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Controlled Substance Governance in Canadian Emergency Medical Services

A Practice That Has Not Kept Pace



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Executive Summary

Potent analgesics and sedatives are central to the delivery of safe, high quality care in emergency and urgent care settings in Canada and globally. What varies across jurisdictions is not the clinical risk these medicines carry, but the strength and nature of the governance and regulation built around them. In the United States, tightening federal requirements for how EMS narcotics are tracked have encouraged and inspired market innovation, with a competitive field of purpose-built digital tools emerging in response.¹ In Canada, however, the picture is somewhat different. Authorities which permit paramedics to possess and utilise controlled substances such as fentanyl, ketamine, midazolam, morphine and hydromorphone are established at the federal level but operationalised individually in each provincial jurisdiction. Across every provincial jurisdiction reviewed for this paper, none apply a consistent standard for how controlled substance records should be kept.

Health Canada authorises paramedics to possess and administer controlled substances through separate provincial exemptions rather than a single national framework, and this distinction is vital because it ultimately impacts patient experience and patient access to high quality care. Reporting timelines range from immediate to ten days, retention periods are not always specified, and paper and electronic records are treated as equally acceptable throughout. Six provinces now regulate paramedics through self-regulating colleges with genuine investigative authority: Alberta, Saskatchewan, Manitoba, Prince Edward Island, Nova Scotia and New Brunswick. Others, including Ontario, Canada's most populous province, continue to manage paramedic conduct through government administration rather than an independent professional college. Accreditation does not close the gap either. Standards developed specifically for medication governance are written predominantly for a hospital context, and the broader model that does examine controlled substance practice at the ambulance level has been adopted by only a small number of Canadian providers.

A recent statutory audit of one of Canada's largest municipal paramedic services, serving well over a million residents, found that controlled substances were still tracked through paper records and manual end of shift reconciliation counts, and that the service's own required monthly checks were not being performed. Notably, the same deficiency had previously been identified through internal review three years earlier. In one province, where paramedics draw their controlled substance supply directly from hospital pharmacies, an analysis of legal decision records identified more than 80 nurses sanctioned for narcotics theft in a single decade, with media reporting that such convictions occur annually. Comparable cases appear in several other provinces, including theft from lockers and dispensing cabinets that are paper based, or only partly electronic, where record keeping was never designed to detect discrepancies as they occurred.

Effective October 2026, Health Canada is consolidating its controlled substances regulations into a single unified structure for the first time. This creates an opportunity to modernise the operational systems beneath the regulations at the same time the law itself is updated. This paper sets out the evidence for why modernisation is overdue in Canada, what a digital controlled substance management system already delivers in comparable markets, and what closing the gap is realistically worth, in hours and in assurance, to a Canadian provider that adopts the change.

Introduction and Background

Every province in Canada authorises paramedics to carry and administer controlled substances. Because the federal Controlled Drugs and Substances Act doesn't recognise "paramedic" as a category in its own right, Health Canada address this through Section 56 exemptions, issued separately to each province and territory, both to paramedics and to the "Designated Administrators" who supply them.²

These exemptions are the legal basis by which Canadian paramedics are allowed to carry CTS medication. Interestingly, each exemption differs from one another. One province's exemption, for instance, routes paramedics' supply directly through a hospital pharmacy and requires loss or theft to be reported immediately. Two provinces' exemptions allow up to ten days to report a reportable medication incident. Retention periods, where specified at all, aren't consistent either.^{3,10} What none of the provincial exemptions reviewed for this paper do is specify whether the underlying record needs to be paper, electronic, or anything in particular. In practice, that leaves it to each paramedic and each Designated Administrator to maintain an accurate documentation record that nobody outside the organisation sees until an inspection, or an incident, forces it into view.

Canada published a single, consolidated set of Controlled Substances Regulations in December 2025, replacing the current four-part patchwork of narcotic, benzodiazepine and food-and-drug rules, effective October 1, 2026.¹ Whether the underlying operational systems are rising to meet those standards remains the central question of this paper.

It's worth being precise about what "documentation" and "assurance" actually mean in definition, a distinction set out in our initial white paper.¹¹ A paper record, or a record split across several disconnected systems, could confirm after the fact that something happened. It can't tell an organisation, on any given day, exactly what medications it holds, who has handled it, or whether the numbers reconcile. Only a continuously updated, centrally visible system does that. Canada, as the evidence below shows, has relied almost entirely on the former for decades, despite technology existing to support the change.

