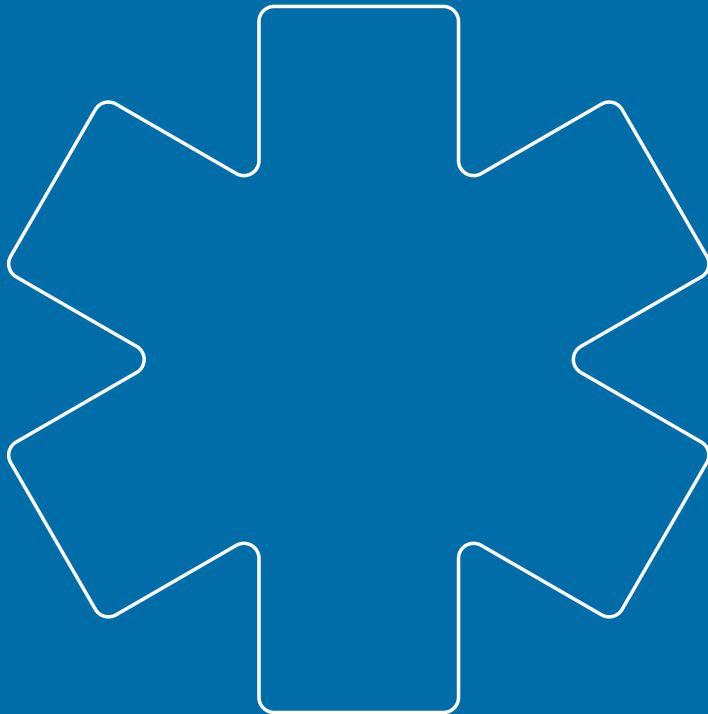


17.31M
911 ENCOUNTERS

4,459
AGENCIES

8.8M
LONGITUDINAL
RECORD IDS

EMS INDEX



NINTH EDITION
2026

eso[®]

INSIGHTS AND BEST
PRACTICES FOR
EMS
AGENCIES

Introduction

How do you know if your system is getting better? Not just busier, not just compliant, but actually better at improving community health and safety outcomes. Answering that question as a single agency takes time, and means missing out on what others have already learned. We are more powerful – and better – together. Powered by the ESO Data Collaborative, consisting of more than 4,400 participating agencies today, the ESO EMS Index is designed to ignite conversations around improvement driven by data.

Now in its ninth edition, the 2026 ESO EMS Index examines seven measures that show where prehospital care is advancing, where gaps remain, and where EMS professionals can make a measurable difference.

This year’s report draws on the largest dataset in the Index’s history, with more than 17.3 million de-identified records compiled from 4,459 agencies using ESO’s electronic health record and those using other patient care reporting systems that participate in the ESO Data Collaborative through health data exchange.

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17.31M

911 encounters

4,459

Agencies

8.8M

Longitudinal Record IDs

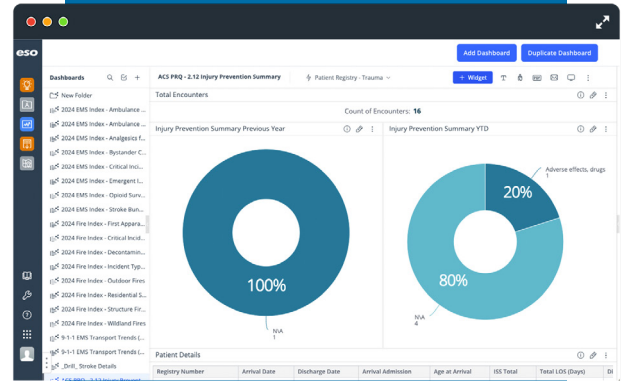
DATASET

This Index is retrospective and looks at aggregate data from January 1, 2025 to December 31, 2025. This document is intended to contribute to discussion about EMS best practices and quality improvement efforts to enhance patient outcomes. It is not meant as a scientific study, nor is it comprehensive in nature. Year-over-year comparisons use rate-based metrics wherever possible to account for the growing dataset. Where only raw counts are available, we note the context and exercise caution in interpretation.

We present these findings as a starting point, not a scorecard. The measures in this report are designed to help EMS leaders ask better questions of their own data, identify opportunities for improvement, and connect their operational reality to a national evidence base.

HOW TO USE THIS REPORT

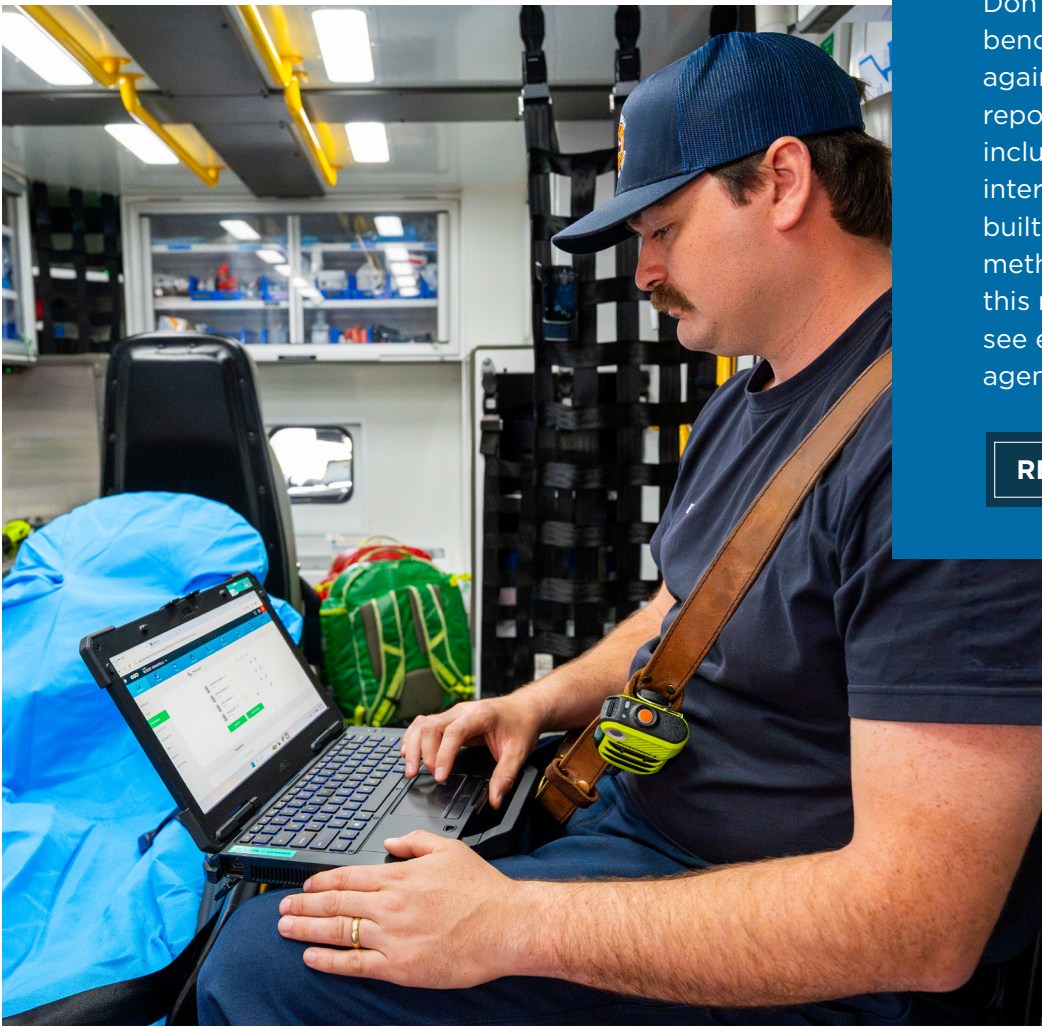
Each of the seven measures in this edition includes an operational definition, a narrative analysis, best practice recommendations, and an “ESO in Action” sidebar showcasing how data flows through ESO’s connected intelligence platform to make these insights possible. We encourage readers to compare these measures against their own data to drive measurable improvement in their communities.



QUERY YOUR OWN DATA

Don't just read the benchmarks – measure against them. ESO's reporting tool, **Insights**, includes a library of interactive dashboards built from the same methodology used in this report, so you can see exactly where your agency stands.

[READ MORE](#)



THE SEVEN MEASURES

This edition examines seven measures spanning opioid response surveillance, obstetric emergencies, prehospital blood administration, repeat patient encounters, pediatric behavioral health, stroke recognition at dispatch, and assessment of patients with syncope. Each measure reflects a distinct dimension of prehospital care where data can drive improvement.



1. Suspected opioid overdose

For the third consecutive year, opioid-related encounters declined as a share of 911 responses – and ESO’s trend mirrors national CDC data. Prehospital buprenorphine administrations more than doubled, signaling growing program adoption.



2. Obstetric emergencies

ACOG’s 2025 guidelines shift the paradigm: Treat severe hypertension in pregnancy based on numbers, rather than wait for symptoms. With treatment rates at 5%, the opportunity lies in aligning protocols and formularies with the new standard.



3. Prehospital blood administration

Prehospital blood has outgrown its battlefield origins. In this dataset, one in three prehospital transfusions occurred in medical patients, with GI hemorrhage ranking as the most common clinical impression.



4. Repeat patient encounters

One in five patients drove nearly half of all 911 responses. The top complaints – sick person, falls, breathing problems – point to chronic needs, not system misuse. The opportunity is matching these patients with the right resources.

5. Pediatric behavioral health

Pediatric behavioral emergencies aren’t rare – they’re nearly one in 10 911 encounters, climbing to one in six for adolescents. Less commonly, when emergent sedation is required, agitation scoring is an emerging opportunity to strengthen assessment and documentation. And school-based encounters raise consent questions worth addressing before the next call.



6. Stroke recognition at dispatch **NEW!**

The stroke chain of survival starts at the 911 call. When dispatch recognized stroke, EMS recognition and bundle completion reached 73%. When it didn’t, both fell to 47%. Early recognition sets the trajectory.



