

Peer Review Clinical Data

3rd QUARTER 2025

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Division of Medical Affairs

November 20, 2025

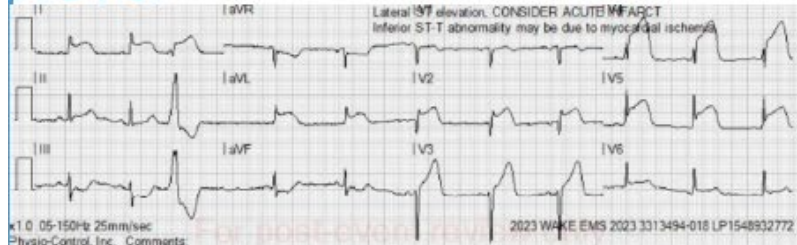


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STEMI Outcome Report

Pre-PCI



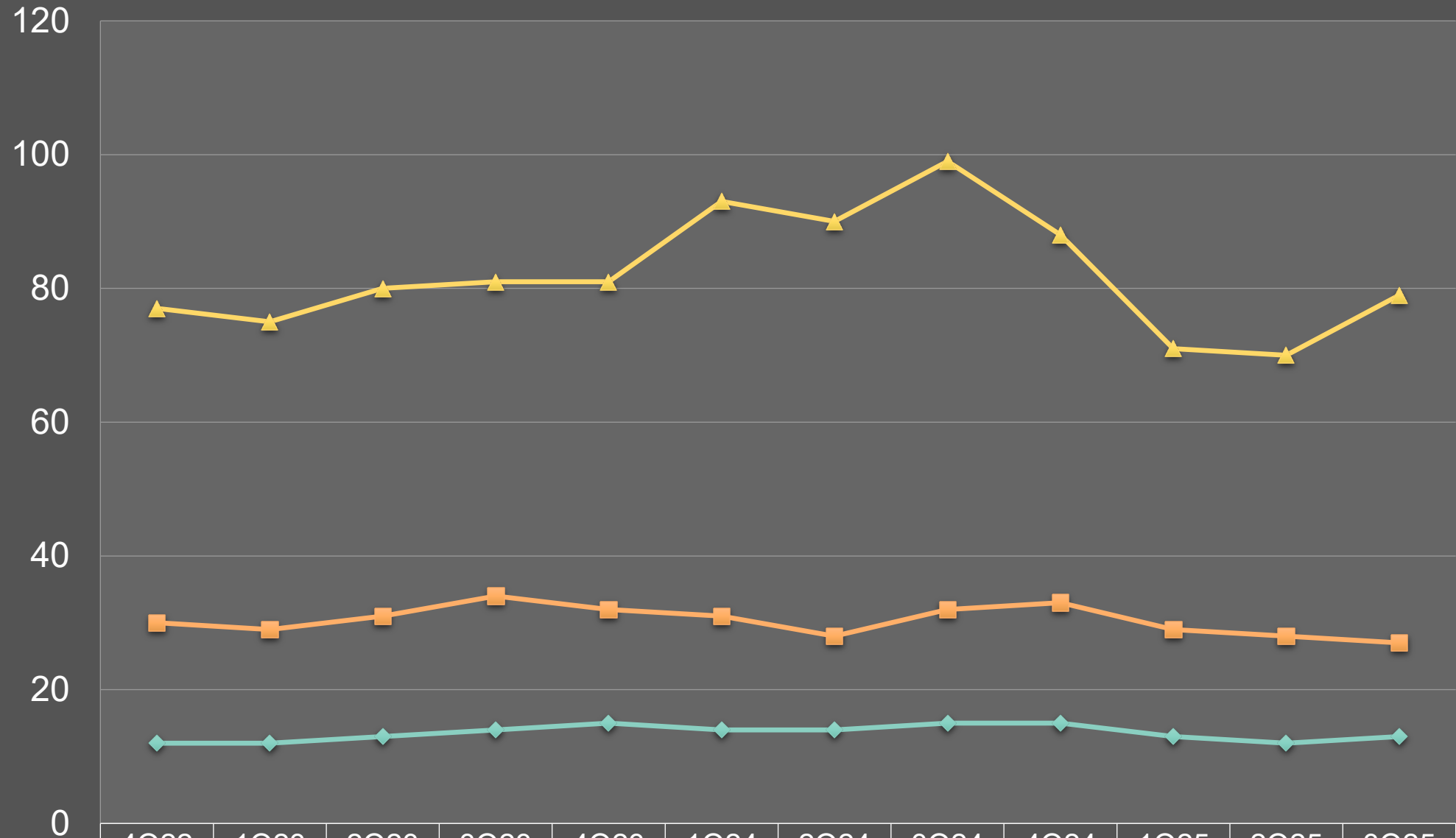
Post-PCI



CP	0	0	27	55	LAD	HOME
Chief Complaint	Time in ED	Cath Lab Ready	Door to Device	First Medical Contact to Device	VESSEL	DISPO

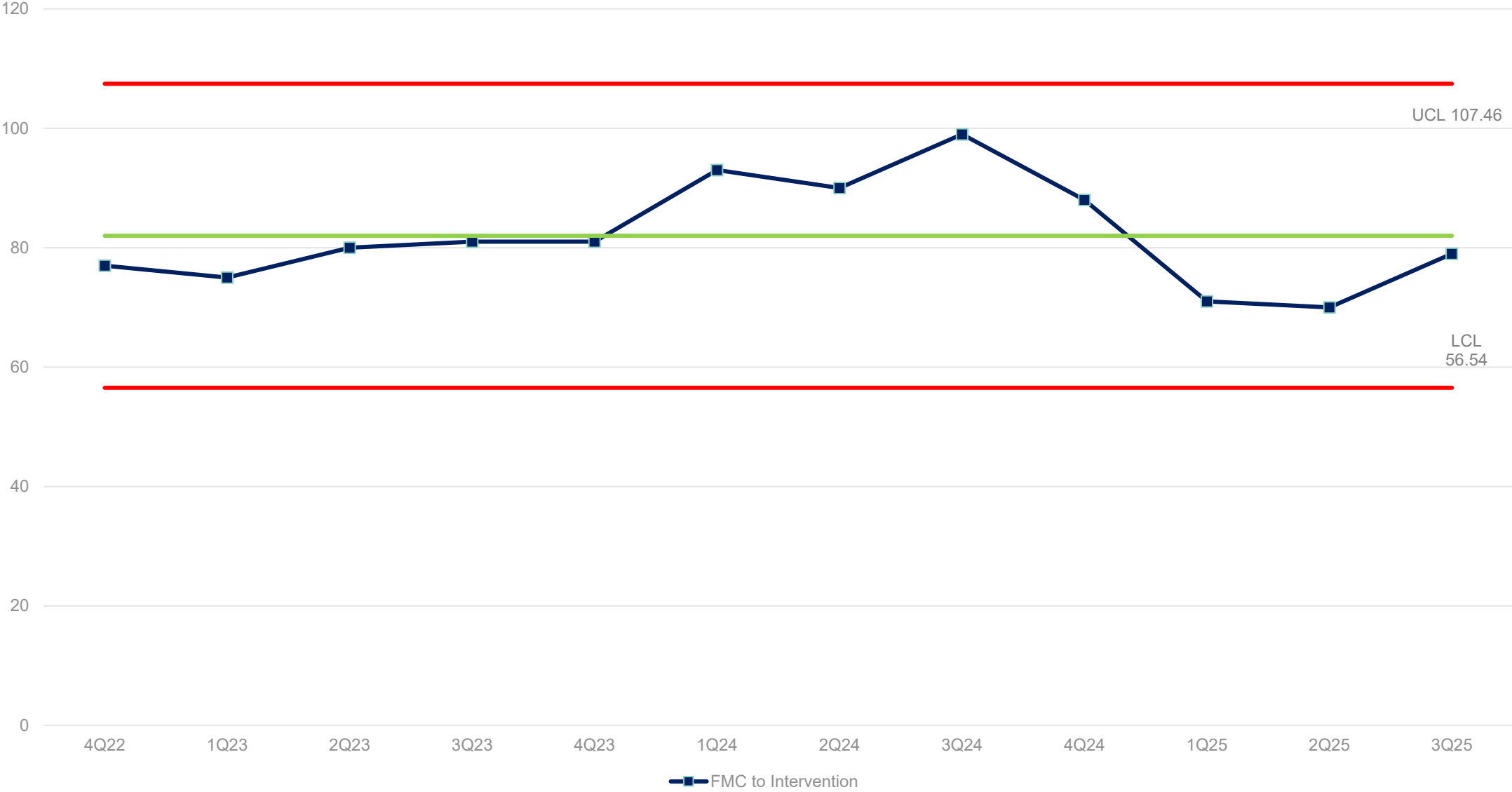
Mean Time for Patients with Confirmed STEMI; Combined for All Hospitals