Description of the Problem

A paramedic service provider operating across multiple provinces must navigate conflicting reporting timelines and differing controlled substance lists depending on where a vehicle is located. A single national compliance process cannot be established, because no federal framework exists to support it.

Professional regulation compounds the problem. In a self-regulating health profession, the government delegates oversight of the profession to a college made up of and funded by its members. The college is not a union and while it supports the interests of its members to advocate for the profession, its statutory mandate is to protect the public. It does this by setting entry standards, defining the scope of practice, issuing practice standards, and investigating and holding practitioners to account when they do not meet these standards. For paramedics, those public protection responsibilities extend directly to controlled substance handling, since the college can set and enforce standards for how these medicines are stored, administered, documented and reconciled, and can investigate diversion or record keeping failures as professional misconduct.

Several provinces, including Alberta, Saskatchewan, Manitoba, New Brunswick, Nova Scotia and, as of April 2024, Prince Edward Island, regulate paramedics this way, through self-governing colleges with genuine investigative and disciplinary authority. Others, including Ontario, British Columbia, Quebec and Newfoundland and Labrador, still manage paramedic conduct through government administration and licensing, where no independent professional body holds that dedicated public protection mandate. Ontario paramedics remain outside the 27 health professions the province otherwise regulates through self-governing colleges. A fresh call for a college, this time from a coalition of 103 municipalities, was made as recently as January 2026, and was opposed just as quickly by the union representing the province's paramedics.¹²

Regardless of the merits of that debate, the practical consequences remain. How a paramedic is held accountable for mishandling a controlled substance varies by province, and in Canada's largest province, Ontario, that oversight currently runs through government administration rather than a self-regulating college. The Ontario picture is also complicated further by a dual regulation. Initial paramedic licensing sits with the province, but authority over what a working paramedic is actually permitted to do clinically, including which controlled substances they may carry and administer, sits separately with base hospitals to which their service is affiliated. A base hospital's medical director can extend, restrict or withdraw that clinical authority on their own judgement, independently of the province's registration process, and can do so for a single paramedic without impacting the paramedic's underlying provincial licence. For a governance model already built on paper registers and periodic audit, the dual structure creates a further risk into the system without the ability to closely monitor or provide assurance.

Accreditation doesn't appear to close the gap or address this either. Canadian healthcare is well accredited in general, with Accreditation Canada's Qmentum program widely used, including in EMS. However its dedicated medication-management standard, the one instrument that actually specifies what safe controlled-substance governance should look like, is written for acute-care hospitals, not ambulance services or air medical operators.¹³ The one accreditation model (Commission on Accreditation of Ambulance Services) that does examine controlled-substance practice specifically at the ambulance level has a documented Canadian footprint of a small handful of organisations nationally, against a national paramedic workforce estimated at roughly 38,000.^{14,16} And even where useful data is being collected, a 2020 accreditation review of one provincial EMS system noted that a great deal of data was being gathered but wasn't always being turned into anything useful for quality improvement or assurance.¹⁷ Having the information and using it to support insights are two different things.

Ambulance services

The clearest evidence available for this paper comes from a statutory audit of a Canadian paramedic service, published in 2025.¹⁸ The service in question is not small or under-resourced. It covers well over a million residents and the audit found that controlled substances are still managed through sealed drug pouches with a paper record, checked and counted by hand at the end of each shift. Two of the service's own required monthly checks, audit of appropriate use, and a review of distribution, were found not to be happening at all. A small sample of records turned up gaps in more than two-thirds of them, mostly wastage recorded on paper but never carried into the electronic patient file. And the same practices had already been flagged by an internal review three years earlier, without being fixed. Access controls had not shown improvement, as people with no role in managing controlled substances still had access to storage areas, and staff on leave still had access to their drug mailboxes.

A separate case, drawn from a provincial paramedic regulator's own published decision, provides insight into practices, where a paramedic who wasn't authorised to handle controlled substances, and who was on medical leave at the time, opened narcotics lockers at two stations, bypassed the required access procedure, and when the alarms sounded, simply phoned the health authority's security line and talked them into disabling them. Separately, while wearing their uniform at a hospital they were not rostered to work at, a paramedic made dozens of unauthorised removals from an automated dispensing cabinet and entered false patient event numbers into the system to make those removals look legitimate. They were eventually caught and suspended from any future involvement with narcotics, but not before both a physical alarm and an electronic audit trail had, for a period, been worked around.¹⁹