7. Syncope-01 (NEMSQA) **NEW!**

The 12-lead is what stands between a good assessment and a missed diagnosis. Overall acquisition was 59%, with patients under 45 lagging at 46%. The gap widens for non-transported patients: Nearly half did not have a documented 12-lead. Whether the patient goes to the hospital or stays home, this is an opportunity for EMS to catch what might otherwise go undetected.





Suspected opioid overdose

KEY FINDING

Suspected opioid-related encounters have declined steadily, from a peak of 2% of all 911 responses in May 2020 to 1% in 2025 – a trend that mirrors national CDC data. At the same time, prehospital buprenorphine is gaining traction: Documented administrations more than doubled, from 234 to 696, between 2023 and 2025 among 911 patients with suspected opioid overdose. The decline in overdose responses and the growth in field-initiated treatment point to a system that’s evolving from response to intervention.



Number of documented administrations of prehospital buprenorphine among patients with suspected opioid-related encounters.

OPERATIONAL DEFINITION

This measure captures 911 encounters in which the primary or secondary clinical impression was documented as suspected opioid overdose. Inclusion criteria are consistent with prior editions to enable direct year-over-year trend comparison.

159,312

Suspected opioid encounters

1%

Of all 911 responses



CONTEXT

EMS crews are often the first – and sometimes only – clinical contact for patients experiencing opioid emergencies. That frontline position extends well beyond acute response: It’s a window into how opioid trends are shifting at the community level and a potential bridge to treatment pathways.

The national picture is cautiously optimistic. [Preliminary CDC data](#) estimates approximately 72,000 drug overdose deaths for the 12 months ending in September 2025 – a 19% decline from the prior year.¹ ESO’s data mirrors that trajectory: For the third consecutive year, opioid-related encounters have declined as a share of 911 responses, dropping from 2% to 1% across the trend window. When prehospital data aligns with national surveillance, it reinforces the value of EMS as an early signal for public health.

What’s behind the decline? The data can’t say definitively – expanded harm reduction access, prehospital buprenorphine programs, and broader shifts in use patterns may all contribute. But the signal is durable, and that consistency matters.



MEASURE 1

FIGURE M1-1
Suspected opioid encounters as a share of all 911 responses (2020–2025)

Each data point represents suspected opioid encounters as a share of total 911 responses for that month.

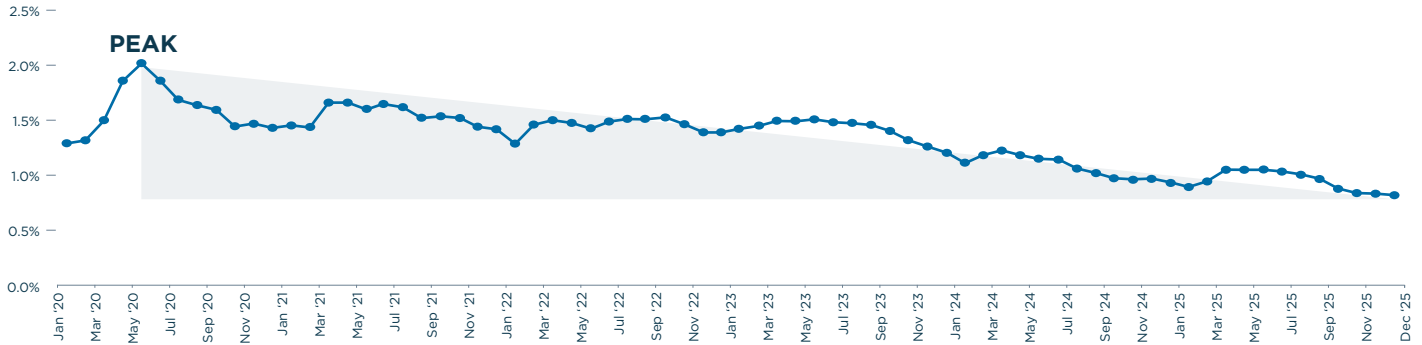
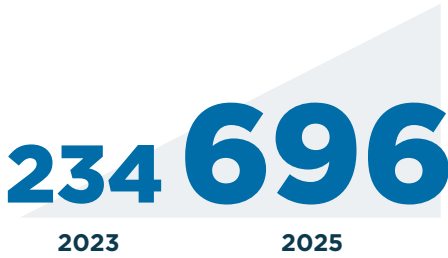


FIGURE M1-2
Prehospital buprenorphine administration



Prehospital buprenorphine is gaining ground. Documented encounters more than doubled – from 234 to 696 – between 2023 and 2025. The clinical case is compelling: For patients with opioid use disorder, buprenorphine eases withdrawal and dramatically improves engagement and retention in recovery programs. It’s a low-risk, high-impact intervention at the moment of first contact, when motivation for treatment is often highest.

The evidence base is also rapidly growing. A [2025 special issue of Prehospital Emergency Care](#) dedicated to prehospital substance use disorder care affirms the feasibility and safety of field-initiated buprenorphine.²

Agencies looking to start or scale a program should train crews on the [Clinical Opiate Withdrawal Scale \(COWS\)](#) – a standardized tool for assessing withdrawal severity and determining patient eligibility on scene.³

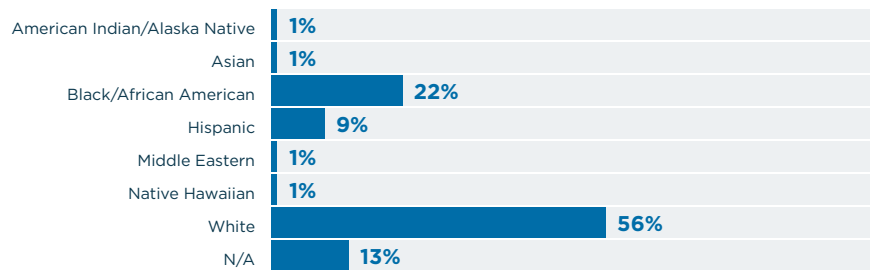
EXPERT VOICE

– Dre Cantwell-Frank, NRP,
 National Clinical Implementation Manager
 & EMS Specialist at the Bridge Center

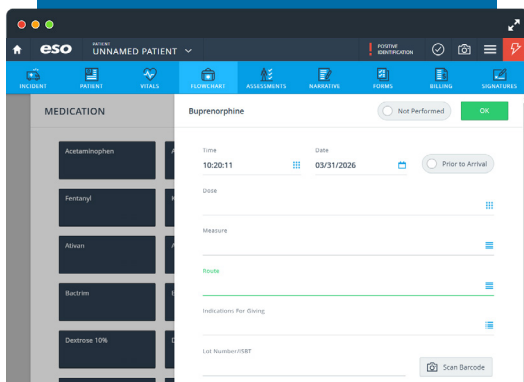
“Naloxone is a critical part of responding to opioid-related encounters, but it’s not a treatment for opioid use disorder and it wears off quickly. Buprenorphine addresses the root cause, connecting patients to long-term treatment and reducing repeat calls. An adequate dose in the field can provide up to 48 hours of protection for a patient, supporting them through the critical window of vulnerability when they are at highest risk of death. Just as importantly, it relieves the pain and suffering of withdrawal. It’s also a quick intervention, adding just minutes to scene time. Administering buprenorphine is the most compassionate, patient-centered thing a paramedic can do in the moment – and a skill every paramedic should master.”

FIGURE M1-3
Race and ethnicity distribution of encounters with suspected opioid use

Race and ethnicity are reported as documented in the patient care record. Documentation of race and/or ethnicity was absent in 13% of encounters.



N=159,312. More than one race or ethnicity may be documented for a patient.



ESO IN ACTION

Built for this work. **ESO EHR** captures buprenorphine administration in the Flowchart Medications Module and includes a dedicated Clinical Opiate Withdrawal Scale (COWS) form so agencies can launch and monitor prehospital opioid treatment programs without bolting on extra tools. **ESO Insights** takes it further, turning opioid encounter data into trend analysis that supports both clinical quality improvement and public health partnerships.

[READ MORE](#)

BEST PRACTICES

1

Capture public access naloxone utilization.

Bystander-administered and community-distributed naloxone doses are part of the clinical picture. Capturing these administrations gives a fuller patient assessment and reveals how public access programs are performing in real time. This data strengthens your role as a partner in the broader overdose response ecosystem.

2

Consider whether field-initiated buprenorphine fits your community.

At least [19 states and Washington, D.C.](#) now have prehospital programs – and the evidence base is growing.⁴ The 2025 *Prehospital Emergency Care* special issue on enhancing care for patients with substance use disorder offers a practical roadmap, including lessons learned from [Wake County EMS](#).⁵ Key ingredients: Establish referral pathways with local EDs and recovery treatment partners before your first dose, and train crews to use the Clinical Opiate Withdrawal Scale (COWS) to identify eligible patients in the field.

3

Turn your data into a public health partnership.

EMS agencies sit on a goldmine of real-time opioid intelligence. By evaluating where overdoses cluster, you can guide the strategic placement of naloxone distribution points and emerging innovations like harm reduction vending machines ([Milwaukee's program](#) offers 24/7 access to naloxone, fentanyl test strips, and drug deactivation kits without stigma or barriers).⁶ This further positions EMS as an indispensable partner in community health infrastructure.



Obstetric emergencies

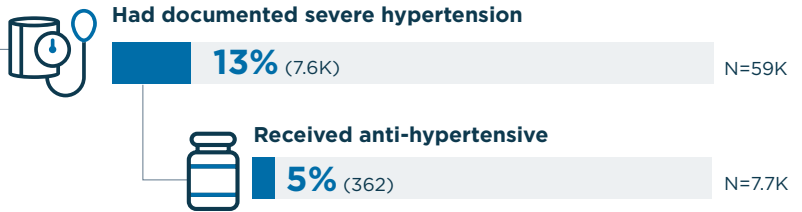
KEY FINDING

In 2025, there were 112,502 documented 911 encounters with pregnant patients, of which 59,212 involved patients at 20 or more weeks gestation. Updated ACOG guidelines were released in April of 2025, establishing clear thresholds for intervention. This data indicates there are many opportunities for improvement: Severe hypertension in pregnancy was treated just 5% of the time, relatively unchanged from last year. For postpartum hemorrhage, 17% of patients received TXA or oxytocin – also relatively unchanged. The opportunity is clear. So is the work ahead.