Time in Minutes



▲ FMC to Intervention	47	46	49	47	49	62	62	67	55	42	42	52
■ Scene Depart to Hospital Arrival	18	17	18	20	17	17	14	17	18	16	16	14
◆ FMC to Scene Departure	12	12	13	14	15	14	14	15	15	13	12	13

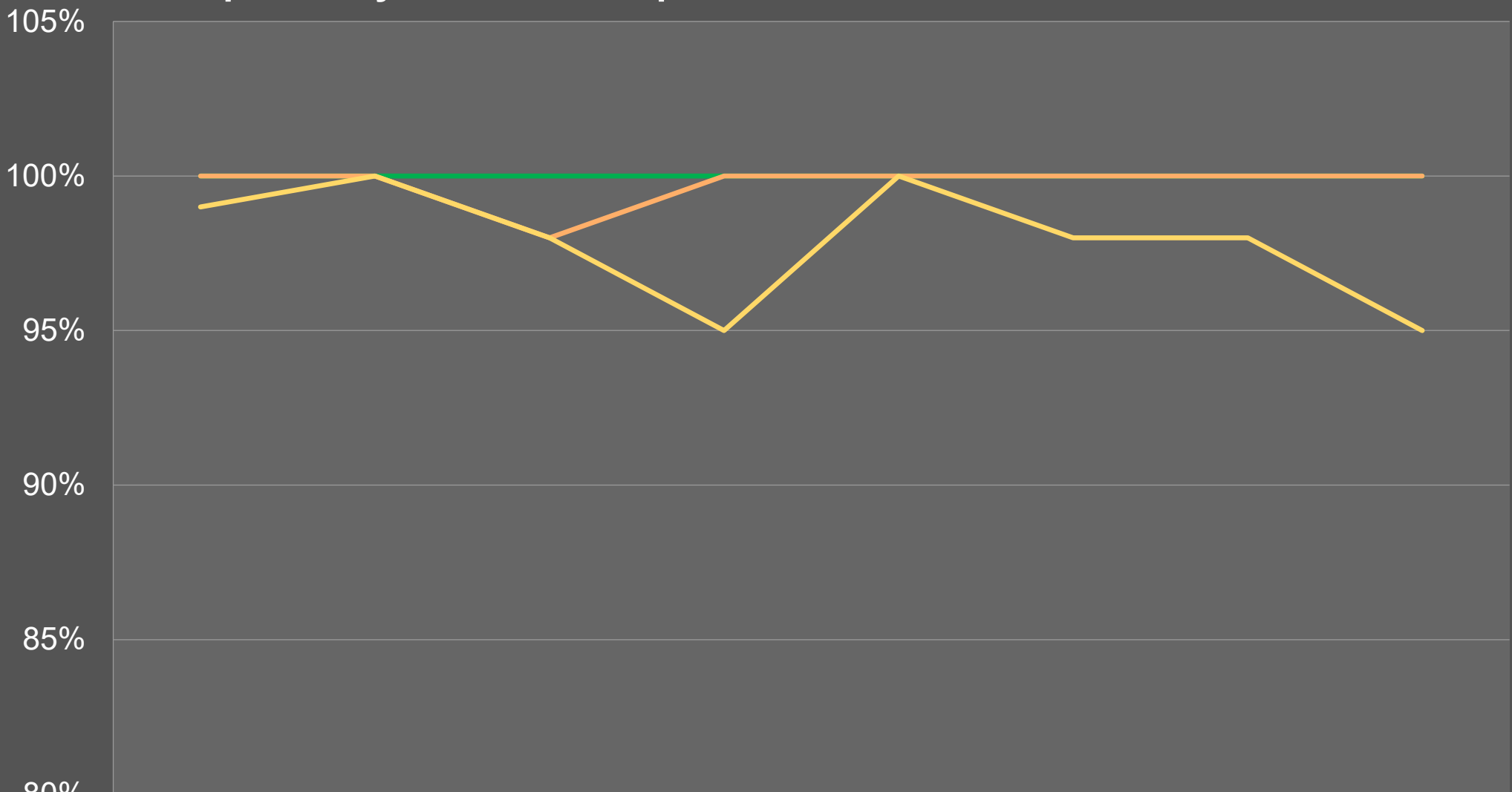
STEMI Intervention, EMS FMC to PCI



EMS STEMI Bundle

Patients Transported by EMS with Suspected or Confirmed STEMI

Percentage Performed



	4Q23	1Q24	2Q24	3Q24	4Q24	1Q25	2Q25	3Q25
12 Lead	100%	100%	100%	100%	100%	100%	100%	100%
ASA	100%	100%	98%	100%	100%	100%	100%	100%
Scene Time<15 min	99%	100%	98%	95%	100%	98%	98%	95%

STEMI Overtriage - 3Q2024

STEMIs activated
by EMS: 65

Total STEMI Activations cancelled as reported by hospitals: n= 36

- ED Activations sent for consult only by EMS: n= 20
- EMS did not activate or send for consult: n= 4

STEMIs activated by EMS that were cancelled by Hospital n= 12

Category	Reason Cancelled	Final Disposition = Triage Correctly	Final Disposition = Over Triage
ED EKG Does Not Meet STEMI Criteria	8	8	0
ST Elevation Resolved	1	1	0
Expired / Refused	1	1	0
STEMI Imposter (LVH, J Point Elev., Etc)	2	1	1
Other	0	0	0
			1 % Overtriage Rate

Wake EMS
Chest Pain Patient Contact to 12lead Time in Minutes



Stroke Outcome Report

SUMMARY

- y.o female presented to ED. Per EMS, pt was found unresponsive in [REDACTED]
- EMS noted a dysconjugate gaze, right sided weakness and facial droop
- LKW 13:15 per daughter
- Initial NIHSS = 28 (LOC, gaze, weakness, language, dysarthria)
- CTA head/neck revealed a basilar tip, proximal left PCA and bilat SCA acute occlusions

BEFORE

vs.

