comments or suggestions, please send them to:

education@RPPEO.ca

Weight: 19 – 23 kg			Age range: 5 to 6 years
Normal vital sign range	HR: 80 – 120	RR: 18 – 25	BP: 89 – 112 | 46 – 72
Cardioversion	30 J	50 J	50 J
Defibrillation	50 J	85 J	85 J
ETT	5	Suction Catheter	
Laryngoscope Blade	2	ETT	10 Fr
i-gel	2	i-gel	10 Fr

Volume mL	Medication	Total Dose	Dose	Drug Supplied Concentration
CARDIAC/RHYTHM				
0.67 mL	Adenosine **IV fast push** 1st dose	2 mg	0.1 mg/kg	6 mg/2 mL
1.3 mL	2nd dose	4 mg	0.2 mg/kg	6 mg/2 mL
2 mL	Amiodarone **IV**	100 mg	5 mg/kg	150 mg/3 mL
4 mL	Atropine **IV** bradycardia, toxins	0.4 mg	0.02 mg/kg	1 mg/10 mL
2 mL		0.4 mg	0.02 mg/kg	0.2 mg/mL
1 mL		0.4 mg	0.02 mg/kg	0.4 mg/mL
0.67 mL		0.4 mg	0.02 mg/kg	0.6 mg/mL
10 mL	Calcium Gluconate 10% **IV**	1,000 mg	1,000 mg *	1,000 mg/10 mL
2 mL	EPINEPHrine **IV/IO** 1:10,000	0.2 mg	0.01 mg/kg	1 mg/10 mL
2 mL	EPINEPHrine **ETT** 1:1,000	2 mg	0.1 mg/kg	1 mg/mL
SYMPTOM RELIEF				
40 mL	Dextrose 10% **IV**	4 g	0.2 g/kg	100 mg/mL
20 mL	Dextrose 50% **IV**	10 g	0.5 g/kg	500 mg/mL
0.8 mL	Dexamethasone **PO/IM/IV**	8 mg	8 mg *	10 mg/mL
0.4 mL	DiphenhydrAMINE **IV/IM**	20 mg	1 mg/kg	50 mg/mL
0.2 mL	EPINEPHrine **IM** 1:1,000	0.2 mg	0.01 mg/kg	1 mg/mL
400 mL	Normal saline bolus **IV**	400 mL	20 mL/kg	
200 mL	Normal saline ROSC **IV**	200 mL	10 mL/kg	
PAIN AND SEDATION				
0.4 mL	FentaNYL **IV/IN**	20 mcg	1 mcg/kg	100 mcg/2 mL
0.1 mL	Ketamine **IV**	5 mg	0.25 mg/kg	100 mg/2 mL
0.4 mL	Ketamine **IN**	20 mg	1 mg/kg	100 mg/2 mL
0.8 mL	Hydrocortisone **IM/IV**	40 mg	2 mg/kg	100 mg/2 mL
0.32 mL		40 mg	2 mg/kg	250 mg/2 mL
0.4 mL	Midazolam seizure **IV/IO**	2 mg	0.1 mg/kg	10 mg/2 mL
0.8 mL	Midazolam seizure **IM/IN/Buccal**	4 mg	0.2 mg/kg	10 mg/2 mL
0.1 – 0.2 mL	Morphine analgesia **IV/SC**	1 – 2 mg	0.05 – 0.1 mg/kg	10 mg/mL
0.4 mL	Naloxone **IV/IM**	0.4 mg	0.4 mg *	2 mg/2 mL
Weight: 19 – 23 kg				**Age range: 5 to 6 years**

* maximum dosage

Colour-coded by age group, the charts provide dosing guidance on many of the medications indicated for children.

The bottom line

Pediatric calls demand precision, clarity, and calm under pressure.

This chart is designed to support you in those moments by bringing key information together in a format built for paramedic practice.

It is one more way to make the right decision easier when it matters most.

ICYMI: Clinical Bulletin on **Anti-emetic Use**

In April, RPPEO released a Clinical Bulletin on Antiemetic Use in People 65 and Older, highlighting how medication choice in this population requires careful clinical judgement rather than a one-size-fits-all approach.

The bulletin outlines the tradeoffs between commonly used agents such as ondansetron and dimenhyDRINATE, emphasizing risks like sedation, delirium, falls, and anticholinergic burden with dimenhyDRINATE, and QT prolongation and cardiac considerations with ondansetron. It reinforces key practices including using the lowest effective dose, reassessing after administration, and documenting clearly, while also clarifying that *age alone does not require patching to OMC*.

Dr. Michael Austin, Regional Medical Director, brought this bulletin forward to support paramedics in making more nuanced, patient-specific decisions in a high-frequency clinical scenario, where small differences in approach can have a meaningful impact on safety and outcomes for older adults.

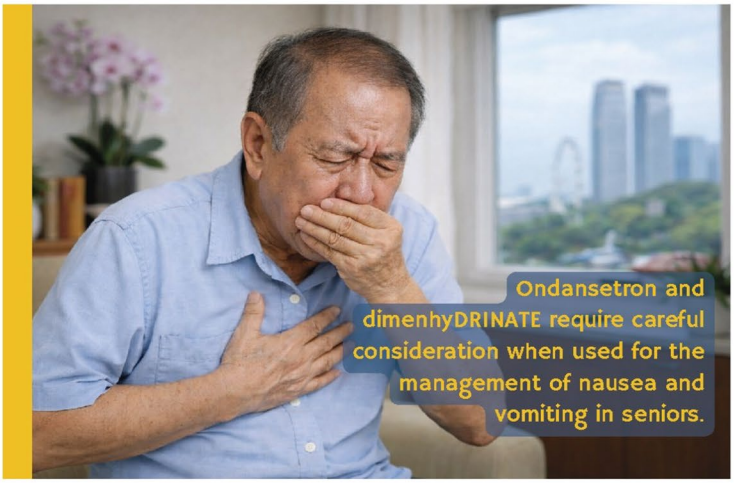
APRIL 2026

REGIONAL PARAMEDIC PROGRAM FOR EASTERN ONTARIO

Clinical Bulletin

RPPEO Guidance on Anti-Emetic Use in People 65 Years and Older

Dr. Michael Austin, Regional Medical Director



Key Points

When selecting an antiemetic for adults ≥ 65 years, a patch is not required based solely on patient age.