OPERATIONAL DEFINITION: HYPERTENSION

This measure encompasses all 911 encounters with documented pregnant patients at 20 or more weeks gestation. A patient is included in the severe hypertension analysis if they had a systolic blood pressure of 160 mmHg or higher or a diastolic of 110 mmHg or higher, meeting the ACOG threshold for severe hypertension requiring treatment. The target intervention is administration of magnesium sulfate or an appropriate antihypertensive medication (labetalol, hydralazine, or nifedipine).

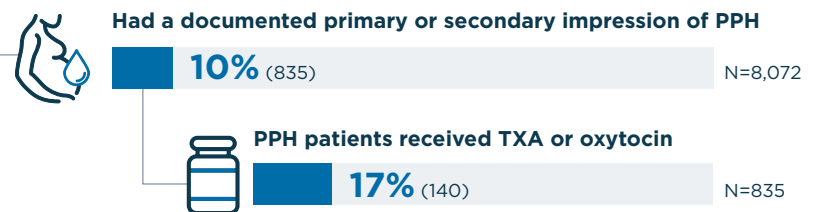
59,212 Encounters with patients 20+ weeks gestation



OPERATIONAL DEFINITION: POSTPARTUM HEMORRHAGE

This measure encompasses all 911 responses related to labor and delivery in which the patient had a documented primary or secondary impression of postpartum or immediate postpartum hemorrhage (PPH).

8,072 911 responses related to labor and delivery





CONTEXT

In April 2025, [ACOG released three model EMS guidelines](#) for prehospital obstetric emergencies, developed in collaboration with NAEMSP and shaped by input from EMS physicians, paramedics, EMTs, and OB-GYNs.⁷ The guidelines cover elevated blood pressure in pregnancy and postpartum, eclampsia, and postpartum hemorrhage.

Here's the big shift: Systolic at or above 160 mmHg or diastolic at or above 110 mmHg now triggers antihypertensive treatment within 30 to 60 minutes – regardless of symptoms. No waiting for headache, visual changes, or other warning signs.⁸ The number alone is the indication. For providers trained to correlate treatment with clinical presentation, that's a significant mental model change.

The data shows where the opportunity lies. In this dataset, the treatment rate for severe hypertension in pregnancy holds at 5% - virtually unchanged from the prior year. For postpartum hemorrhage, 17% of patients received TXA or oxytocin. These two measures represent a system-wide gap that protocols, formularies, and medical direction will need to close together.

These numbers reflect system realities: Protocols that predate the new guidelines, medications not yet added to formularies, and approval processes that can lag years behind published evidence. Changing a protocol in most communities means navigating medical oversight, hospital coordination, and state-level approval, all of which takes time, even with urgency.

Patient-centered obstetric care means building systems that get the right resource to the right patient at the right time, whether that's an ALS unit with the medications on board, early notification so the receiving facility is ready, or protocols that ensure someone in the care chain can deliver what the guidelines recommend.

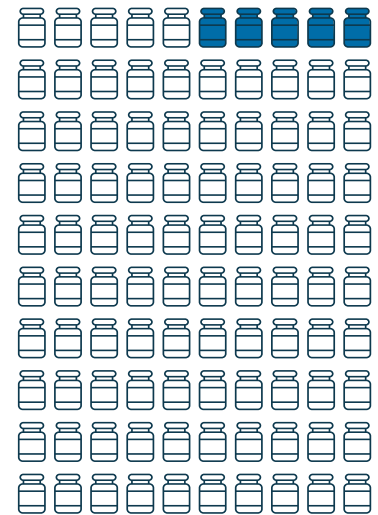
The gap between evidence and execution – that's where improvement lives.

FIGURE M2-1

Treatment rate of patients who received magnesium sulfate or antihypertensive medications

Of 7,624 patients meeting the ACOG threshold for severe hypertension in pregnancy, 362 received magnesium sulfate or antihypertensive medications – a 5% treatment rate that has not meaningfully changed from the prior year's Index, pointing to a persistent systems-level gap in medication availability and protocol adoption rather than a single-year anomaly.

5%



MEASURE 2

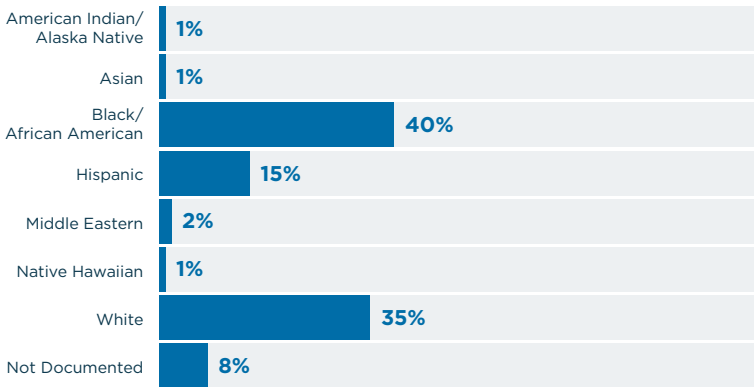


METHODOLOGY

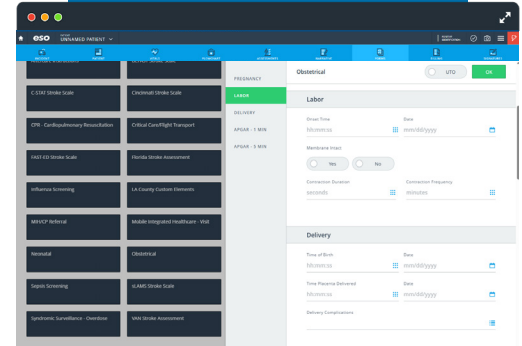
Race and ethnicity data is reported per JAMA 2021 guidance: alphabetical ordering, no aggregation into an “Other” category, cell sizes under 10 suppressed, and groups with sample sizes of 10 to 49 reported as counts only. More than one race or ethnicity may be documented for a patient.¹⁷

FIGURE M2-2
Race and ethnicity distribution of pregnant patients

Black patients represented 40% of all 911 responses involving a pregnant patient in this dataset, the largest single racial or ethnic group within this cohort and one that carries disproportionate maternal mortality risk nationally.



911 Responses among Pregnant Patients = 112,502.
More than one race or ethnicity may be documented for a patient.



ESO IN ACTION

Track it. Measure it. Close the loop.

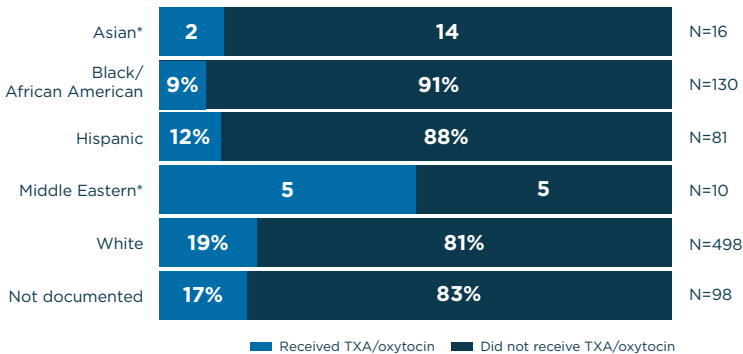
ESO EHR captures obstetric emergencies in the standard clinical workflow. **ESO Insights** benchmarks maternal protocol adherence against national guidelines.

And **Health Data Exchange** connects your prehospital care to hospital outcomes – so you know whether early intervention made the difference.

[READ MORE](#)

FIGURE M2-3
TXA or oxytocin administration among patients with documented postpartum hemorrhage, by race and ethnicity

TXA and oxytocin administration rates varied across documented race and ethnicity groups. Among groups with sample sizes of 50 or more, Black or African American patients received treatment in 9% of PPH encounters (12 of 130), Hispanic or Latino patients in 12% (10 of 81) and White patients in 19% (95 of 498). Asian patients (N=16, 2 treated) and Middle Eastern patients (N=10, 5 treated) are reported as counts only due to sample sizes between 10 and 49. Groups with fewer than 10 documented PPH encounters are suppressed to protect patient identity. Race and ethnicity data is reported as documented in the patient care record; documentation was absent in 98 encounters.



*Groups with 10-49 documented PPH encounters are displayed as counts only; percentages are omitted to avoid overstating patterns from small samples. Groups with fewer than 10 encounters are excluded. “Not documented” reflects encounters with no race/ethnicity recorded.



BEST PRACTICES

1 Coordinate across the care chain.

The time to plan for obstetric emergencies is before the call comes in. Start by auditing your formulary against current ACOG guidance: Which units carry antihypertensives, TXA, magnesium, oxytocin? Where are the gaps?

Then build the bridges. Establish notification protocols for severe maternal hypertension so receiving facilities can mobilize before arrival. Many hospitals route pregnant patients directly to L&D, bypassing the ED; confirm there's a plan for communicating incoming EMS patients before the ambulance pulls in. And if BLS units are your primary obstetric responders, build intercept or mutual aid agreements now so ALS resources are available when the clinical picture demands it.



2 The guidelines have changed – has your formulary?

Magnesium sulfate alone no longer meets the standard. Current ACOG guidance calls for antihypertensives appropriate for pregnant and postpartum patients and oxytocin for postpartum hemorrhage. Review what's stocked on your units, and make sure protocols reflect what crews can deliver.

3 Equity deserves scrutiny – and rigor.

Examine whether maternal emergency treatment rates differ by patient demographics, but be cautious with small numbers. A few encounters won't tell a reliable story. Look for patterns at the system level, and keep the focus where it belongs: ensuring every patient gets ACOG-aligned care.



Prehospital blood administration

KEY FINDING

The 2026 dataset captured 2,993 prehospital blood product administrations across 193 agencies, one of the largest published prehospital transfusion datasets.



2,993

Blood administrations



OPERATIONAL DEFINITION

This measure includes all ground 911 encounters in which any blood product was administered in the prehospital setting, including whole blood, packed red blood cells, never-frozen plasma, fresh-frozen plasma, platelets, and other products.