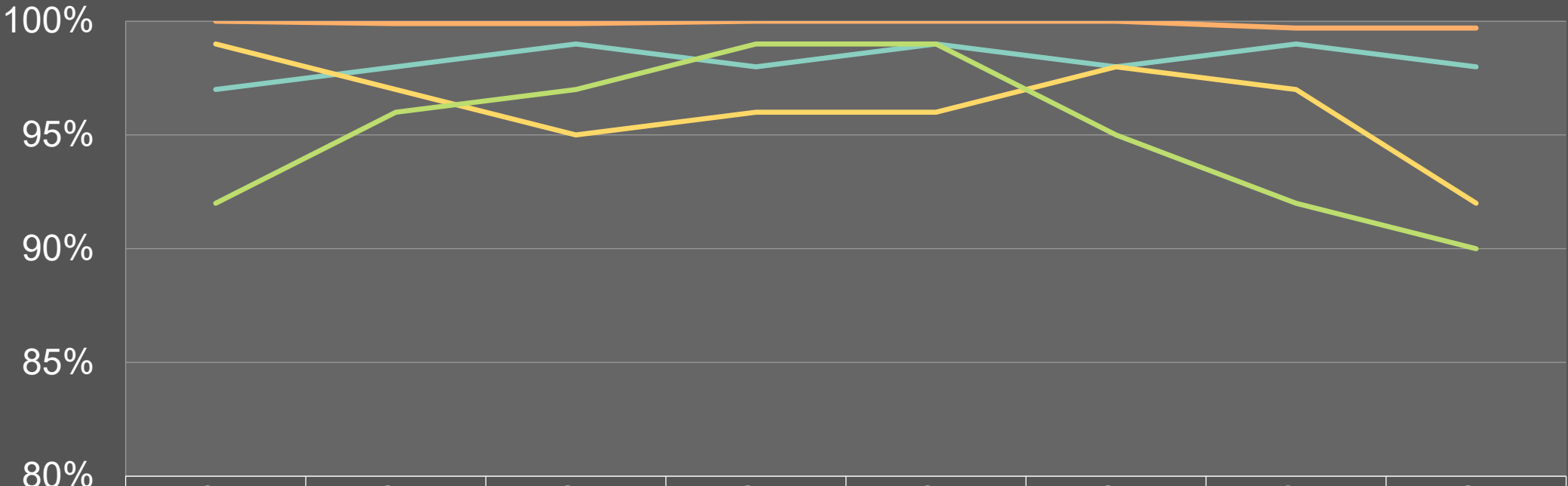
AFTER



Arrival Time	16:38
CODE STROKE *55	16:42
LKW MD Notes	13:15
GROIN	17:47
FIRST PASS	17:56
FINAL TICI	3
CODE STROKE CALCULATIONS	
LKW to Arrival	3:23
IA CALCULATIONS	
DOOR TO GROIN	Goal < 90 min 1:09
GROIN TO TICI 2B	Goal < 60min 0:10
EMS INCIDENT NUMBER	
[REDACTED]	
PROCEDURAL OUTCOMES	
▪ Occlusion of distal basilar artery. Initial TICI = 0	
▪ Successful thrombectomy with final TICI = 2C	
CLINICAL OUTCOMES	
▪ As of [REDACTED] = pt remains intubated at this time	

EMS Stroke Bundle
Patients Transported by EMS with Suspected or Confirmed Stroke

Percentage
Performed



12 Lead	97%	98%	99%	98%	99%	98%	99%	98%
BGL	100%	100%	100%	100%	100%	100%	100%	100%
Scene Time Justified	99%	97%	95%	96%	96%	98%	97%	92%
Blood Draw	92%	96%	97%	99%	99%	95%	92%	90%

Interventional Stroke Report

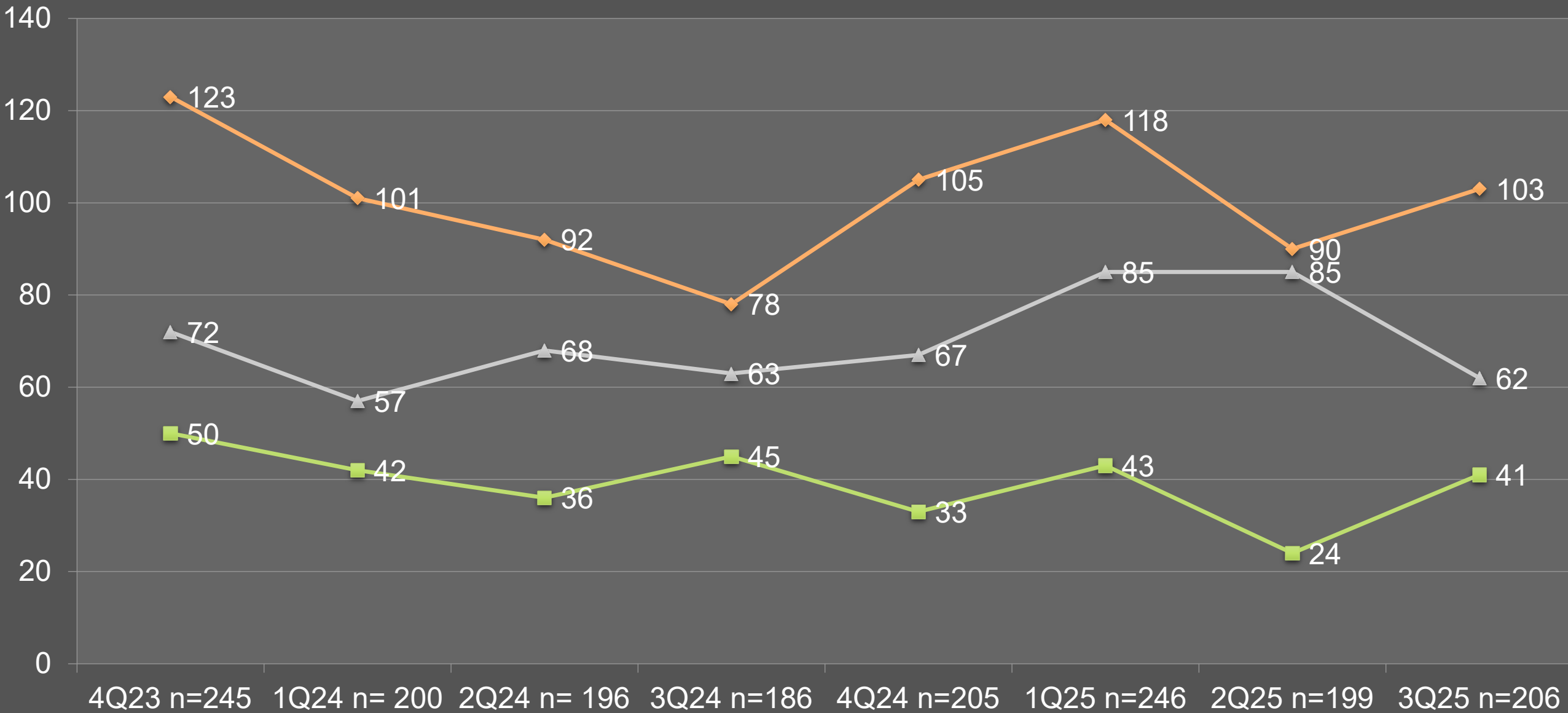
Date	Initial Hospital	Intervention Type	Intervention Performed	GroinPunctureTime	TICI
02-Jul-25	WakeMed Raleigh Campus	IA	Thrombectomy	02-Jul-25	3
09-Jul-25	WakeMed Raleigh Campus	TNK / IA	Thrombectomy	09-Jul-25	2a
24-Aug-25	UNC Rex Healthcare	TNK / IA	Thrombectomy	25-Aug-25	3
04-Sep-25	WakeMed Raleigh Campus	IA	Thrombectomy	24-Feb-00	3
15-Jul-25	WakeMed Cary	TNK / IA	Thrombectomy	15-Jul-25	2b
15-Aug-25	WakeMed Raleigh Campus	TNK / IA	Thrombectomy	16-Aug-25	3
01-Jul-25	WakeMed Cary	IA	Thrombectomy	02-Jul-25	2b
06-Jul-25	WakeMed Raleigh Campus	TNK / IA	Thrombectomy	06-Jul-25	3
21-Aug-25	WakeMed Cary	IA	Thrombectomy	21-Aug-25	3
09-Jul-25	WakeMed Cary	TNK / IA	Thrombectomy	09-Jul-25	3
11-Sep-25	WakeMed Raleigh Campus	TNK / IA	Thrombectomy	05-Mar-00	3
16-Aug-25	WakeMed Raleigh Campus	IA	Thrombectomy	16-Aug-25	2b
06-Jul-25	WakeMed Raleigh Campus	TNK / IA	Thrombectomy	06-Jul-25	2b
16-Jul-25	WakeMed Raleigh Campus	IA	Thrombectomy	16-Jul-25	3
05-Aug-25	UNC Rex Healthcare	IA	Thrombectomy	06-Aug-25	3
02-Sep-25	WakeMed Raleigh Campus	TNK / IA	Thrombectomy	06-Mar-00	3
07-Sep-25	UNC Rex Healthcare	IA	Thrombectomy	07-Sep-25	