The health authority's own controlled-substances policy, reviewed for this paper, describes its record of truth as being drawn from several separate systems, patient records, an automated dispensing system, a vehicle equipment log, and paper, with full reconciliation required only once a year, a lower standard than the monthly standard the case above failed to meet.²⁰ In a separate incident, several vials of fentanyl and midazolam were stolen from an ambulance left unattended overnight in a hospital bay; the service were able to confirm the vehicle itself is meant to be locked, but not how the drugs inside had actually been secured at the time.^{21,22}

Hospitals

An analysis of one province's own legal-decision database found that at least 82 registered nurses were sanctioned for narcotics theft between 2012 and 2021 alone, up from 55 in the decade before that, alongside at least 22 licensed practical nurses sanctioned for the same reason since 2006.²³ One of the province's major media outlets reported in 2025, that convictions like these happen every year. Individual cases amplified the details where one nurse was found guilty of stealing and personally using injectable narcotics meant for elderly patients across three different care facilities over nine months, replacing what she took with apple juice or sugar water. Another was sanctioned three separate times, at three different facilities, for a similar substitution method, before finally drawing a 30-month suspension; and at one of the province's largest teaching hospitals, a theft that took place in 2015 and 2016 wasn't addressed until 2019, by which point the hospital confirmed that the very system the nurse had "easily circumvented" was still the system in place.²⁴ ²⁶ Paramedics in that same province draw their controlled-substance supply directly from hospital pharmacies, so a control environment quantifiably breached by dozens of staff over a decade is the same control environment their own supply chain runs through.⁸

In April 2024, a Canadian paramedic service discovered that a medication pouch had gone missing at the end of a night shift. The pouch contained several narcotics, including 8 mg of hydromorphone and 20 mg of morphine, enough that the service issued a public notice "out of an abundance of caution" and confirmed it was working with local police to recover it. The service did not say publicly whether the pouch was lost or stolen, and as far as the public record shows, that distinction was never resolved.²⁷

In 2018, another Canadian paramedic service identified a discrepancy in its hydromorphone inventory and reported it to local police. The resulting investigation found that a paramedic had removed hydromorphone from vials stored in the service's drug vaults across three separate hospitals, not a single site, but a pattern repeated across the paramedic's normal working locations. The service confirmed the affected vials were pulled from circulation and the paramedic was placed on leave; he was later charged with breach of trust, criminal negligence, theft under \$5,000, and mischief under \$5,000. It was, notably the service's own inventory checks that caught the discrepancy, which is itself an example of how these gaps tend to surface in Canada. Through internal reconciliation catching up with a problem already underway, rather than through real time tracking and escalation. If the systems identified the transactions real time, they would not have relied on retrospective reconciliation and can catch transactions proactively.²⁸

Air medical and inter-facility transport

Health Canada aligns air ambulance operators under their own category, issuing separate Section 56 exemptions for ground and air services in most provinces.^{9,10} Independent oversight of Canadian air medical operations is close to non-existent. A 2019 provincial audit of one of the country's two largest air ambulance providers found that the responsible provincial ministry wasn't receiving adequate regular reporting from its air ambulance contractor on care quality, staff qualifications, or flight cancellations.²⁹ That finding wasn't about controlled substances specifically, but if a provincial ministry isn't getting reliable reporting on something as visible and comparatively easy to track as flight cancellations and staff qualifications, there's little confidence that oversight of narcotics stored aboard the same aircraft is any better. The structural case for treating air medical as higher-risk than ground EMS is straightforward. One of these two providers alone operates six bases across three provinces, each subject to that province's own Section 56 exemption, controlled substance list, and reporting timeline.

The other, responsible for more than 19,000 patient transports a year, operates twelve bases within a single province. A helicopter or fixed-wing crew can start a shift under one province's exemption terms and land, mid-transport, under another's, carrying the same locked narcotics safe the entire way. Air medical crews also typically carry a broader formulary and larger standing stock than a single ground ambulance, because critical-care and neonatal transport guidelines call for a wider range of sedatives, analgesics, and paralytics than primary or advanced care paramedics carry. More medication categories and more concurrent bases mean more individual points where a discrepancy has to be reconciled, not fewer.

Staffing compounds the exposure. Air bases in Canada draw on relief and rotational crews to cover 24/7 coverage across sparsely populated regions, so a given narcotics safe may be accessed by a rotating pool of paramedics and flight nurses who aren't all based at the same location day to day, the same shared-access, unreviewed-list pattern documented in the ground EMS evidence above, but spread across a wider and less consistently supervised roster. Multi-leg transport itself adds custody points a single-vehicle ground ambulance never encounters: a refuelling stop, a mid-transport hospital handoff, or a crew change partway through a flight all create a moment where controlled substances change hands outside the originating base's own storage and documentation system.