489

GI hemorrhage as top clinical impression

CONTEXT

Prehospital blood administration has come a long way in recent years. What began as a battlefield intervention migrated to a handful of civilian EMS agencies willing to take on the logistical complexity of cold chain management, medical direction, and blood bank partnerships. Today, programs are expanding and the patient population receiving prehospital blood is expanding with them.

Of the 2,993 qualifying administrations in this dataset, 60% involved trauma patients, 35% involved medical patients, and 5% were coded as both. Among injured patients, the mechanism split was nearly even with 46% blunt, 47% penetrating. That's a striking contrast to the in-hospital pattern documented in the 2026 ESO Trauma Index, where blunt trauma accounts for nearly 80% of blood product recipients. Part of that difference likely reflects aggressive field identification and treatment of penetrating trauma, but there's another possibility worth considering: Prehospital blood may be extending the window for critically injured penetrating trauma patients who would have otherwise deteriorated before reaching the operating room (OR).



FIGURE M3-1
Medical vs. Trauma encounter type

Of the 2,993 prehospital blood administrations in this dataset, 60% involved trauma patients, 35% involved medical patients, and 5% were coded as both. One in three recipients had no documented injury, a sign that prehospital blood has moved well beyond its trauma origins.

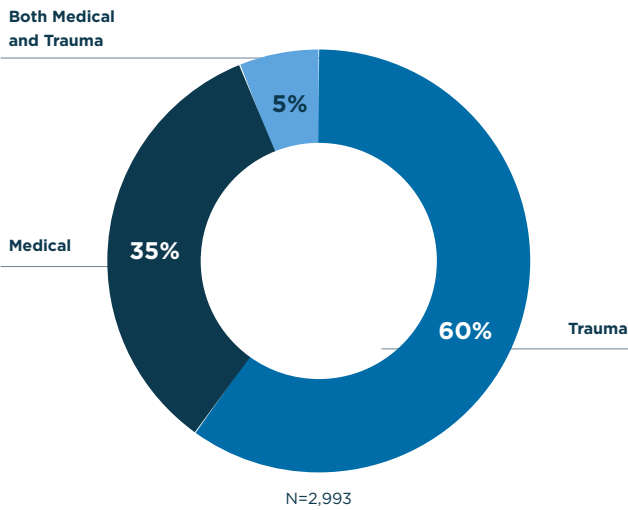


FIGURE M3-2
Injury mechanism among trauma patients receiving prehospital blood

Among trauma patients, the injury mechanism split is nearly even - challenging the assumption that prehospital blood is primarily a penetrating trauma intervention. Penetrating injuries often present with obvious hemorrhage, making the decision to transfuse more straightforward. Blunt trauma patients may be harder to identify in the field, creating potential missed opportunities for early intervention.

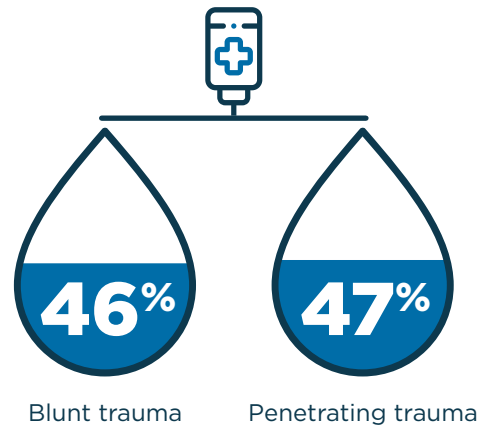
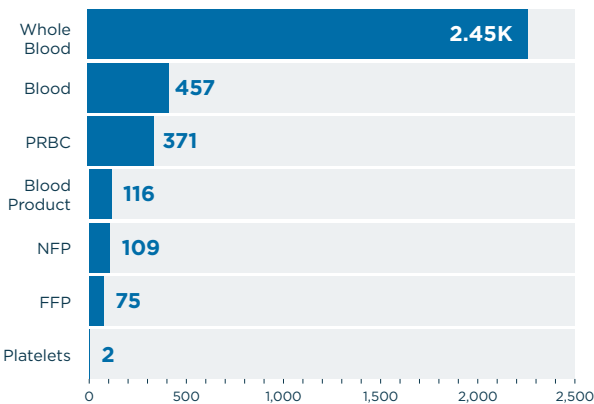


FIGURE M3-3
Blood product type distribution in prehospital administration

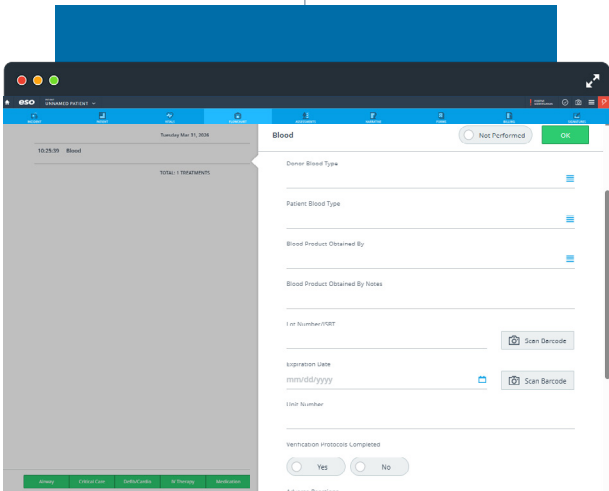
Whole blood has become the dominant product in prehospital transfusion, a reversal of in-hospital patterns where packed red blood cells remain the leading product used. The shift reflects both logistical pragmatism and [growing clinical evidence](#).⁹



EXPERT VOICE

- Jon R Krohmer, MD, FACEP, FAEMS
Chair of the Prehospital Blood Transfusion Coalition

“The first thing that EMS agencies need to do when thinking about starting a transfusion program is run a systems analysis to determine the potential patient population that would require transfusions in the field. That means considering trauma, medical, and obstetric patients alike, across all age groups. Not all EMS agencies have the patient population to support a transfusion program on their own, which is why regional approaches should be considered. Agencies should then work with their stakeholders, including the blood community, to evaluate which blood components make sense for their system - whether that’s whole blood, packed red blood cells, liquid plasma or other products.”



ESO IN ACTION

From dispatch to outcome. ESO Health Data Exchange links prehospital blood administration documentation to hospital outcomes through the **Patient Registry** – giving agencies visibility into the full transfusion chain, from field intervention to definitive care. Dedicated blood bank fields in the EHR replace paper-based transfusion forms, and built-in support within **Insights** for the Early Blood Transfusion Needs Score helps evaluate potentially eligible patients.

READ MORE

BEST PRACTICES

1

Start the prehospital blood program conversation.

If you don't have a prehospital blood program, use existing resources. The delivery model can vary from ambulance, supervisor vehicle, helicopter, drone, to something else entirely. What matters is finding what works for your community. The clinical case for early transfusion continues to build, and the logistical barriers that once limited these programs are increasingly solvable.

2

Measure what matters and manage what's scarce.

Because earlier transfusion is consistently linked to improved survival, agencies that track time to transfusion can identify delays and drive faster care.¹⁰ But speed isn't the only metric. Blood is a precious resource, and sustainable programs require disciplined cold chain management, product rotation, and clear wastage protocols. These aren't afterthoughts – they're operational essentials.

3

Join the network and (literally) get on the map.

Agencies administering prehospital blood should register with the [Prehospital Blood Transfusion Coalition's interactive map](#) that provides a visual representation of ground EMS agencies with blood transfusion programs in the U.S.¹¹ Registration contributes to national visibility, connects you with peer programs facing similar challenges, and unlocks implementation resources built specifically for EMS – whether you're just launching or looking to scale.



Repeat patient encounters

KEY FINDING

Across 8.8 million unique patients identified through ESO’s Longitudinal Patient Record, 81% called 911 once. That group generated 56% of all 911 responses. The remaining 19% were repeat patients, which drove 44% of all 911 responses. Within that group, 157K patients had six or more 911 responses.

157K
Unique patients had



OPERATIONAL DEFINITION

This measure uses ESO’s longitudinal patient record to identify patients with more than one EMS encounter within the calendar year. A high utilizer is defined as a patient with six or more EMS encounters within a 12-month period, as no consensus definition exists in the published literature.

8.8M

Unique patients

19%

Repeat patients (1.7M patients)

44%

Of all 911 responses from repeat patients

CONTEXT

EMS systems often talk about “high utilizers,” but the framing matters. These are patients returning to a system that, for many, is the most accessible point of entry into healthcare. Understanding who they are and why they call is the first step toward building something better.

In this dataset, one in five patients drove nearly half of all 911 responses. The top dispatch complaints among repeat patients tell a consistent story: sick person, falls, breathing problems, chest pain, and convulsions. These aren’t signals of system abuse – they’re markers of chronic conditions, mobility challenges, and recurring medical needs. These patients are using the system available to them.

The opportunity is to match these patients with the right resource. Community paramedicine, chronic disease management programs, and alternative care pathways can address underlying needs in ways that a recurring cycle of 911 calls and ED transports cannot. For many of these patients, the best response isn’t an ambulance: It’s a system designed to meet them where they are.



MEASURE 4

FIGURE M4-1

911 response concentration among one-time and repeat patients

8.8M unique patients generated 12.6M 911 responses. A relatively small share of these patients drives a disproportionate share of system demand. Identifying this population through longitudinal patient tracking is the prerequisite for designing care interventions that address underlying needs rather than managing each encounter as an isolated event.