Online **M**edical **C**onsultation is available at any point to support your decision-making, particularly when the risks and benefits are unclear. In adults ≥ 65 years, use the lowest effective antiemetic dose. Ondansetron is generally preferred in older adults due to a lower risk of sedation and anticholinergic effects. DimenhyDRINATE (Gravol®) may be appropriate in selected cases.

This Clinical Bulletin is intended to support clinical decision-making when administering antiemetics to older adults. It summarizes factors that may influence medication choice and dosing, with a focus on safety, reassessment, and clear documentation.

VOLUME 3
ISSUE 1

Highlights

The ALS PCS indicates that dimenhyDRINATE (Gravol®) may be considered for patients aged 65 years and older when ondansetron is unavailable.

For the purposes of clinical decision making, "unavailable" should be understood to include situations where ondansetron should not reasonably be used for the patient in front of you. This may include circumstances where patient factors suggest that another option is safer or more appropriate.

Paramedics should continue to apply clinical judgement, including consideration of medication history, cardiac risk, anticholinergic burden, and the likely cause of nausea. When uncertainty exists, Online Medical Consultation (OMC) is available for support.

Visit RPPEO.ca for more clinical information.

APRIL 2026

REGIONAL PARAMEDIC PROGRAM FOR EASTERN ONTARIO VOLUME 3.1

DimenhyDRINATE (Gravol®)

DimenhyDRINATE (Gravol®) is an antihistamine with anticholinergic and sedating effects. In adults ≥ 65 years, these effects are more pronounced. Risks include:

- increased sedation
- worsening confusion or delirium
- impaired balance and falls
- urinary retention
- interaction with other anticholinergic or sedating medications
- slowed reaction time and impaired mobility

Older adults often have a higher anticholinergic burden due to common medications (e.g., antidepressants, antispasmodics, sleep aids). These cumulative effects increase the likelihood of adverse outcomes.

Avoid co-administration of diphenhydrAMINE (Benadryl®) with dimenhyDRINATE (Gravol®) due to additive anticholinergic effects and elevation of risk when there is no increased clinical benefit.

CLEAR DOCUMENTATION ASSISTS PATIENT SAFETY AND QUALITY PROCESSES AND SUPPORTS SAFE FOLLOW-UP CARE.

Ondansetron

Ondansetron (Zofran®) is a selective serotonin ($5\text{-}HT_3$) receptor antagonist antiemetic with less sedating and fewer anticholinergic effects than dimenhyDRINATE (Gravol®). However, risks remain including:

- QT prolongation, especially in patients with known cardiac disease or electrolyte disturbances
- potential for dysrhythmias in susceptible patients
- headaches
- constipation
- reduced effectiveness for vestibular-origin nausea
- potential drug interactions (e.g., SSRIs, other QT-prolonging medications)

If considering ondansetron, thoroughly assess the patient's history to identify known prolonged QT syndrome or interacting medications. Simple presence of QT prolongation does NOT preclude ondansetron use.

Clinical Considerations

Older adults vary significantly in their physiological reserve. When choosing an antiemetic:

- consider the cause of nausea (see chart on page 3)
- assess & record the patient's cognitive status, frailty, hydration, and fall risk
- obtain & record a detailed medication history, focusing on sedatives, sleep aids, anticholinergics, and QT-prolonging drugs
- consider cardiac history and available vital signs
- evaluate the risk of sedation and delirium (dimenhyDRINATE) versus the risk of QT prolongation and arrythmias (ondansetron)
- In adults over 65, the delirium/sedation risk from dimenhyDRINATE may be more clinically significant than the relatively low risk of QT-prolongation from oral ondansetron

Use clinical judgment to tailor treatment to the individual's risk profile and symptom severity.

STARTING DOSE FOR PATIENTS ≥ 65 YEARS

CHOOSE THE LOWEST EFFECTIVE DOSE:

DIMENHYDRINATE (GRAVOL®)
25 MG IV/IM. DILUTE IV FORMULATION 1:9 PRIOR TO ADMINISTRATION.
ONDANSETRON (ZOFRAN®)
4 MG PO/IV/IM PER DIRECTIVE

IF SYMPTOMS PERSIST AFTER 30 MINUTES, REVIEW THE RISKS AGAIN BEFORE SWITCHING BETWEEN MEDICATIONS.

RPPEO CLINICAL BULLETIN 3.1: GUIDANCE ON ANTI-EMETIC USE IN PEOPLE 65 YEARS AND OLDER

COMMON CAUSES OF NAUSEA/VOMITING AND CONSIDERATIONS

Cause Category	Examples	Considerations for Paramedics
Vestibular causes	Motion sickness, vertigo	DimenhyDRINATE (Gravol®) is typically more effective than ondansetron.
Gastrointestinal irritation	Upset stomach due to food ingestion	Either medication may help; consider age, dehydration, and onset.
Medication-related causes	SSRIs	Ondansetron is often preferred; check QT-risk and interactions.
Medication-related causes	Chemotherapy, alcohol, cannabis, illicit drugs	Review drug interactions; ondansetron commonly selected.
Pregnancy-related nausea	Hyperemesis during pregnancy	DimenhyDRINATE is first line pharmacotherapy for nausea/emesis in pregnancy owing to its long track record of safety for mom and baby. Ondansetron can be considered when dimenhydrinate has not been effective.
Neurological causes (high ICP concern)	Head injury with increased ICP risk	Avoid dimenhyDRINATE (Gravol®) due to sedation; ondansetron preferred.
Head trauma (general)	Lower-risk traumatic head injury	Ondansetron generally preferred due to lower sedation burden.
High anticholinergic burden	Taking diphenhydrAMINE (Benadryl®), anticholinergics, TCAs	Avoid dimenhyDRINATE (Gravol®) due to additive sedation and delirium risk.
Age-related vulnerability	Elderly adults	Increased risk of delirium, falls, confusion; ondansetron may be safer.