Cardiac Arrest



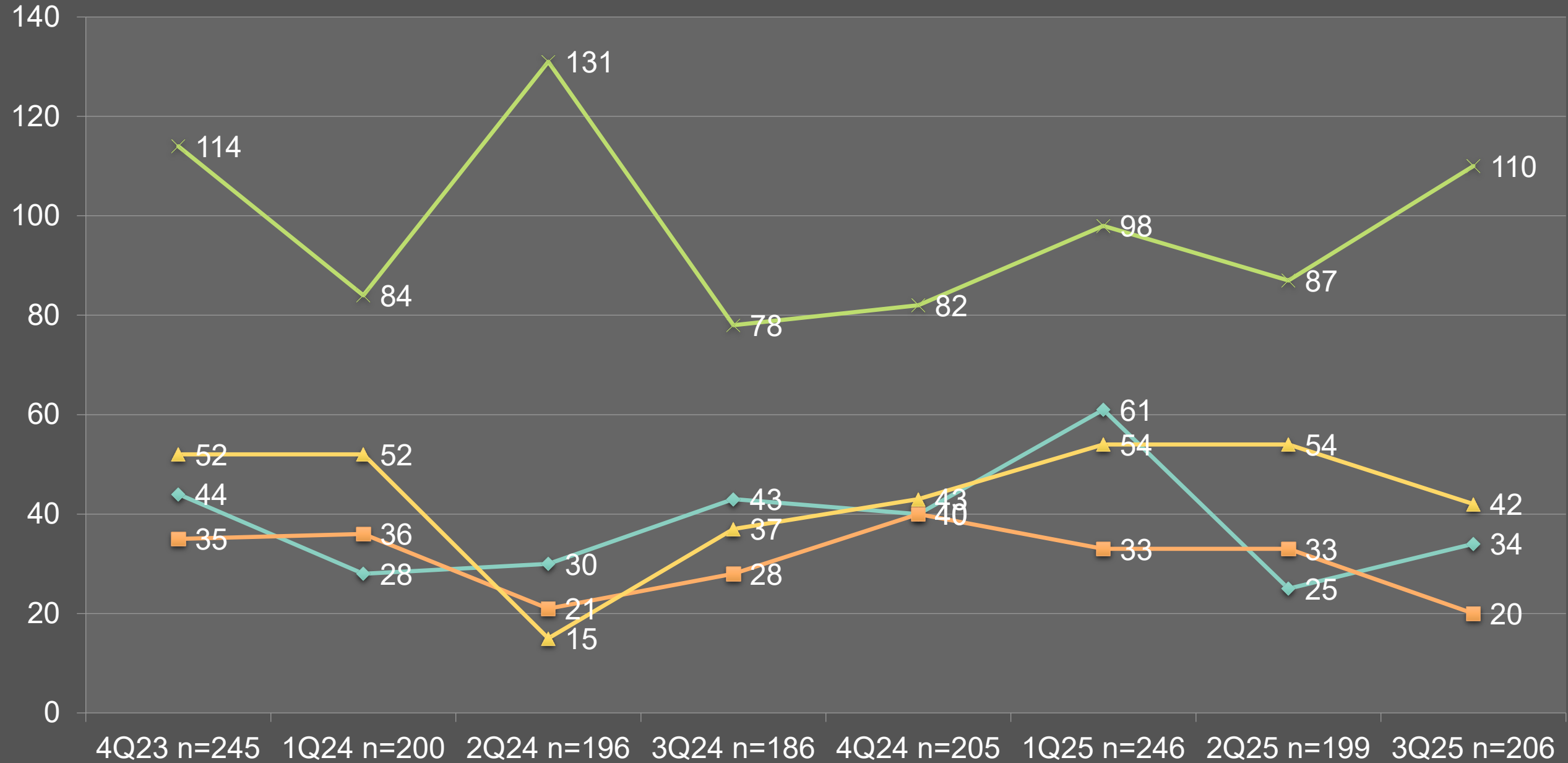
Cardiac Arrest: Disposition for Attempted Resuscitations

—◆— Resuscitation Ceased in the Field —■— Transport to Hospital with no ROSC —▲— Transport to Hospital with ROSC



Cardiac Arrest Initial Rhythm

—◆— Aystole —■— PEA —▲— VF/VT —×— Unknown Unshockable



ALL TIME

CARES Dispatcher Assisted-CPR Report

End of the Event: Dead in Field, Pronounced Dead in ED, Ongoing Resuscitation in ED | Resuscitation Attempted by 911 Responder: Yes | Presumed Cardiac Etiology, Respiratory/Asphyxia, Drowning/Submersion, Electrocution, Other, Drug Overdose, Exsanguination/Hemorrhage | Date of Arrest: From 7/1/2025 Through 9/30/2025