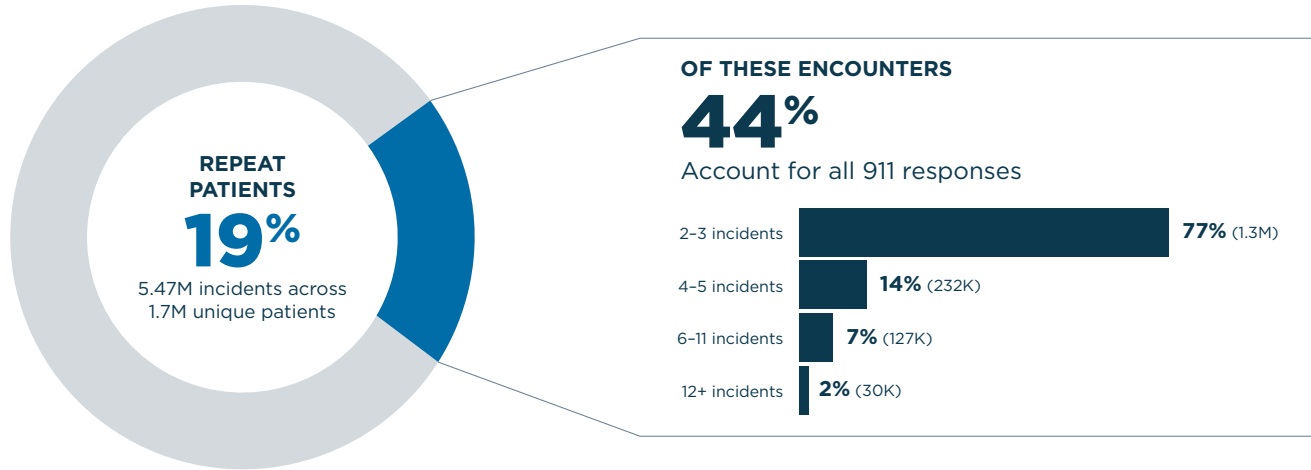
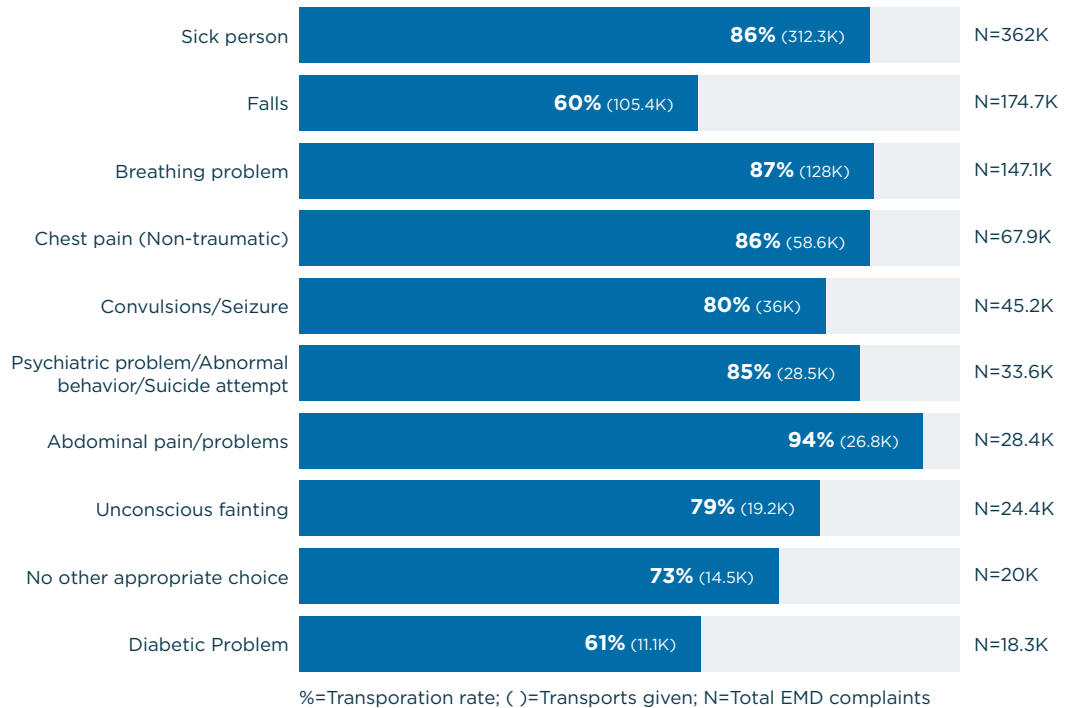


FIGURE M4-2

Transport rates by most common EMD complaints among repeat patients

The most common dispatch complaints among repeat patients reflect patients with chronic conditions and recurring medical needs who are using the system available to them. Transport rates vary significantly by condition, from 60% and 61% for falls and diabetic problems, respectively, to 94% for abdominal pain. Understanding which repeat patient populations are transported and which are treated on scene gives agencies a starting point to evaluate where care coordination or community-based referral pathways could reduce repeat utilization without compromising care for patients who require emergency transport.





BEST PRACTICES

1 Start with the data.

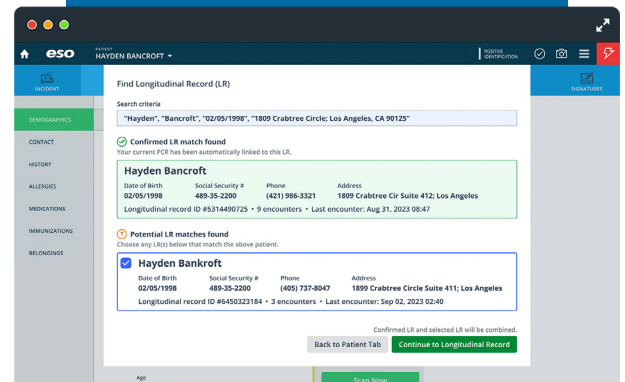
Which patients are calling more than once in a calendar year, and what are they calling for? The top dispatch complaints in this dataset (sick person, falls, breathing problems, chest pain, convulsions) paint a clear picture: chronic disease, mobility issues, recurring needs. Designing effective interventions starts with understanding who these patients are and what's driving them back to 911.

2 Drop the “frequent flyer” mindset.

Labeling repeat patients as “frequent flyers” or “system abusers” closes doors. These patients have needs the current system isn't meeting. Dig into the data: Which conditions drive repeat volume, which patients get transported, and where might a community paramedicine referral or alternative care pathway serve them better than another trip to the ED? Consider phrases such as “high-utilizer patients,” “patients with recurring EMS needs,” or “frequent EMS users” instead.

3 Track the patient, not just the incident.

Patient-centered care needs patient-centered data. [EMS 2050](#) envisions a profession built around the patient, not the incident.¹² But without a persistent patient identifier, repeat patients disappear into a sea of seemingly unrelated calls. Longitudinal tracking reveals the patterns, and the opportunities, that single-incident reports can't. It's the foundation for delivering on the promise of where EMS is headed.



ESO IN ACTION

See the patient, not just the encounter. ESO's **Longitudinal Patient Record** assigns a persistent patient identifier across encounters, and the **Health Data Exchange Enterprise Master Patient Index** links those encounters at scale – enabling exactly the kind of cross-encounter analysis this measure demonstrates. As a result, agencies can spot repeat utilization patterns, flag patients who might benefit from community paramedicine, and design care pathways based on a full history rather than a single 911 call.

[READ MORE](#)



Pediatric behavioral health

KEY FINDING

Behavioral health accounts for nearly one in 10 pediatric 911 EMS encounters: 80,084 of 850,638 in this dataset. Most are managed without pharmacologic intervention: Less than 2% involved emergent sedation. Among those that did, only 26% included a documented agitation score – an emerging opportunity as structured scoring tools become more integrated into prehospital workflows. Overall, 12% of encounters occurred at schools, where consent and guardian notification add layers of complexity.

OPERATIONAL DEFINITION

This measure includes 911 EMS encounters in which the patient was under 18 years of age and the primary clinical impression was behavioral health-related. Age groups are defined as infants under 1 year, toddlers ages 1 to 4, school-age children ages 5 to 12, and adolescents ages 13 to 17.

80,084

Pediatric
BH encounters

12%

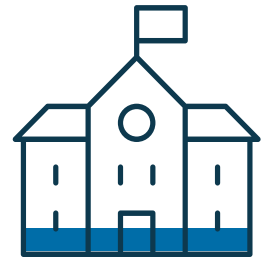
Of encounters
occurred at schools

2%

Involved
emergent
sedation

26%

Of patients emergently
sedated had an agitation
score documented



CONTEXT

Youth behavioral health has become a national priority and a growing part of EMS response. Emergency department visits for pediatric behavioral health emergencies have surged in recent years, and EMS is often the first point of clinical contact for children and adolescents in crisis. Prehospital data offers an early window into how these emergencies present in the field, where crews are intervening, and whether documentation practices are keeping pace with the clinical moment.

The numbers in this dataset underscore the scale. Behavioral health accounts for 9% of all pediatric EMS encounters, rising to 17% among adolescents. These aren't rare calls: They're a consistent and significant part of pediatric response.

MEASURE 5

Structured agitation scoring is an emerging opportunity. Of 1,325 encounters involving emergent sedation, just 346 (26%) had a documented agitation score. Measuring and tracking agitation levels, both before and after sedation, gives crews objective data to guide intervention and evaluate response. The tools are relatively new to prehospital documentation: Both BARS and RASS are now adapted and built into ESO's EHR, though neither was originally designed for the prehospital environment. BARS originated in pharmaceutical trials for psychiatric medications; RASS was developed for ICU sedation monitoring. As the field explores which instruments best fit prehospital behavioral emergencies, there's room to grow: The peak benchmark sits at 35%, with median agency performance at 18%.

The 12% of encounters occurring at schools adds another layer of complexity for EMS. When a pediatric behavioral emergency unfolds on school grounds and no parent or guardian is present, crews face difficult questions about consent, often in time-critical situations where delays can escalate risk. State laws vary widely, and the answers aren't always clear in the moment. Agencies should work through these scenarios with medical direction and legal counsel to formulate clear protocols, so crews aren't sorting it out on scene.

FIGURE M5-1

Sex distribution by age category

Adolescent behavioral emergencies often present differently than adult or younger pediatric calls, and crews benefit from training that addresses developmental considerations, communication techniques, and the legal landscape around treating minors.