OMC Update: What You Will Hear When You Call

Starting May 20, paramedics calling Online Medical Consultation (OMC) hear a brief recorded message before being connected to a physician.

The message is simple:

"You have reached the OMC program. Your call is being connected."

This message confirms that your call has been received and that a physician is being added to the line.

Why this change was made

This update addresses a practical issue seen in the field.

When there is even a short delay, some paramedics hang up and try calling again. The OMC system already routes calls to the next available physician, so redialling is not needed and can actually slow things down.

The recorded message removes that uncertainty. It signals that the system is working and that support is on the way.

More than 97 percent of calls are answered within 7 seconds. The expectation remains clear: stay on the line.

What you need to know

- Hearing the message means your call is progressing
- There is no need to hang up and redial
- Stay on the line until the physician joins

Paramedics are also reminded that if a patch failure does occur, it should be reported through a Patient Safety Incident Report. This helps RPPEO and OMC monitor reliability and improve access over time.

More than 97 percent of calls are answered within 7 seconds.

How this was communicated

Because this change affects how paramedics interact with OMC during patient care, RPPEO shared this information directly with all paramedics by email on May 15, 2026.

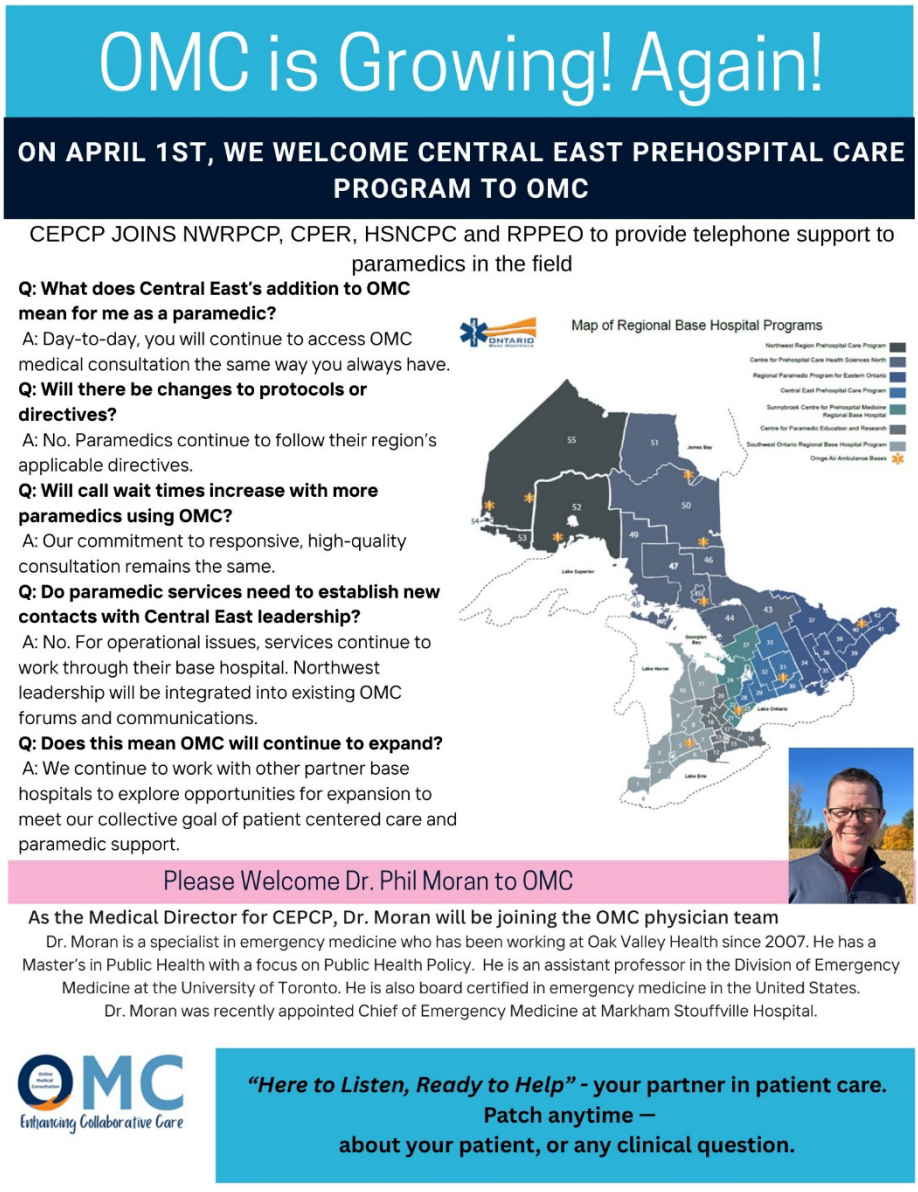
This reflects how RPPEO communicates practice-relevant updates. When something changes how care is delivered or what paramedics will experience in the field, it is sent directly so you have the information when you need it.

Paramedic services also received the update to support local awareness and reinforcement.

The bottom line

When you call OMC and hear the message, stay on the line.

Your call has been received, and a physician is being connected.



Certification

The 90-Day Patient Care Standard: **What It Means for Your Practice**

Paramedicine is a practice profession. Like any clinical role, it depends on regular exposure to real patients to maintain skill, judgement, and confidence. The Advanced Life Support Patient Care Standards (ALS PCS) reflect this reality in a clear expectation: paramedics must maintain clinical recency through ongoing patient care.

At the centre of this is the 90-day standard.

In the ALS PCS v5.4, this requirement appears in Section 5: Certification Standard (p. 284). It is written as a clear limit on time away from patient care:

"The Paramedic shall not have an absence from providing patient care that exceeds ninety (90) consecutive days."

This is a firm requirement. If a paramedic exceeds that interval without patient contact, they are no longer meeting the certification standard and the Base Hospital must respond.