3Q25

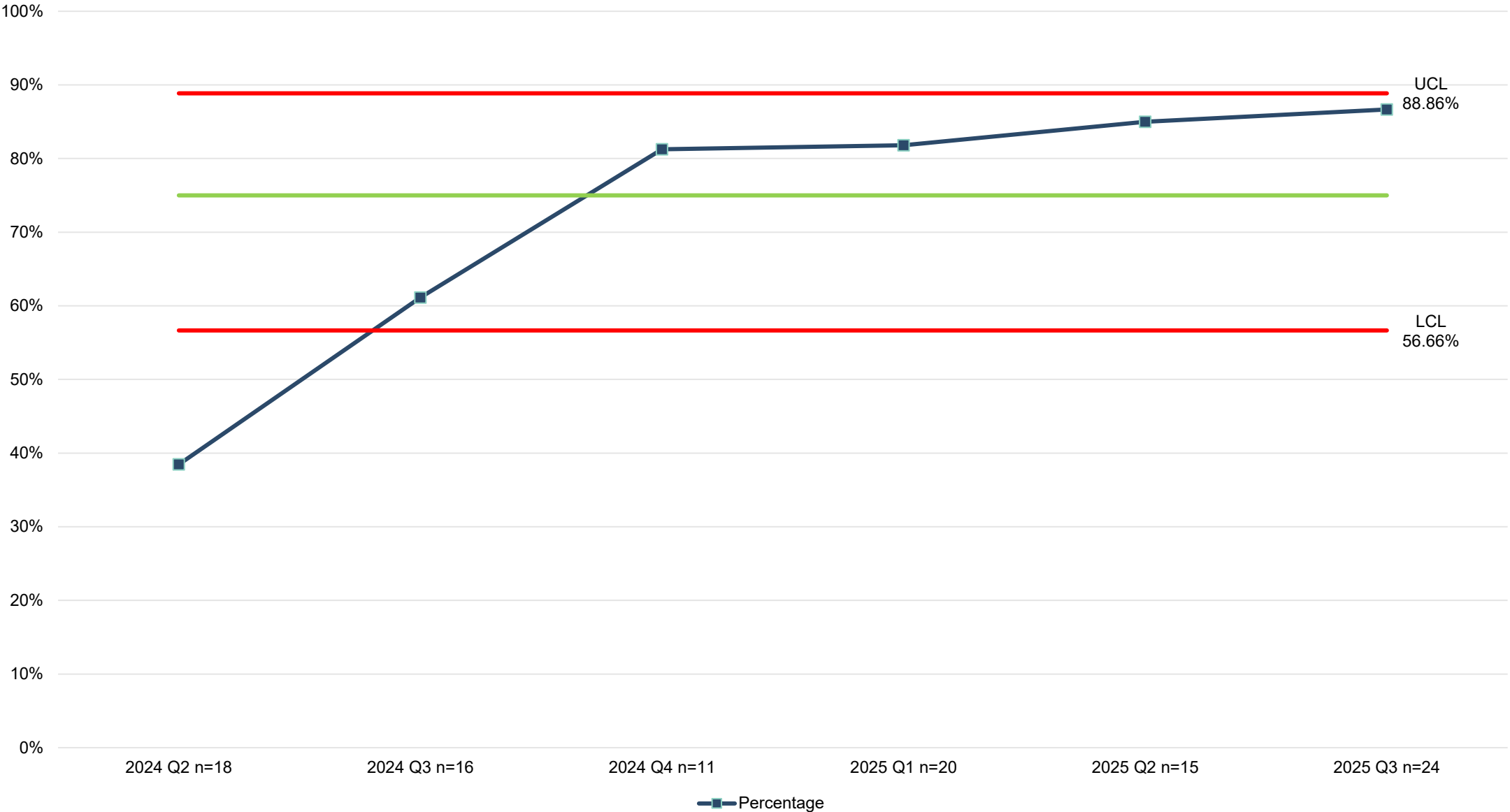
Characteristic	Wake County EMS System
Bystander CPR (Module-based)	N=2410
Bystander CPR with dispatcher assistance	1269 (52.7%)
Bystander CPR without dispatcher assistance	252 (10.5%)
Dispatcher CPR Instructions	
Dispatcher recognized need for CPR	1876 (89.8%)
CPR instructions started	1750 (83.7%)
CPR instructions refused	62 (4.0%)
Compressions started	1288 (65.0%)
Time Intervals	
Call receipt to CPR recognition	1891
Mean	01:15
Median	00:50
Call receipt to CPR instruction	1787
Mean	01:44
Median	01:22
Call receipt to first compression	1338
Mean	02:55
Median	02:38

Characteristic	Wake County EMS System
Bystander CPR (Module-based)	N=89
Bystander CPR with dispatcher assistance	48 (53.9%)
Bystander CPR without dispatcher assistance	16 (18.0%)
Dispatcher CPR Instructions	
Dispatcher recognized need for CPR	69 (98.6%)
CPR instructions started	60 (88.2%)
CPR instructions refused	3 (5.9%)
Compressions started	48 (80.0%)
Time Intervals	
Call receipt to CPR recognition	70
Mean	01:17
Median	00:41
Call receipt to CPR instruction	62
Mean	01:34
Median	01:14
Call receipt to first compression	49
Mean	02:36
Median	02:22