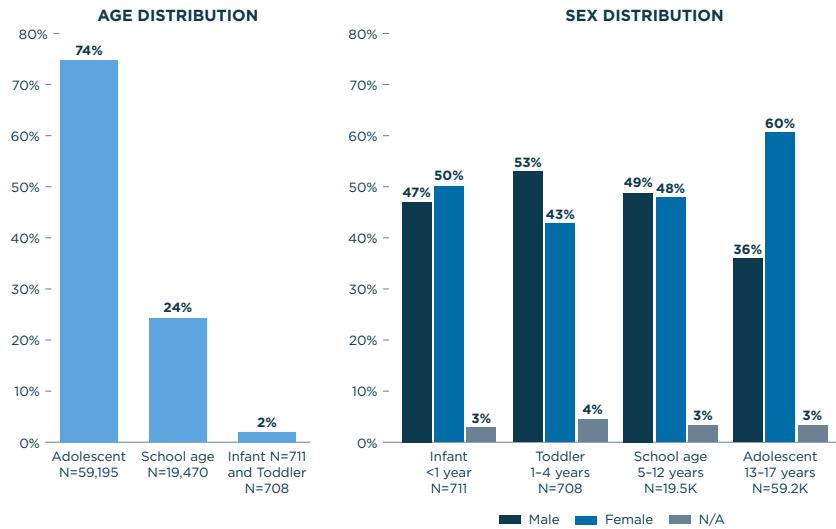
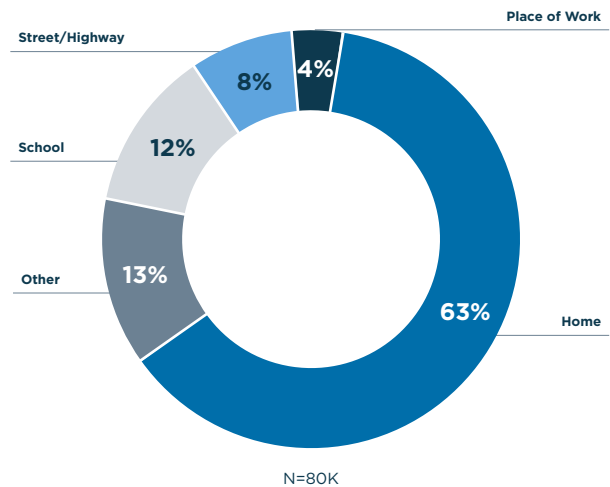


FIGURE M5-2

Encounter location for pediatric behavioral health responses

Nearly two-thirds of pediatric behavioral health encounters happen at home. Schools account for 12% of scene locations, a share that may seem small but represents thousands of encounters annually where the clinical and legal picture looks meaningfully different than a response in the patient's home.





EMERGENT SEDATION AND AGITATION DOCUMENTATION

Emergent sedation – the intramuscular administration of a benzodiazepine, ketamine, or antipsychotic – is reserved for situations when verbal de-escalation has been unsuccessful and a patient poses an immediate risk to themselves or others. It’s not a routine tool, and the decision to sedate a pediatric patient in the field carries significant clinical and ethical weight. Done well, it protects the patient and crew while enabling transport to definitive care. Done poorly – or without proper assessment – it introduces serious risk.

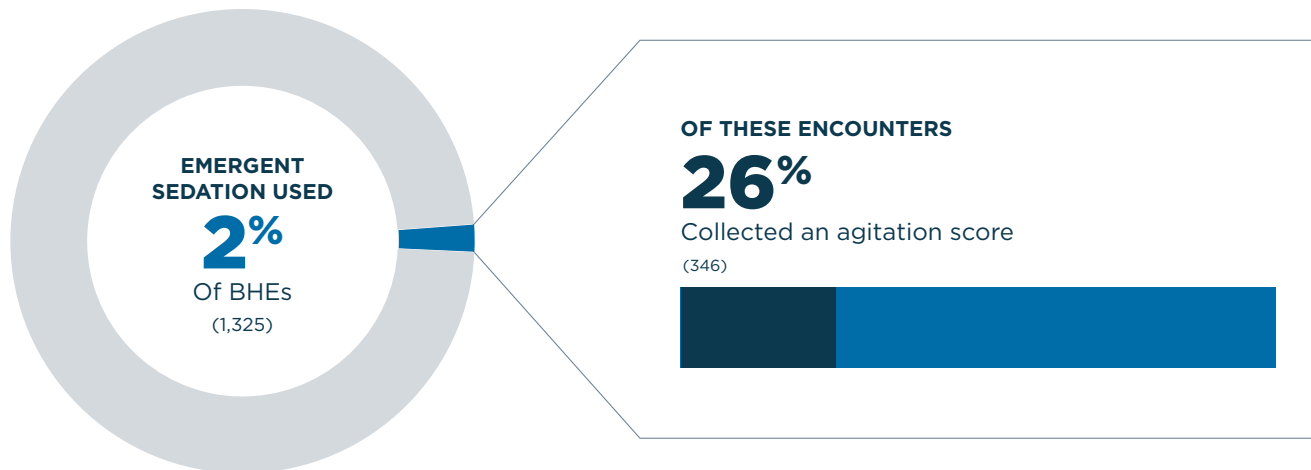
Of the 80,084 pediatric behavioral health encounters in this dataset, 1,325 (<2%) involved emergent sedation. How agencies document and evaluate these high-acuity encounters is the focus of this section.

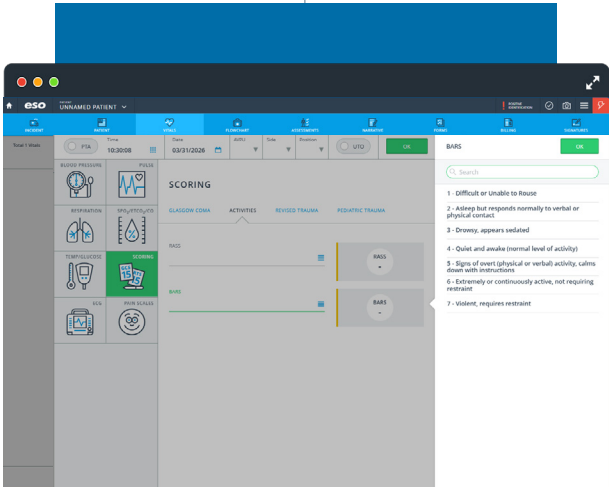


FIGURE M5-3

Agitation scoring documentation among encounters with emergent sedation

The funnel tells the story: 80,084 pediatric behavioral health encounters narrow to 1,325 involving emergent sedation, and just 346 of those include a documented agitation score. That 26% rate reflects where the field is today, with structured scoring tools only recently available in prehospital documentation systems. The gap may be partly clinical adoption, partly workflow integration, or both. Either way, the opportunity is the same: Build agitation scoring into the routine so crews have objective data to guide intervention and evaluate response.





ESO IN ACTION

The tools are in place. BARS and RASS scales are built into **ESO EHR** for pre- and post-sedation scoring. Weight-based dosing is supported through Broselow categories and integrations with OneDose and Handtevy. And **ESO Insights** offers age-filtered reporting to help agencies track pediatric behavioral health trends and documentation rates. The infrastructure is here ready to serve your workflows.

READ MORE

BEST PRACTICES

1 Make agitation scoring routine.

A quick BARS or RASS score before and after sedation turns clinical judgment into objective documentation – useful for quality review, medical direction, and continuity of care. Both scales are available in ESO’s EHR. With 74% of emergent sedation encounters missing a documented score, even small changes in workflow can move the needle.

2 Build a system to get dosing right.

Weight-based dosing matters, especially when administering sedatives. Agencies should ensure a pediatric dosing approach is in place and that crews are trained to use it consistently. Just as important: Build a culture where errors and near misses can be reported and analyzed through a systems lens, not individual blame. Medication safety improves when agencies treat dosing errors as opportunities to strengthen workflows rather than blame individuals.

3 Plan for school-based encounters.

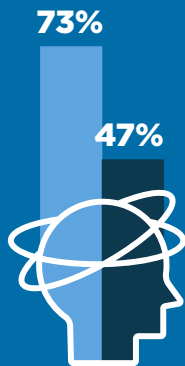
When a pediatric behavioral emergency happens on school grounds, crews shouldn’t be navigating legal questions in the middle of patient care. State laws on treating minors without parental consent vary widely. What’s permissible in one jurisdiction may not be in another. Work with medical direction and legal counsel to develop protocols that address consent and guardian notification before the next call comes in.



Stroke recognition at dispatch

KEY FINDING

Dispatch recognition matters. When dispatchers identified a patient with stroke, EMS clinicians recognized stroke 73% of the time and completed the stroke bundle at nearly the same rate (72%). When the call came in under a different category, both numbers dropped to 47%. The pattern is clear: What happens in the first seconds of the 911 call sets the tone for everything that follows.



EMS recognition when dispatch flagged stroke

EMS recognition when dispatch did not flag

OPERATIONAL DEFINITION

This measure examines 911 responses involving adult patients with an emergency department-confirmed ischemic stroke diagnosis for whom emergency medical dispatch data was also available. This measure is new to the 2026 ESO EMS Index.

13,700

ED-confirmed stroke encounters with EMD data

50% Stroke flagged by dispatch



CONTEXT

The stroke chain of survival starts before the ambulance rolls. For most patients, the first link is the 911 call, and when dispatch recognizes stroke early, positive diagnostic momentum builds. The crew arrives expecting a time-critical neurological emergency, the stroke bundle gets completed, the patient is transported to a facility with the right capabilities, and the best possible outcome becomes more likely: a patient who goes home without deficit.

In this dataset, whether dispatch identified the call as a potential stroke was strongly associated with stroke bundle performance. EMS clinicians documented stroke as a primary impression in 62% of qualifying encounters overall, and the peak benchmark for stroke bundle completion is 81%. That recognition rate tracked closely with how the call was categorized at dispatch - a signal that what happens in the first seconds of the 911 call matters all the way through to patient outcome.

Stroke symptoms don't always announce themselves clearly, however. Patients may report a fall, a headache, altered mental status, or general weakness - complaints that map to non-stroke EMD categories. The caller may not recognize or describe the neurological signs that would

MEASURE 6

trigger a stroke protocol, and the dispatcher is working from a scripted decision tree built on the information provided. Improve early stroke recognition by training dispatchers to catch subtle cues, updating decision trees for atypical presentations, and creating feedback loops to drive continuous improvement.

FIGURE M6-1 EMS stroke recognition and bundle completion by dispatch identification

The numbers tell the story. When dispatch recognized stroke, EMS providers suspected stroke 73% of the time and completed the stroke bundle at the same rate (72%). When the call came in under a different category, both figures fell to 47%. Early recognition at the 911 call matters - it's how the stroke chain of survival kicks into gear.