Put simply, the expectation is that every certified paramedic remains actively connected to patient care within the 911 system.

Why this standard exists

There is nothing magical about day 91. The number itself is not the point.

The purpose of the standard is to set a clear boundary around clinical recency. It reflects how competence is maintained in practice: through regular exposure to real patients, in real situations.

In Ontario, paramedics provide controlled acts through medical delegation. That delegation depends on the Medical Director having current, reasonable evidence of a paramedic's competence.

When a paramedic has not seen patients for an extended period, that evidence no longer exists in a meaningful way.

At its core, the 90-day standard supports:

- Patient safety
- Clinical readiness in unpredictable emergencies
- Confidence in the delegation model that underpins paramedic practice

Why patient contact must be in the 911 system

One of the most common questions about the 90-day standard comes from paramedics working in other clinical or health system roles.

Those roles matter. But under the Ambulance Act and the ALS Patient Care Standards, certification is tied to the out-of-hospital, emergency 911 system.

This is not arbitrary.

- RPPEO certifies paramedics to practice in the 911 environment
- The Medical Director delegates authority for that specific practice environment
- RPPEO oversees practice in that environment

If a paramedic is not maintaining recent experience with 911 patients, the Medical Director no longer has current evidence of competence in that setting. Without that, delegation cannot continue.

Other forms of clinical work are valuable, but they are not interchangeable with 911 patient care for certification.

What RPPEO has changed

RPPEO reviewed how the 90-day standard was being applied and found that it was not always consistent across the region.

In response, RPPEO has introduced a more structured approach:

- Regular monitoring of 911 patient contact
- Targeted notifications as paramedics approach the 90-day threshold
- Clear outcomes when the standard is exceeded, including administrative deactivation and a Return to Clinical Practice process if reactivation is needed

The transition period: what you need to know

To support this change, RPPEO has introduced a time-limited transition period.

- Paramedics have up to 180 days from February 1, 2026 before enforcement
- This includes the 90-day standard and a one-time additional 90-day grace period
- After this, paramedics without patient contact for more than 90 days will be administratively deactivated

This transition period will end in August 2026. After that, the 90-day standard will apply as written.

What this means for you

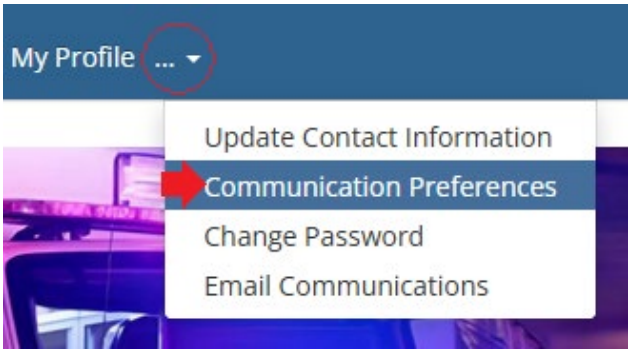
For most paramedics, this change will have little impact.

If you are *not* regularly seeing 911 patients, planning matters:

- Make sure you are participating in 911 care and documented on the ACR
- Stay aware of your recency status
- Work with your service if your role limits patient contact

If you anticipate time away from patient care, plan ahead. Arranging clinical exposure or a Return to Clinical Practice process will help you maintain or restore your certification.

Managing Your Certification Profile Email Preferences



By default, MedicNET notifications regarding your certification will be sent to all email addresses in your MedicNET profile. You may edit these addresses within MedicNET. If you have not provided an email address, RPPEO uses your employer email address.

To adjust your email preferences or choose which addresses receive notifications, go to "My Profile" in the top menu of MedicNET, then select "Communication Preferences".

Maintenance of Certification **Help**

We are happy to hear from you and help you with your Maintenance of Certification. For more about your annual CME requirements or other recertification issues, contact us at **certification@rppeo.ca** or **1-877-587-7736**.

Quality & **Patient Safety**

The Hidden Easter Eggs of the Near Miss

by Megan Wall

Case Study

You hop in the ambulance and begin checking your equipment. Predictably, a 9-1-1 call pulls you from your task. Another busy shift has begun.

You arrive on scene and are guided to a 67-year-old male with a 5-day history of malaise. The family is concerned, as what seems to have started as “a bit of a bug” has deteriorated into a more complex presentation. The patient’s initial complaints included vomiting, diarrhea and

acute muscle aches. He is fatigued and has not gotten out of bed in days, missing several medical appointments due to lethargy, including his dialysis regimen.

Your assessments reveal an altered LOA, hypotension and marked bradycardia. Peaked T waves on the ECG support your working diagnosis of hyperkalemia.

Although not required, you elect to consult with a base hospital physician to discuss a targeted treatment plan. The physician suggests mixing calcium gluconate in a 50cc bag of normal saline, supportive care and transport.

You engage your partner in an independent cross check of the calcium gluconate vial and document the mix on an adhesive label with all pertinent information. You ask your partner to confirm the minibag contents and expiry as you open the drip set.

“Sodium bicarb? When did we start using that for mixing meds?”

You stop and consider her question. To your knowledge, that has not been a common vehicle for medication delivery in your service. Did you miss a memo?

A quick internet search underscores the risks of combining calcium gluconate with sodium bicarbonate.

Wow. That was close.

You grab a normal saline bag from the truck cabinet, re-confirm your doublechecks and begin infusing the medication in the normal saline bag.

Is there an opportunity to do something more?

Or, as the saying goes, no harm... no foul...?

What is a near miss (and why it’s important we share them)

Canadian Medication Incident Reporting and Prevention System (CMIRPS) defines a near miss as “an event that could have resulted in unwanted consequences but did not because either by chance or through timely intervention the event did not reach the patient.”