Miscellaneous Clinical Reports

Percentage of Field Deliveries Receiving Oxytocin by EMS

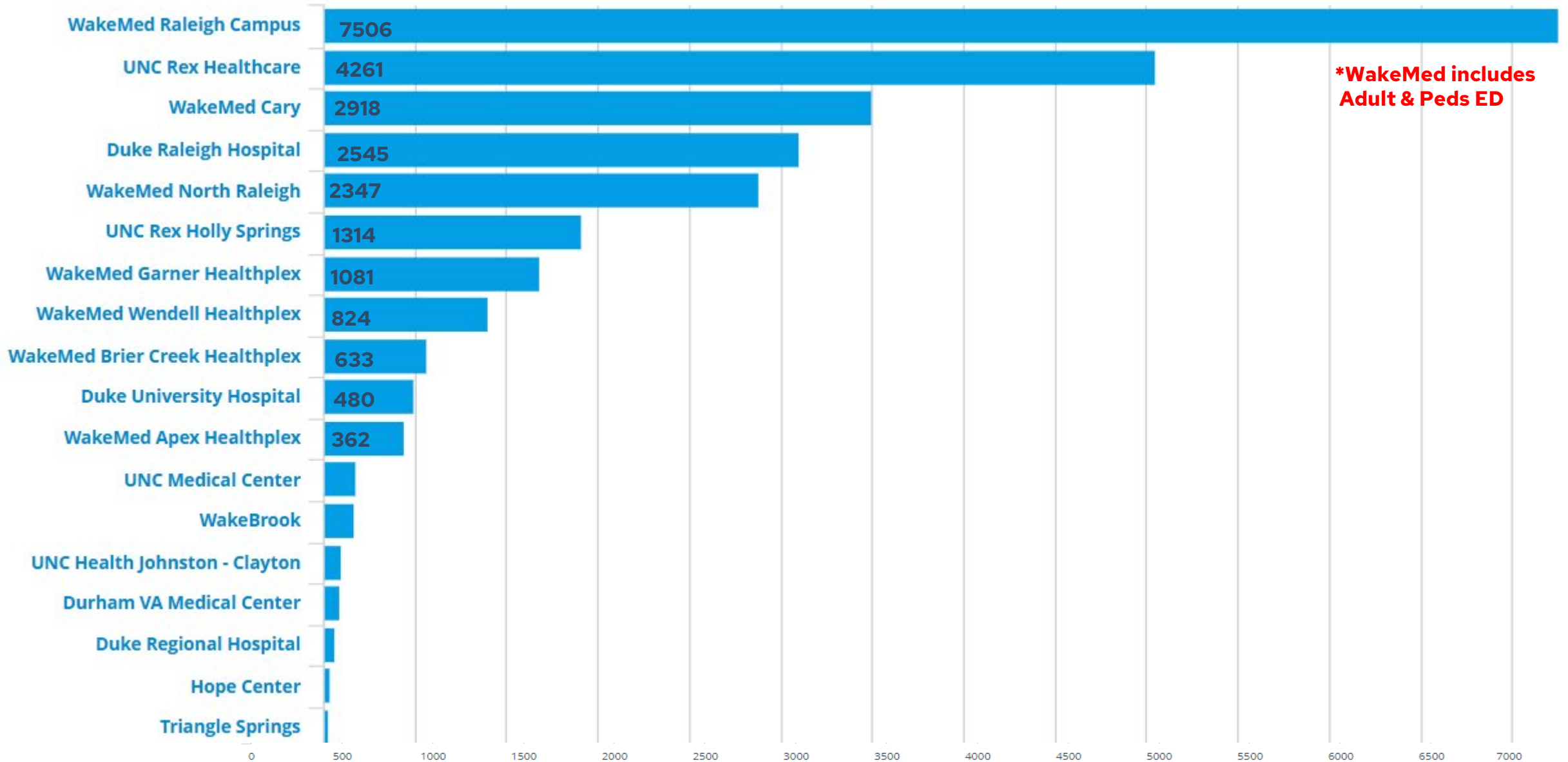


Transports By Facility

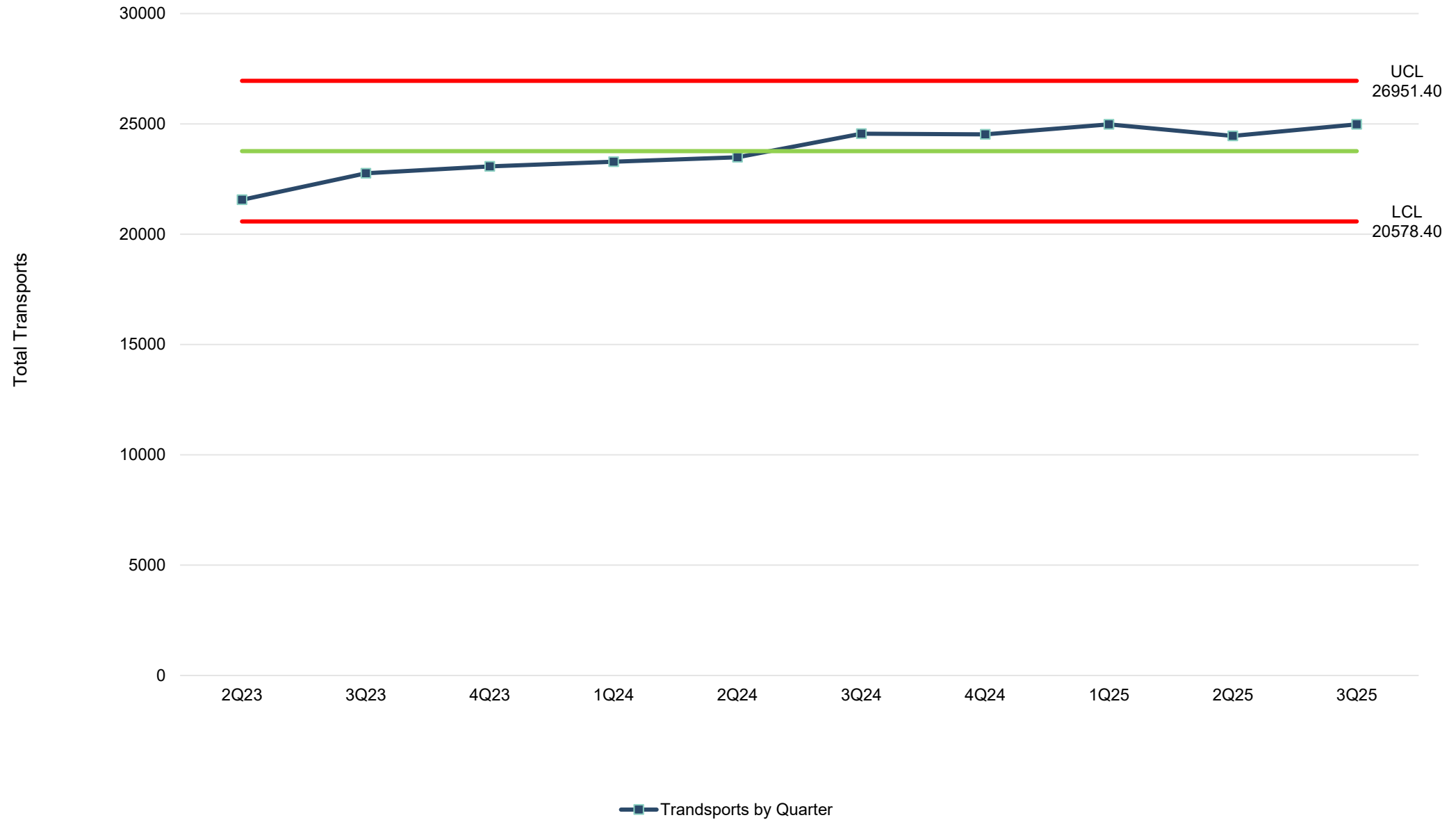
24,979
RECORDS
In Selected Time Slice

+528 transports
From 2Q25

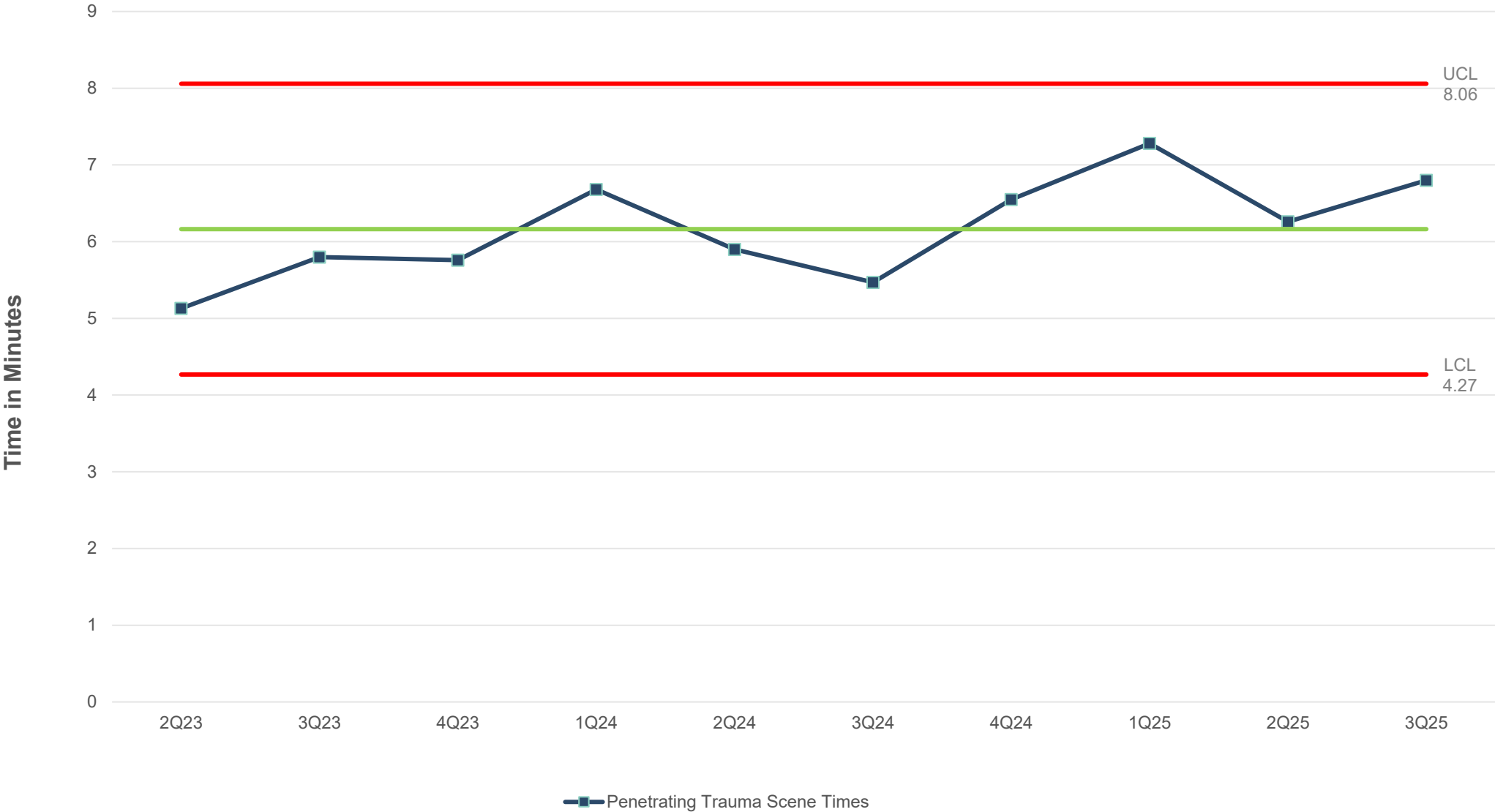
Jul 1, 2025 - Sep 30, 2025