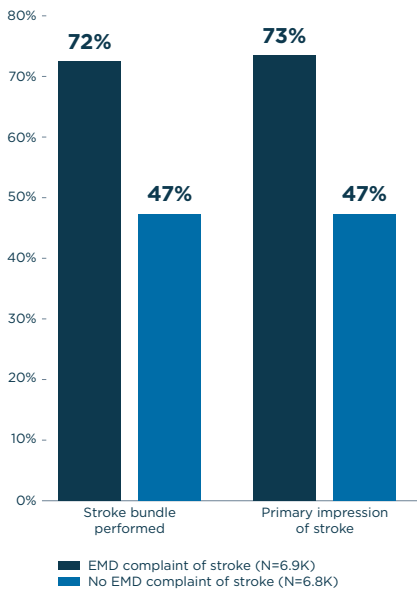


FIGURE M6-2 Stroke bundle performance over time (2023-2025)

Progress is steady. Among ED-verified stroke patients, stroke bundle completion has climbed from 53% in 2023 to 59% in 2025 - with monthly performance reaching 62% at its peak. The trajectory shows that system-level improvements are taking hold, and there's still room to grow.

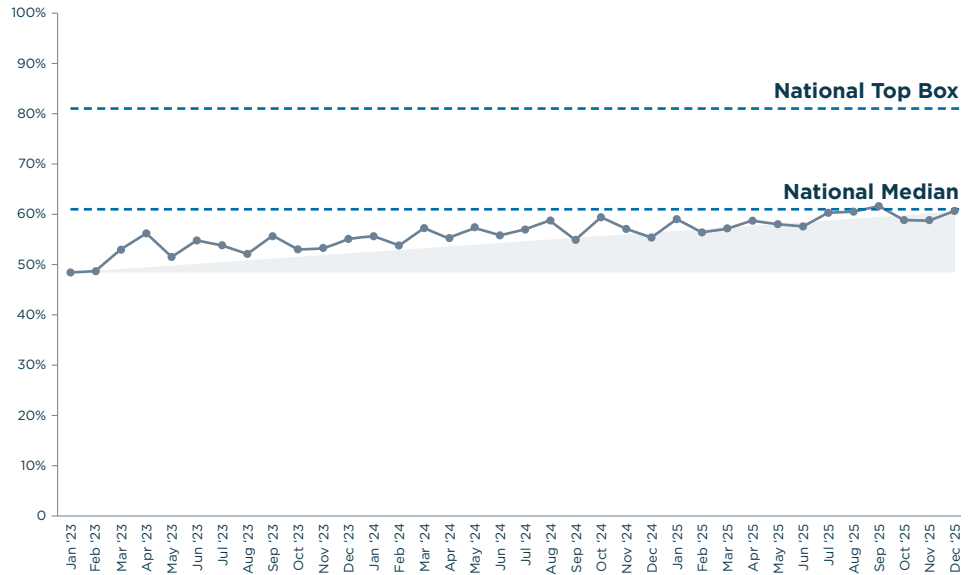
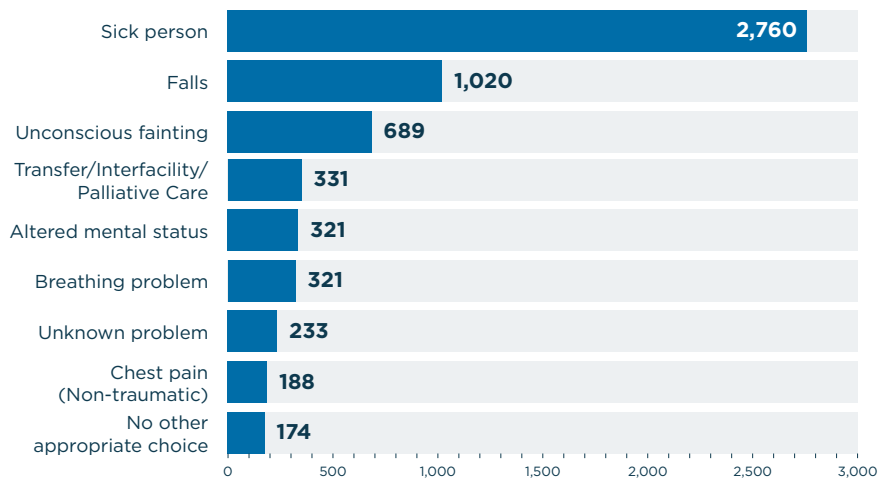


FIGURE M6-3 Top EMD complaints among ED-confirmed stroke patients not flagged as stroke at dispatch

These are the calls that didn't start as stroke. Among ED-confirmed stroke patients not flagged at dispatch, the most common categories (falls, general weakness, altered mental status) show what dispatchers were hearing. For callers and dispatchers alike, the classic stroke presentation isn't always what comes through on the line. Improving recognition means understanding how these calls present and where process refinements might help.





BEST PRACTICES

1 Start at the 911 call.

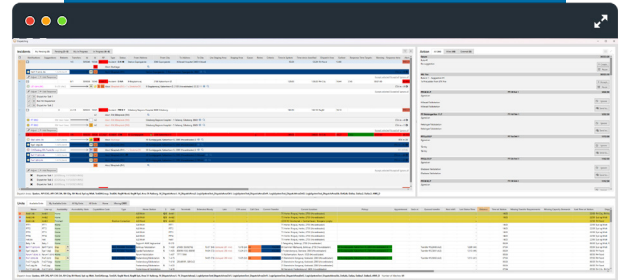
Dispatch identification of stroke is associated with measurably higher EMS recognition and stroke bundle performance downstream. Review your EMD protocols for stroke recognition, invest in dispatcher education, and build quality feedback loops that connect dispatch decisions to clinical outcomes. The stroke chain of survival starts with the call; make sure your systems are optimized to catch it.

2 Give dispatchers the rest of the story.

They're the first clinical contact, but most never find out how the call ended. Closing the feedback loop, sharing stroke confirmations, bundle completion, and patient outcomes back to dispatch transforms quality improvement from abstract to actionable. When dispatchers see the impact of early recognition, the whole chain gets stronger.

3 Prepare for what's next.

AI-enhanced dispatch tools are already here. Video triage and camera-based monitoring are improving cardiac arrest recognition, and AI-powered stroke detection, capable of identifying speech changes and other subtle cues during the 911 call is emerging.^{13,14,15} As these technologies mature and spread, agencies with strong data infrastructure and dispatch-to-outcome feedback loops will be best positioned to integrate them effectively.



ESO IN ACTION

The whole chain, connected.

This analysis is only possible because ESO links the continuum from dispatch to discharge. **Logis Dispatch** captures the initial complaint. **EHR** tracks clinical assessments and stroke bundle completion. **Alerting** triggers real-time stroke notifications to the receiving facility. **ESO Insights** brings it all together with stroke-specific dashboards for EMS-suspected stroke and confirmed stroke diagnosed at the ED. When dispatch teams can see how their calls played out clinically, the feedback loop closes and recognition improves.

[READ MORE](#)



Syncope-01 (NEMSQA)

KEY FINDING

The overall 12-lead ECG acquisition rate for syncope patients was 59%. But the aggregate masks an important gap: Patients under 45 had just a 46% acquisition rate, the lowest of any age group. Younger patients may seem lower risk, but conditions like long QT, WPW, and hypertrophic cardiomyopathy don't follow that assumption. The non-transport data adds urgency: Among patients who were not transported by EMS, 42% did not receive a 12-lead. When a patient isn't going to the hospital, the 12-lead is what stands between a good assessment and a missed diagnosis.

OPERATIONAL DEFINITION

As a proud partner of the National EMS Quality Alliance (NEMSQA) since 2021, ESO is committed to advancing EMS quality measurement. This measure aligns with the NEMSQA Syncope-01 quality measure, which tracks 12-lead ECG acquisition rates among 911 patients presenting with syncope.¹⁶ This measure reflects aggregate performance from agencies in the ESO Data Collaborative and is new to the 2026 EMS Index. Pediatric encounters are broken out separately by age group: under 1, ages 1 to 4, ages 5 to 12, and ages 13 to 17.

59%

12-lead ECG rate
(overall)

84%

Peak Benchmark
Performance

46%

ECG rate for
patients under 45

CONTEXT

Syncope often presents a diagnostic puzzle. The patient who “just fainted” may have experienced a vasovagal episode or may be walking around with an undiagnosed cardiac condition that could kill them. The differential includes long QT syndrome, Wolff-Parkinson-White (WPW), Brugada syndrome, and hypertrophic cardiomyopathy, conditions that don't announce themselves with ongoing symptoms and can affect patients at any age. The 12-lead ECG is the window into what's happening electrically when the patient looks and feels fine.

The challenge is that syncope often gets dismissed, especially in younger patients. It's easy to attribute a fainting spell to dehydration, stress, or “just vasovagal,” but that assumption can miss a lethal arrhythmia waiting to happen. And when syncope overlaps with possible seizure activity, the diagnostic picture gets even murkier. An ECG won't solve every question, but it may help rule out or rule in



cardiac causes that shift the clinical picture. That’s why NEMSQA established Syncope-01 as a national performance measure: Every patient presenting with syncope should receive a 12-lead ECG, regardless of age or transport decision.

In this dataset, 563,724 encounters met inclusion criteria. The overall ECG acquisition rate was 59%, but that number masks important variation. Patients under 45 received 12-lead ECGs only 46% of the time, well below the 54% median agency performance, despite potential risk of missed cardiac abnormalities and structural heart disease.

The non-transport finding adds urgency. Among patients who were not transported, only 42% received a 12-lead compared to 65% among patients who were transported by EMS. For patients who decline transport, a thorough assessment is especially critical as an ECG may reveal findings that change the patient’s decision, and completing the workup reduces risk for both the patient and the agency.

FIGURE M7-1

12-lead ECG acquisition rate for syncope patients by age group

The age gradient tells a cautionary story. ECG acquisition was lowest in patients under 45 – the same population where conditions like long QT, WPW, and hypertrophic cardiomyopathy are most likely to go undetected. A young patient who “just fainted” still deserves a look at what’s happening electrically.