While the analysis of medication errors has historically been reactive to incidents that have caused harm, our shifting culture underscores the idea that there is great value in catching where things have gone right. The study of “close calls” is unique, in that it accentuates what

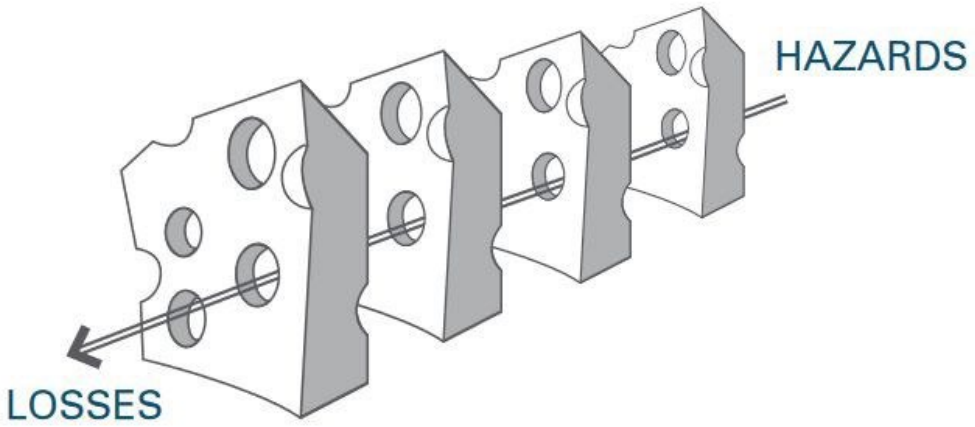
factors have worked in preventing an error from occurring. It takes the science of appreciating potential errors from reactive to proactive.

"we have the potential to shield countless others from harm"

We know that near misses happen in our catchment area every day, yet of the 421 Patient Safety Incident submissions in 2025, only 21 highlighted a near miss. Paramedics have intimate knowledge of the nuances that occur during each step of the patient care experience. They know when things are running smoothly, and are acutely aware of when they can go wrong. The downfall of assuming an event was a “one-off’ results in a missed opportunity to spot systems weaknesses and, more succinctly, what has worked to prevent negative consequences.

A cheesy review

When exploring patient safety in healthcare, The Swiss Cheese model has become one of the most common analytical frameworks. This concept illustrates that errors occur only when weaknesses (i.e. the holes in the cheese) align to create the path of least resistance, resulting in an undesired event.



When all the 'holes' in a system align, harm can result. This is the logic of James Reasons' Swiss Cheese Model of system safety.

Raising the bar, we can use this concept to study a near-miss event, identifying which actions fill those gaps and work at preventing an incident. From there, we can extrapolate the importance of each successful step and modify processes that we know have supported safe practice, without waiting for harm to occur.

In an example from outside of the healthcare realm, a seven month study commissioned by Canadian Automobile Association last year examined 20 intersections from across the nation, looking for near misses. Using cameras and AI to analyze close calls involving pedestrians and cyclists, it was discovered that more than 600,000 individuals were identified as being at risk for

potential traumatic incidents. These close calls can foreshadow a catastrophic incident. The data was collated and is being used to redesign intersections to enhance safe movement.

In our medication example above, reporting of the near miss revealed that the stock of sodium bicarb had come from the hospital, in a cabinet that contained similar infusion bags in close proximity. Messaging was released warning of the hazard, and a process change occurred in restocking from the hospital. In addition, understanding that communication and doublechecks prevented the error, the concept became sentinel. Recognizing that these measures have been successful in avoiding undesired occurrences, we've captured these lessons and woven them into CME cycles. Using similar data, the Ontario Base Hospital Group has included these steps in the latest iteration of the ALS PCS Companion Document (5.4 p 2).

What can we do if we witness a near miss?
There are three basic steps paramedics can take after they are involved in a near-miss event.

1. Prevent further harm. It's critical to change the immediate environment to ensure patients are safe in a similar scenario. In the example above, the crew removed a second bag of sodium bicarbonate solution from the bag, and searched the vehicle and base for any additional sodium bicarb that may have found its way into the supply chain. This initial step prevents harm from reaching the next patient.

2. Engage your service. Prompt reporting to your service allows a broader investigation into a potential hazard. While a crew can mitigated the threat in their immediate environment, service personnel may have a wider lens and the means to investigate the broader threat.

3. Submit a Patient Safety Incident Report to the RPPEO. These submissions allow us to explore contributing factors and delineate solutions across Eastern Ontario and the Provincial Base Hospital Groups at large. If there are safety issues in one area, chances are high that they exist in other regions. By sharing lessons learned, steps can be taken to inform and strengthen the overall system.

The greatest awareness of risks and solutions exists on the front lines, among those that perform the tasks every single day. Paramedics appreciate their environment and are in the optimal position to catch patient safety issues before they cause harm. If we can prevent an incident from occurring, we may save one patient from a possible adverse event. By reporting the incident, we have the potential to shield countless others from harm.

For more on how reporting of near misses is influencing safety planning, see ISMP-Canada's report and the CAA Safety Study.

Megan Wall, ACP, *is an RPPEO Specialist in Quality & Patient Safety.*

Where Pediatric **Pain Management** is Heading

The Pediatric Analgesia Feasibility Project is Now Live in Eastern Ontario

The regional Pediatric Analgesia Feasibility Project is now live across all four participating paramedic services, marking the transition from planning and training into real-world use.

This quality improvement initiative is focused on improving how pain and fever are managed for pediatric patients in the prehospital setting.

The project is being delivered in partnership with:

- Cornwall SDG Paramedic Services
- Hastings–Quinte Paramedic Services
- Lanark County Paramedic Service
- Prescott–Russell Paramedic Service

Training has now been completed across all four services, and each has launched the project in clinical practice.

What the project is about

Despite how common pain and fever are in pediatric calls, paramedics have had limited options for age-appropriate oral analgesia in the field.

This feasibility project is testing the use of pediatric formulations of acetaminophen and ibuprofen in real-world practice.

As Dr. Sara-Pier Piscopo, Associate Medical Director at RPPEO and clinical lead for the project, explains:

“Pediatric calls are often high-stress and low-frequency, especially when it comes to medication decisions. This project is about giving paramedics practical tools that support safe, effective care in those moments, while making sure we understand how those tools actually work in the field.”