Transports by Quarter

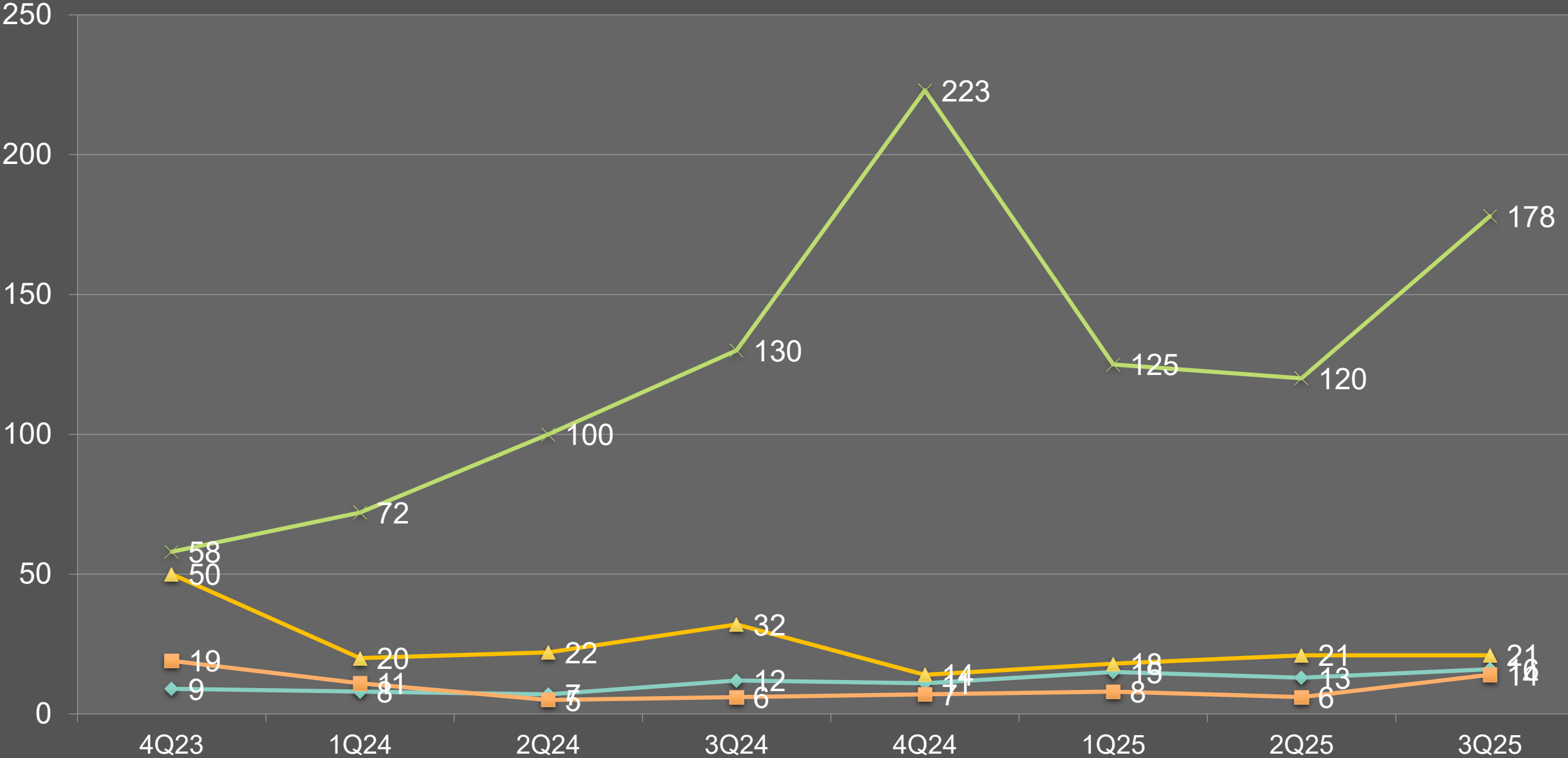


Penetrating Trauma Scene Time



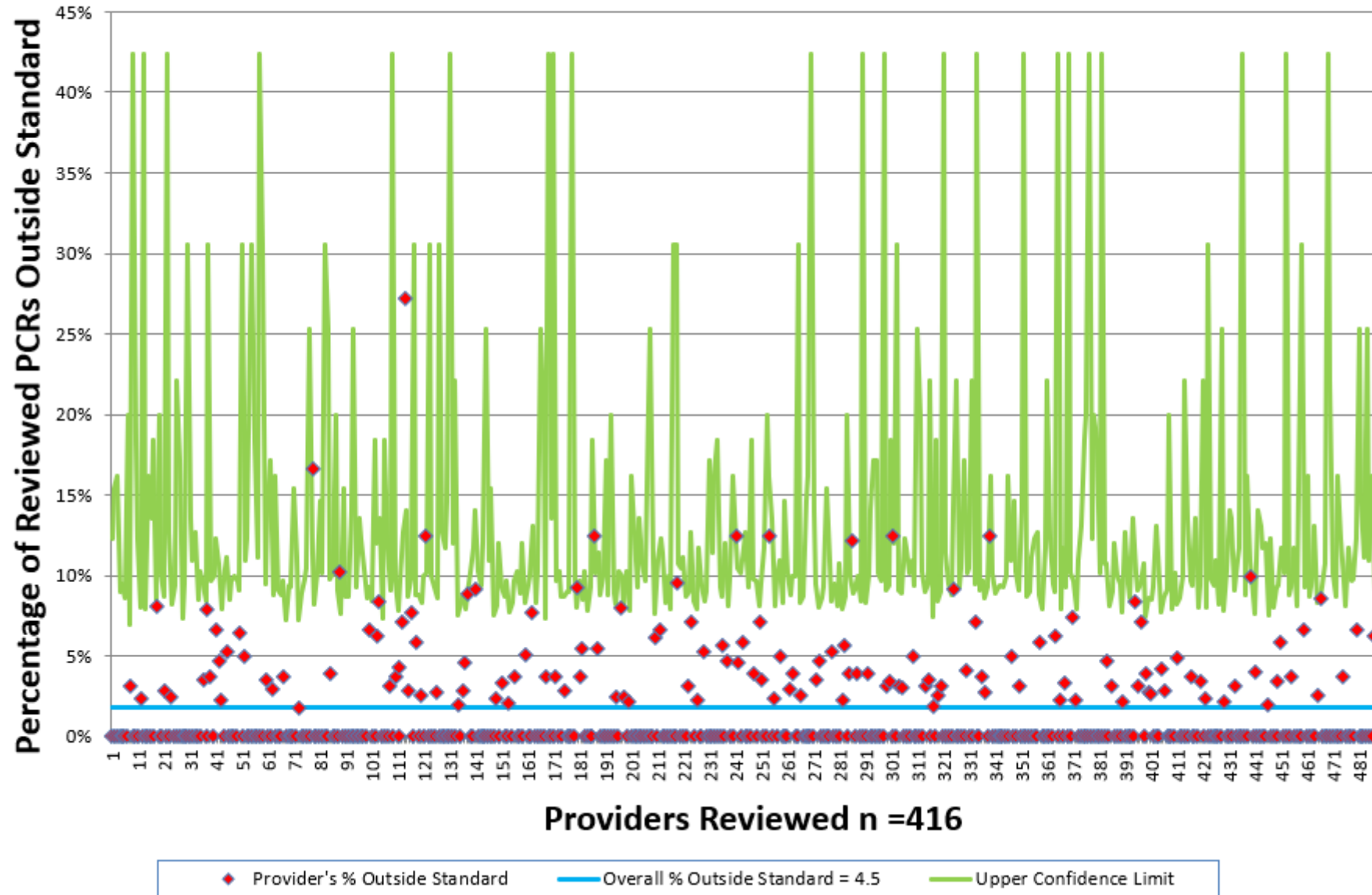
Reason for OLMC Contact

Automatic Notification Medical Control Order Unusual Event General Consult



QA ePCR Chart Review

Clinical Care Outside Standard
(based on EBM Bundles, n = 8092 PCRs)