No Canadian case naming a specific controlled-substance failure at an air medical operator surfaced in the public record for this paper, however the pattern is well documented at comparable air ambulance operations elsewhere. In Florida, the chief flight nurse for the Monroe County Trauma Star helicopter program was found, after an internal tip flagged discrepancies in the aircraft's controlled substance logs, to have stolen fentanyl, hydromorphone, midazolam, ketamine, and morphine from the program's hangar over an extended period, falsifying records to conceal it.³⁰ The program's medical director and EMS chief were subsequently indicted for tampering with witnesses and evidence during the investigation into her conduct.³⁰

Taken together, these describe the same structural weakness recurring across settings: controlled substances secured in lockers, cabinets, pouches, and vehicle safes, reconciled by paper or partial electronic records that are checked periodically rather than continuously, with access controls that go unreviewed for long periods of time. Wherever the Canadian evidence names a specific failure, it is theft from that kind of managed storage, a chance discovery, or an audit that happened to be run, not a system built to catch it as it happened.

The Cost of the Assurance Gap

The federal exemption doesn't specify a record-keeping format. The regulator that would investigate a paramedic differs by province, and in the country's largest one runs through government administration rather than a college. The standard built specifically for medication governance doesn't reach ambulance services. The model that does, has been adopted by a small handful of providers nationally. And every time this system has actually been under review by external bodies, the finding has been a paper record, required checks that weren't happening, and a documentation error rate that would raise concern in almost any other regulated healthcare setting.

Based on the evidence available, it is unlikely that a Canadian ambulance service, or the hospital pharmacy supplying it, could produce a complete, reconciled account of its controlled-substance holdings across several years on short notice, or trace every vial of controlled medication from hospital pharmacy supply through to administration, waste or destruction, without months of manual reconstruction across paper registers, dispensing-cabinet printouts and patient records held in more than one system and more than one place. Because several provincial exemptions tie ambulance supply directly back to a single hospital pharmacy, a gap in one location's paper trail is also a gap in the other's chain of custody. Health Canada's own national reporting system is built for exactly this and no more: it's a portal for submitting a loss or theft after the fact, not a live inventory system, and it was never designed to answer the question of what an organisation holds right now.³¹ That gap carries a cost that can actually be measured, using Canada's own published numbers.

Staffing Levels and Documentation: One of Canada's largest municipal paramedic services reported an average of 364 paramedics on duty each day in 2024, working 12-hour shifts.³² That same service reported 165 Advanced Care Paramedics (the group authorised to carry and administer controlled substances) as of late 2025.¹⁸ Based on these staffing numbers, and assuming a baseline 8-10 minutes per check under a paper-based system and 2-3 minutes for an equivalent electronic solution, the aggregate time utilised across these two organisational examples conservatively equates to between 1,500 to 2,000 supervisor and clinical hours a year. This includes a paper reconciliation at every shift change, monthly reconciliation requirements (assumed to be not occurring), and a manual review whenever a discrepancy turns up and does not factor in the significant time burden involved in actually investigating a detected issue.

Investigation time: Where a discrepancy is identified, the pattern in the evidence above is a manual, cross-system search, pouch records, dispensing-cabinet printouts, patient records, typically running somewhere between 45 minutes and an hour and a half of supervisor time at a minimum. A digital system that produces the same information in one place brings that closer to 15 to 30 minutes.

Scaled nationally: None of this accounts for the fact that the monthly checks required by policy in the case above weren't being performed at all, meaning the real level of assurance sits below even this paper-based baseline. Scaled cautiously across an estimated 38,000 paramedics nationally,¹⁶ the hours currently spent on manual reconciliation, and available to be returned to patient care through a digital, real-time system run into the tens of thousands annually, before counting the harder-to-price cost of regulatory exposure, reputational risk and the supervisory time spent reconstructing paper trails after the fact, which the evidence above shows is already happening.