The focus is on feasibility rather than clinical outcomes. The project is designed to understand:

- Whether pediatric oral analgesia can be used safely and reliably in the field
- How dosing, documentation, and workflow function in practice
- Paramedic experience using the medications
- Operational considerations such as stocking and storage
- What guidance, education, and processes may be needed going forward

Findings from this work will inform future clinical guidance, education, and medical directive decisions.

This is a quality improvement initiative and has received a formal determination that Research Ethics Board oversight is not required.

Clinical oversight and authorization

A Pediatric Analgesia kit with liquid and chewable ibuprofen and acetaminophen, May 2026.

Patient safety and clinical oversight remain central to the project.

- Paramedics completed training prior to participation
- Pediatric analgesia is provided through Base Hospital physician orders
- Existing quality review and oversight processes remain in place
- No new standing medical directives have been introduced

Paramedics must continue to patch to the Base Hospital physician for authorization before administering study medications.

What participating paramedics are asked to do

Paramedics participating in the project are asked to complete a brief online log each time they *consider* or *administer* pediatric acetaminophen or ibuprofen.

This includes all indications, whether or not medication is ultimately given.

The log is a key part of the quality improvement process. It allows RPPEO and participating services to understand what is working, what is not, and where adjustments may be needed as the project progresses.

From the service perspective, Danielle (Deputy Chief, Hastings–Quinte Paramedic Services) highlighted the practical importance of this work:

“Our paramedics want to do the right thing for kids in pain, but they need tools that work in real conditions. This project gives them that opportunity, and it gives us a way to learn from their experience and build something that fits how care is actually delivered.”

What happens next

Data will be collected over an approximately six-month period at each service. Findings will be reviewed collaboratively with participating services and used to determine next steps.

This includes:

- Whether broader implementation should be recommended
- What clinical guidance or education updates may be required
- How pediatric analgesia could be incorporated into future medical directives

The bottom line

This project moves pediatric analgesia from concept into practice.

Frontline use, supported by structured oversight and feedback, will shape how pediatric pain and fever are managed in the future.

Your experience in the field is central to that work.

The seizure is over. Your job isn't.

Counselling Patients After a Seizure

By Dr. Mark Froats

Case Study

You and your partner attend a local shopping mall for a 38-year-old man who has had a generalized seizure. He is there with his spouse.

You learn that he has a history of epilepsy, experiences generalized seizures approximately once per month, and is compliant with his prescribed anticonvulsant therapy. He is under the care of a neurologist and follows up with her regularly.

Today's seizure was consistent with his usual seizure pattern, and there are no concerns about an acute medical illness, substance intoxication, or medication non-compliance. The patient recognizes this event as typical for him, and his spouse confirms that this is his usual pattern and that he has returned to his baseline.

He is afebrile, his vital signs are normal, and his blood glucose is within the normal range.

After completing a thorough medical assessment - including a focused history, a full primary and secondary physical examination, and a systematic evaluation for any traumatic injuries - you and your partner determine that there are no indications to recommend transport to hospital. The patient strongly agrees with this assessment and would like to continue with his day. In your opinion, he is appropriate for treat and discharge under the ALS PCS Patient Care Standards.

Is there anything else you would like to discuss with him?

How would you counsel this patient and his spouse about his condition before discharging him from your care?

Introduction

Generalized seizures can be alarming to observe, and witnesses frequently call 911 when they see one. In many cases, the patient was not the individual who requested emergency services, and many patients would prefer not to be transported to hospital if the seizure has resolved and they are feeling well.

This is often reasonable in certain circumstances, such as when a patient with a known history of epilepsy and substantial experience with their condition prefers to follow up with their primary care provider or neurologist, and the paramedic assessment indicates that this appears safe.

> ***"there are many encounters where paramedics are the only health care providers involved in the patient's care"***

Even in circumstances where paramedics recommend transport, some patients make an informed decision to decline. Additionally, many patients who are transported to hospital leave the emergency department prior to being assessed by a physician.

As a result, there are many encounters where paramedics are the only health care providers involved in the patient's care on the day of their seizure.

In 2025, paramedics in Eastern Ontario responded to 4,158 calls for patients experiencing seizures.

A total of 389 patients refused transport against medical advice (Code 72), and 49 patients were referred (Code 77) or offered the option of treat and discharge (Code 78) and accepted.

It is important that all these patients receive the same level of counselling and consideration they might otherwise receive in the emergency department. Paramedics possess the knowledge and skills necessary to provide this counselling at the scene.

What Do We Need to Consider?

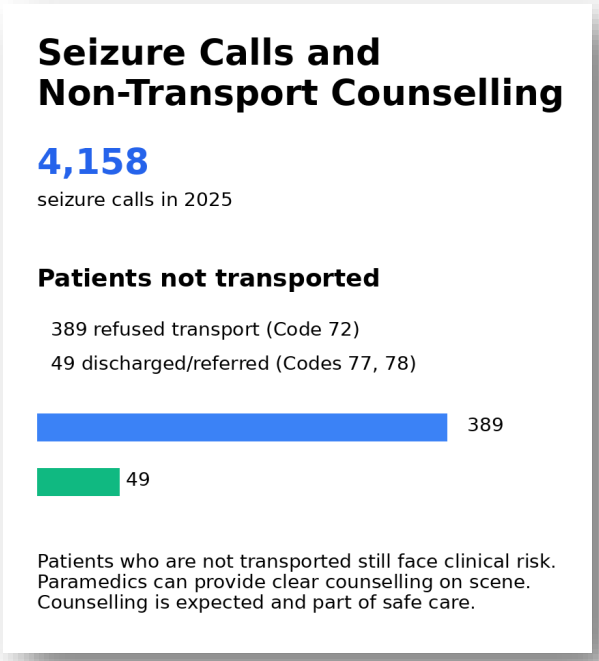
Medication Adherence

The importance of medication adherence should be reinforced.

While many seizures resolve spontaneously, this is not always the case. Status epilepticus can be life-threatening, which is why many patients with recurrent seizures are prescribed anticonvulsant medications to suppress seizure activity.