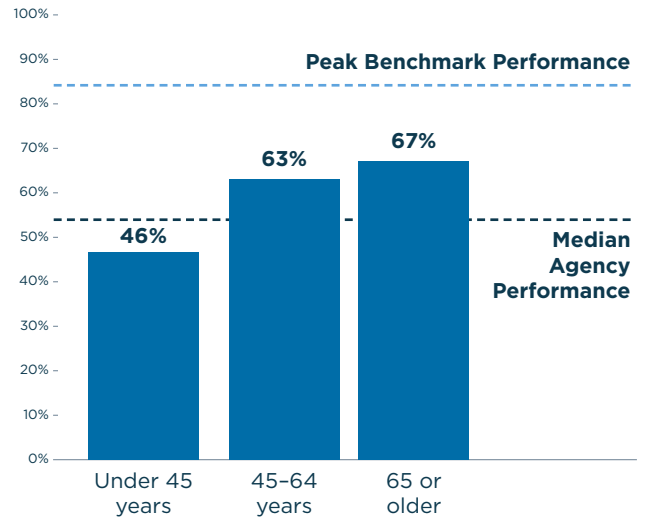


FIGURE M7-2

12-lead ECG acquisition rate by transport status

Among patients who were not transported, an ECG was captured 42% of the time compared to 65% among those who were transported. The gap underscores a clinical risk: Non-transported syncope patients are the ones most likely to leave without a diagnosis – and most likely to leave without the one test that could catch it.

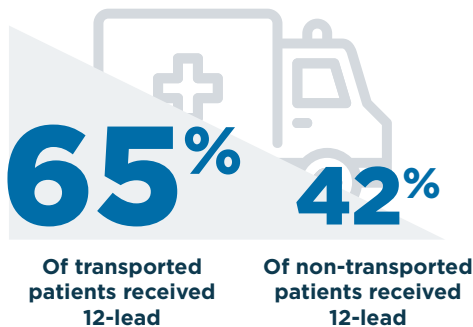
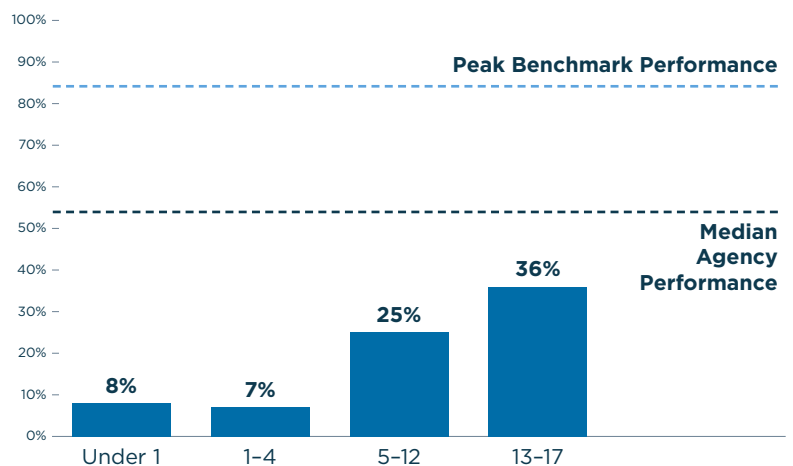
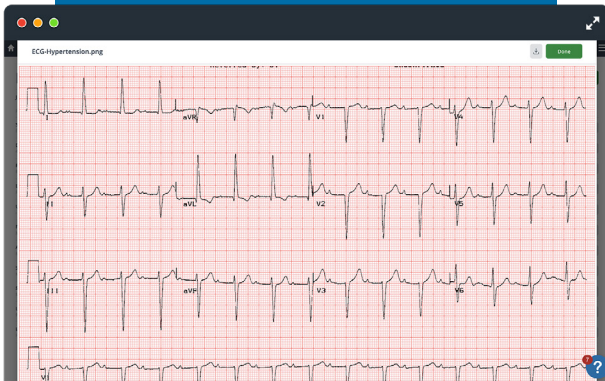


FIGURE M7-3

Pediatric syncope 12-lead ECG acquisition rate by age group

Pediatric ECG acquisition rates trail adults across the board – partly reflecting the practical challenges of obtaining a 12-lead in younger patients, partly reflecting lower perceived cardiac risk. But perceived risk isn’t the same as actual risk. Adolescents can and do have arrhythmias and structural heart conditions. At 36%, there’s opportunity to close the gap.





ESO IN ACTION

Syncope to 12-lead, simplified. ESO EHR integrates 12-lead ECG capture directly into the clinical workflow, and a prebuilt **Insights** global dashboard for NEMSQA Syncope-01 lets agencies compare their ECG acquisition rates against the national aggregate from this measure.

[READ MORE](#)

BEST PRACTICES

1 Give every patient with syncope a 12-lead.

It's non-invasive, the equipment is already on the truck, and it surfaces cardiac conditions that clinical assessment alone can miss. A patient who "just fainted" may be one missed diagnosis away from sudden cardiac death.

2 Close the age assessment gap.

Patients under 45 had the lowest ECG acquisition rate at 46% – yet they're the population most likely to have undiagnosed conditions like long QT syndrome, WPW, or hypertrophic cardiomyopathy. A young patient who looks healthy and feels fine after fainting can still be at risk. The 12-lead is what keeps that assumption from becoming a missed diagnosis.

3 Evaluate 12-lead acquisition on non-transported patients.

Only 42% of non-transported syncope patients received a 12-lead, compared to 65% of transported patients. The decision not to transport is a medical decision and, like any medical decision, it requires clinical information to be defensible. For a syncope patient, that means a 12-lead. It may reveal a finding that changes the patient's mind about transport. And if it doesn't, it's documentation that the right assessment was done.

Conclusion



Every data point in this Index traces back to a patient – someone experiencing the worst moment of their day, trusting the system to get it right. The person struggling with opioid use disorder who encounters a crew ready to connect them to treatment. The mother whose postpartum bleeding gets recognized and managed before it becomes catastrophic. The patient whose “fainting spell” turns out to be the first sign of a cardiac condition they didn’t know they had. These measures matter because the patients behind them matter.

What this Index reveals, again and again, is that improvement lives at the system level. The 5% severe hypertension treatment rate in obstetric emergencies reflects formulary and protocol lag, not individual clinician shortcomings. The age-based gap in syncope ECG acquisition reflects assumptions about risk that have become embedded in practice. The growth of prehospital buprenorphine points to programs gaining traction, not isolated decisions. In each case, the findings show where systems-level change can have the most impact – and where agencies can focus their energy.

Each edition of the EMS Index builds on the evidence base in prehospital care, offering new benchmarks to measure against and new questions to bring back to your own operations. Repeat patient analysis is only possible because ESO Longitudinal Record links encounters over time. Stroke recognition at dispatch is only visible because ESO connects dispatch records to hospital outcomes. As the dataset grows, so does its power to drive the outcomes it was built to improve.

The opportunity is yours. How will you improve the system?

ACKNOWLEDGMENTS

The 2026 ESO EMS Index was produced by the ESO Research and Performance Improvement team. The authors thank the thousands of EMS agencies that contribute data to the ESO Data Collaborative and the medical professionals whose documentation makes this analysis possible.

ESO Clinical review: Dr. Brent Myers, MD, MPH, Chief Medical Officer. ESO Research and Data Analysis: Remle Crowe, PhD, NREMT, Senior Director of Research and Data Enablement; Antonio R. Fernandez, PhD, NRP, Principal Research Scientist; Alyssa Green, MS, EMT-P, Principal Data Enablement Strategist; Ali Treichel, MPH, Research Program Lead.

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METHODOLOGY

Data for the 2026 ESO EMS Index was compiled from agencies participating in the ESO Data Collaborative for calendar year 2025. The Collaborative includes agencies using ESO's Electronic Health Record platform and agencies using other patient care reporting systems that contribute data under a health data exchange data sharing agreement.

Each measure uses its own inclusion criteria, described in the operational definition at the beginning of that section. Year-over-year comparisons use rate-based metrics wherever possible to account for the growing dataset. For established performance-based measures, peak benchmark data represents the top 10% of agency performance. Race and ethnicity data is reported per [JAMA 2021 guidance](#): alphabetical ordering, no aggregation into an "Other" category, cell sizes under 10 suppressed, and groups with sample sizes of 10 to 49 reported as counts only.¹⁷ More than one race or ethnicity may be documented for a patient.

This report is a descriptive analysis using retrospective data. It does not establish causation and should not be interpreted as a performance evaluation of any individual agency, provider, or patient population. Findings are intended to support agency-level quality improvement efforts to meet and exceed existing performance trends.

LIMITATIONS

The ESO Data Collaborative is a large but non-random sample. Agencies that contribute to the Collaborative are not statistically representative of all EMS agencies in the United States, and findings should not be extrapolated as a precise national estimate. Agencies with more mature data infrastructure and higher EHR adoption rates may be overrepresented relative to the broader national EMS landscape.

Race and ethnicity data is reported as documented in the patient care record. Documentation rates vary by agency and by measure. Incompleteness in race and ethnicity documentation limits conclusions about equity in prehospital care and is noted within each relevant measure.

All measures in this edition are descriptive and observational. Observed correlations are presented as hypothesis-generating findings, not evidence of causal mechanisms. Year-over-year comparisons must account for dataset growth; this edition uses rate-based metrics wherever possible to mitigate this effect.

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ABOUT ESO

ESO's mission is to improve community health and safety outcomes through the power of data. Founded and led by emergency responders and medical professionals since 2004, ESO advances the industry by combining deep domain expertise with innovative technology, impactful research, and the industry's largest integrated emergency outcome data asset. The company delivers the world's most trusted and connected emergency ecosystem - an open, interoperable platform that unites emergency medical response, fire, hospital, and government stakeholders across the full emergency continuum through real-time data exchange and embedded intelligence in frontline workflows. ESO's solutions deliver actionable insights to decision-makers, enable smarter coordination across the emergency continuum and uphold the highest standards of data security and patient privacy. The company helps customers around the world deliver measurable improvements in clinical, operational, and financial outcomes with dedicated teams in the United States, Canada, United Kingdom, Denmark, Czech Republic, India, and Costa Rica. For more information, visit www.eso.com.