Possible Solutions

A digital controlled-substance management system turns governance from a retrospective record into something closer to continuous assurance, adding real depth where paper, or a basic electronic form, offers only a single layer of protection. The capabilities that distinguish assurance from documentation are:

- Real-time visibility and reconciliation of stock, administration and waste, so a discrepancy surfaces immediately rather than at the next scheduled count.
- Individual accountability through authenticated, time-stamped access, so every event ties to a named clinician rather than a shared key or a login.
- A complete chain of custody that follows each medication from hospital pharmacy or delivery through to administration, waste or destruction, across stations, vehicles, sites and patients.
- Proactive anomaly detection, flagging unusual patterns for review rather than waiting for the next scheduled audit to find them, the same approach that has already surfaced diversion in comparable systems abroad that periodic manual review had missed entirely.^{33,34}
- Audit-ready records that can be produced on demand rather than reconstructed under inspection pressure.

In the United States, tightening federal rules on EMS narcotic handling have already reshaped the accountabilities placed on services and paramedics, and further rule changes since have driven broader adoption of integrated, real-time narcotic tracking tools across the sector. One large US 911 provider has publicly credited comparative, systemwide monthly monitoring, checking every paramedic's use and waste against system norms, with catching real diversion that periodic manual audit had missed.³⁴

The time-and-motion studies of automated dispensing have recorded nursing time savings of up to 14.7 hours a day across three intensive care units, medication retrieval time roughly halving, and the number of storage locations a nurse has to visit per patient falling by around 40 percent.^{35,38} A separate multi-site study found manual review of controlled-substance waste took an average of nearly seven minutes per case, adding up to close to 2,000 hours of pharmacy labour a year across the system studied, falling to around 130 hours once software-assisted review took over.³⁹ And in the ambulance environment specifically, one regional service that implemented a specialised controlled drug management solution reported more accurate documentation and faster investigations, with its own Executive Director of Clinical Information Services crediting the system with reduced costs, more hours returned to patient care, and less medication wasted.^{40,41}

For providers operating across more than one location, consolidation and central governance is key. A single, centrally updated record replaces dozens of isolated paper registers, so stock, administration, waste and access are visible across an entire organisation rather than trapped in individual books at individual stations. It standardises practice everywhere at once, links each clinician's activity to them no matter which site they're working at, and gives organisational leaders visibility and accountability of the whole organisation without a physical visit to every cabinet. For a multi-site provider, the time efficiencies provide the grounds to make the investment, but it's the organisation-wide assurance that also brings the additional value and confidence in ensuring that these medications are being tracked appropriately.

Recommendations

The contribution that paper registers have made shouldn't be dismissed, they formed the basis to advance practice, and have underpinned professional accountability and satisfied what regulators expected for decades. But the standard now expected of Canadian healthcare governance has moved past what those systems were ever built to deliver, and the question for any provider handling controlled medicines is no longer whether to move away from paper, but whether it can still afford not to.

We recommend that Canadian providers handling controlled substances in EMS look to the following:

1. Start before October 2026, not after:

Health Canada's consolidated Controlled Substances Regulations take effect October 1, 2026.¹ Providers that begin modernising their documentation now will meet the new expectations from a position of readiness rather than catch-up.

2. Use audit findings as a mirror, not a check-box:

A recent statutory review found required monthly controls simply weren't being performed, and the same documentation gap recurring three years after it was first flagged internally.¹⁸ Any organisation without a recent, independent review of its own controlled-substance practice should assume it can't yet rule out the same finding.

3. Make individual accountability the baseline, not the aspiration:

Unreviewed access lists and shared credentials were found in a municipal auditor general's report and audit on a Canadian paramedic service as recently as 2025.¹⁸ Shared or unreviewed access should be treated as a large organisational risk, not an operational inconvenience.

4. Don't mistake the absence of accreditation findings for adequate practice:

Where the standards built specifically for medication governance don't reach ambulance or air medical operations, the absence of a finding may simply mean the practice has never been tested against that standard. It would be complacent to see the lack of a standard to justify no need to improve.

5. Build for the toughest provincial standard, not the most lenient:

Any system adopted should be able to meet the strictest reporting timeline in use anywhere in the country. The toughest of the immediate-reporting standards already in use could be the baseline, structured so a change in provincial exemption terms doesn't mean rebuilding the system from scratch each time.

6. Quantify the real cost locally:

The illustration in this paper is built from published Canadian staffing data and research on time loss medication reconciliation. Every provider should run the same exercise against its own shift pattern, discrepancy rate and investigation time to determine its own lost time and the efficiency a digital system could provide in saved time and costs.

This applies across the whole spectrum, from the smallest single-vehicle service to the largest provincial provider. The assurance gap described in this paper exists, the cost of leaving it open is measured in regulatory exposure, lost operational hours, patient risk, and on the evidence reviewed, the cost of closing it is substantially lower than the cost most Canadian providers are already quietly paying to maintain the status quo.

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