Patients should be reminded to take their medications exactly as prescribed and to avoid missing doses. Missed doses are a common cause of breakthrough seizures.

Patients who experience a change in seizure pattern or new seizures should be advised to seek medical assessment as soon as possible.



Avoidance of Common Seizure Triggers

The seizure threshold can be lowered by a number of factors, including:

- Sleep deprivation
- Stress
- Acute illness (even minor illnesses)
- Alcohol use
- Recreational drug use
- Medication non-compliance

Patients should be encouraged to maintain adequate sleep, avoid binge drinking and recreational drugs, and remain consistent with their prescribed medications.

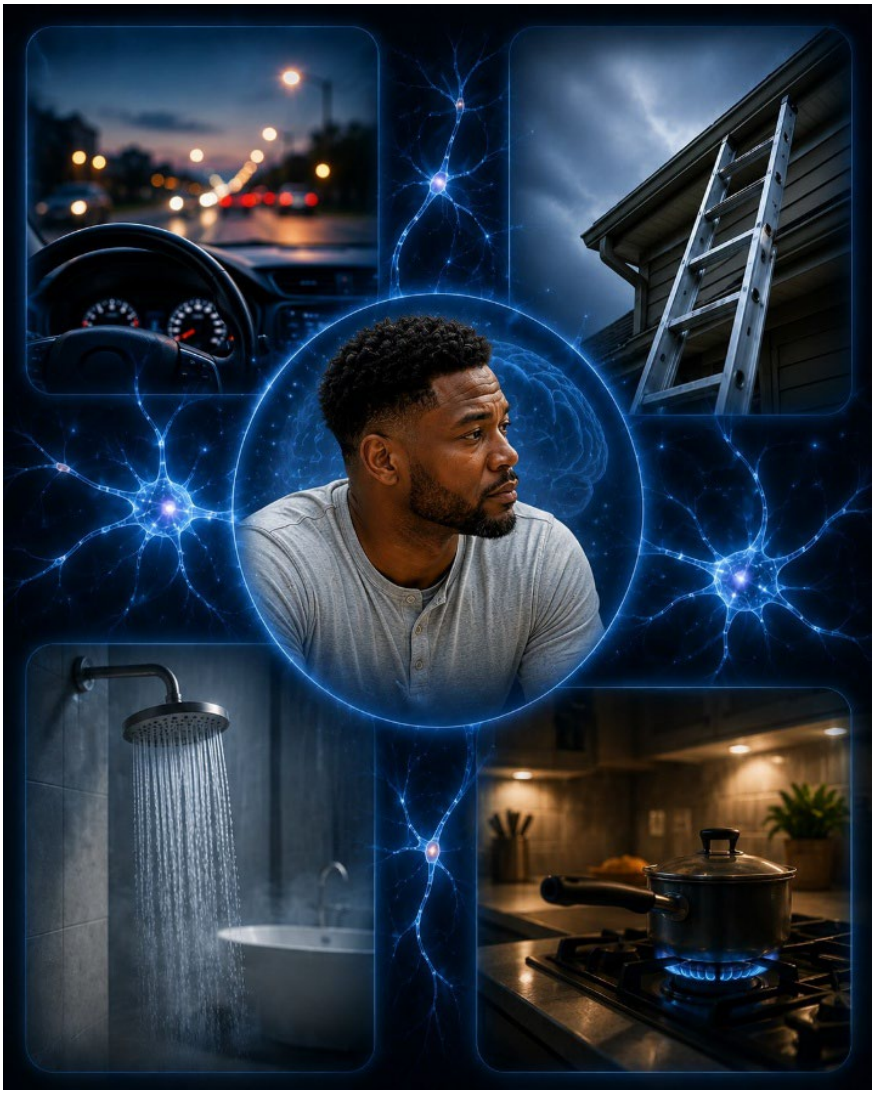
Safety

Generalized seizures can cause sudden loss of consciousness without warning, which can present significant safety risks to the patient and the public in certain situations. This is why the

Ministry of Transportation requires healthcare providers to report any medical condition that could increase a person's risk while driving a motor vehicle.

Patients should be counselled on appropriate precautions, including:

- Do not operate a motor vehicle
- Avoid working at heights (e.g., ladders or rooftops)
- Avoid bodies of water where drowning could occur (showers are safer than baths)
- Exercise caution when cooking, including using back burners and turning pot handles toward the back



Safety after a seizure: Small adjustments can reduce injury risk.

These precautions can be reconsidered after discussion with the patient's ongoing health care provider.

This counselling should be documented in the your patient care record.

Follow-Up

Patients should be encouraged to follow up with their primary care provider and neurologist at the earliest opportunity.

They should be advised to call their physician's office on the next business day to inform them that they have had a seizure and were assessed by paramedics but not transported to hospital.

Further assessment may be required, including

medication level checks, adjustment of medication doses, or addition of new medications. These steps may help reduce the likelihood of future seizures.

Family and Bystanders

Witnesses to seizures should be educated about appropriate seizure first aid, including turning the person onto their side to help prevent aspiration, protecting the person from injury, and avoiding placing objects in the mouth.

They should also be advised to call 911 if the seizure lasts longer than 5 minutes, if multiple seizures occur, or if the patient does not wake up or recover as expected.

Case Resolution

Your patient and his spouse begin gathering their belongings to leave. You ask if you can take a moment of their time to discuss a few additional issues.

You acknowledge how frustrating it must be to remain compliant with medications and still experience these events. You commend him for taking his medications as prescribed and reinforce the importance of not missing doses.

You discuss the importance of adequate rest and inquire about whether alcohol or recreational drug use may be contributing to a lowered seizure threshold.

You review safety considerations, including avoiding driving or operating motor vehicles, water safety, and avoiding working at heights.

You confirm that he will contact his neurologist when he returns home to inform them of the seizure and ask whether they would like to see him or offer further advice.

You ensure that both the patient and his spouse are comfortable with the plan.

The patient thanks you for taking the extra time to discuss these issues. He remarks that he expects to have this conversation every time he experiences a seizure, and he was surprised that during a previous encounter the paramedics simply handed him a tablet to sign and none of these topics were discussed.

His spouse adds that the last time he was seen in the emergency department, safety precautions were not discussed there either.

They express appreciation for your professionalism and comprehensive approach to their care.

Conclusion

Paramedicine continues to evolve beyond its traditional role of public safety response, execution of medical directives, and transport to hospital.

This evolution is advancing the profession and improving patient care, but it also introduces new responsibilities and expectations. As paramedics take on an expanded role in patient assessment and alternate disposition decisions, new gaps in care must be addressed through knowledge, clinical judgment, and patient education.

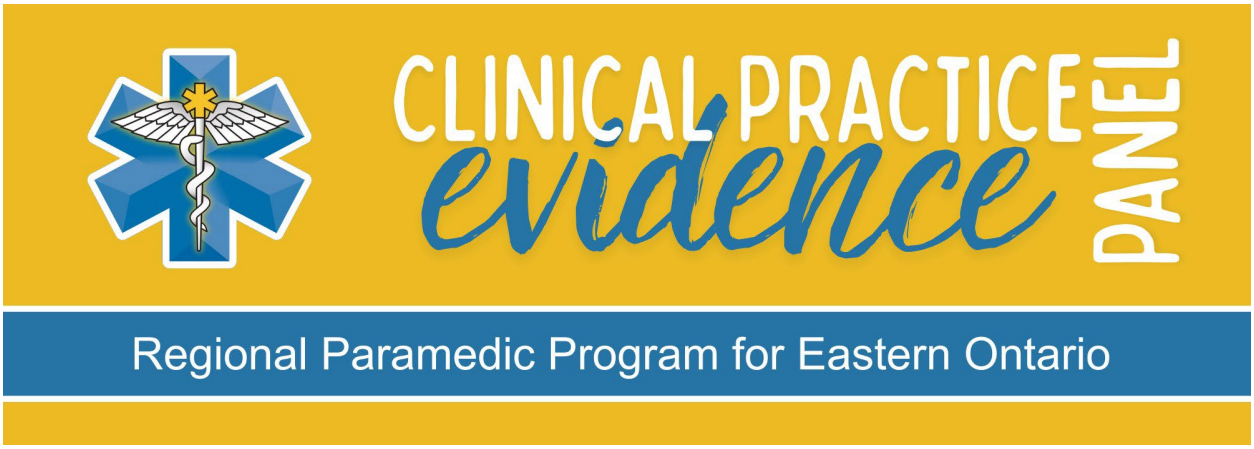
Counselling patients who are discharged after a seizure is one example of how paramedics contribute to comprehensive patient care outside the hospital setting.

Providing thoughtful counselling helps ensure patients receive the right care, for the right patient, at the right time, and in the right place.

Continue to read, learn, and grow in your practice—and continue providing the kind of care we would hope for if it were ourselves or our loved ones calling for help.

***Dr. Mark Froats**, MD, FRCPC, is an RPPEO Associate Medical Director and Base Hospital Physician.*

Evidence-Based Updates to Scope of Practice



From Evidence to What Comes Next

CPEP Update

In the January 2026 issue of MedicNEWS, we introduced the Clinical Practice Evidence Panel (CPEP), RPPEO's standing evidence review body that's now contributing to Ontario's Comprehensive Medical Directive Review (CMDR). CPEP's role is focused: it reviews evidence, challenges assumptions in current practice, and develops recommendations for provincial decision-making.

It is not a research body and it does not write directives. Instead, it asks a simple question: *do our directives reflect what patients need and what evidence supports?*

Importantly, that work includes front-line paramedics. CPEP brings together paramedics, physicians, and clinical specialists to make recommendations that reflect both the evidence and the realities of practice.

What CPEP is working on right now

CPEP is advancing three areas that many paramedics will recognize as gaps or friction points in care: pediatric analgesia, antipyresis, and anxiolysis/sedation.

Pediatric analgesia and antipyresis

CPEP identified a clear mismatch in pediatric care. Paramedics can provide opioids to children, but not simple oral medications like acetaminophen or ibuprofen for mild to moderate pain - or fever.

This has led to two parallel lines of work:

- **Analgesia:** considering a more thorough directive that includes acetaminophen and ibuprofen for children age 1 and older
- **Antipyresis:** gathering evidence to support fever management as a defined standing order indication

The pediatric analgesia feasibility study (see above in this issue) is informed by this work. The pilot is designed to answer practical questions about safety, usability, and fit in real calls.

This reflects a broader shift toward more complete care. Treating pain and fever is not new medicine. It is aligning prehospital care with what patients already receive elsewhere.

Anxiolysis and non-procedural sedation

CPEP is also reviewing the **"Combative Patient"** medical directive, including whether the current framing limits care.

Current discussion includes:

- Reframing the directive to reflect **anxiety, agitation, and behavioural presentations**, not just "combative" patients
- Expanding care to include **anxiolysis**
- Evaluating additional medications, including **haloperidol**

This is not just about adding drugs. It is about shifting how paramedics assess and manage these calls, from high-alert safety concerns toward assessment, de-escalation, and targeted treatment for a range of acute affective disorders that may include challenging behaviour.

What happens to these ideas

CPEP develops recommendations, not final decisions.

Those recommendations are brought forward by Dr. Michael Austin to provincial medical directors through the CMDR process, where directive changes are debated and approved.

The bottom line

CPEP's work is about closing important gaps in care. Not by adding complexity, but by aligning evidence, practice, and patient needs into something that works on the road.

Paramedicine Research

Your Opinion on Bio Medical Stats

From p-values to confidence intervals (and everything in between—like the terms in the word cloud), we're inviting paramedics to complete a quick survey on biomedical statistics—no calculators needed! Whether you love stats or avoid them, we want your perspective. It only takes a minute and it's a low stress way to reflect on stats. The survey is anonymous. Please click or scan below.

Take the survey!

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