Mental Health / Substance Use Alternate Destination

Michael Lyons

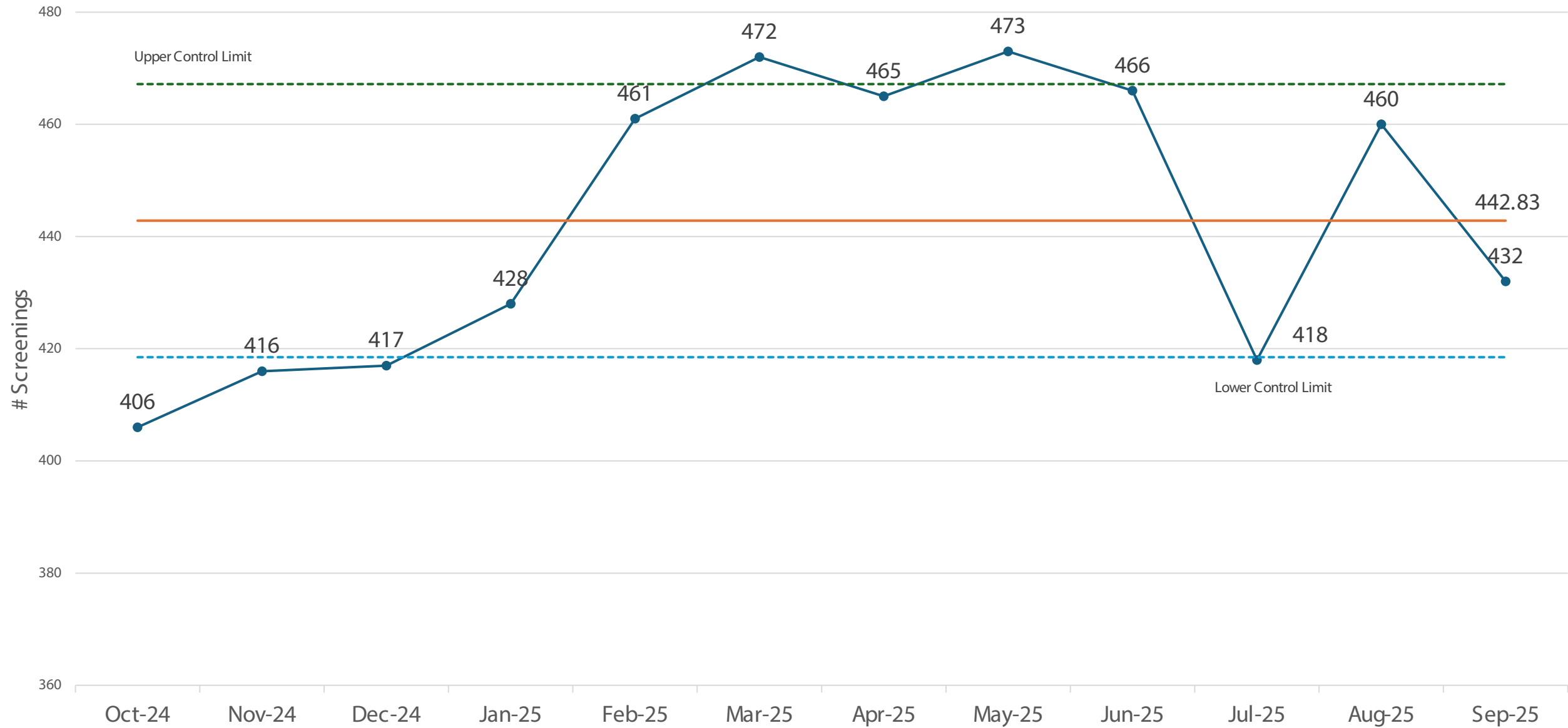
Commander – Mobile Integrated Health



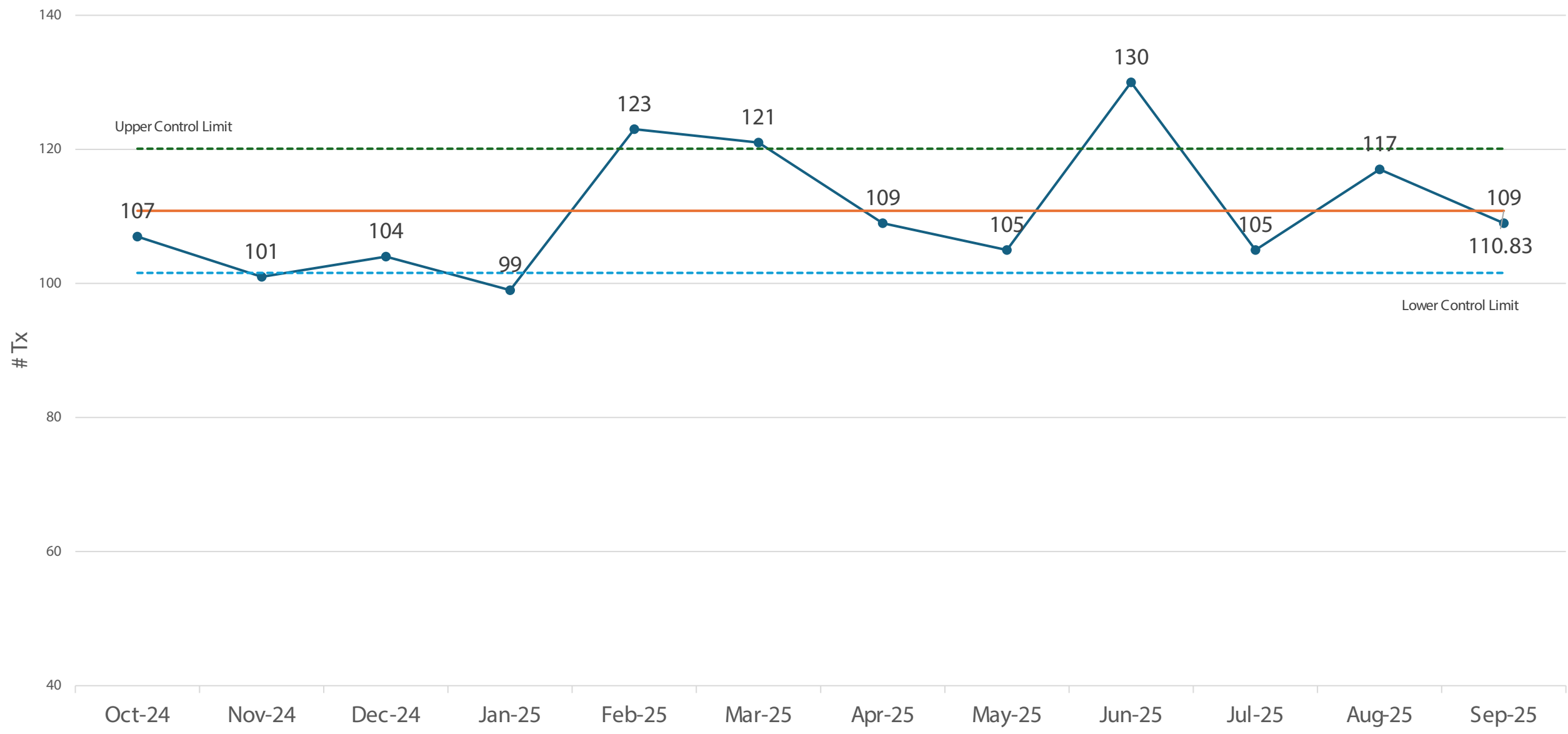
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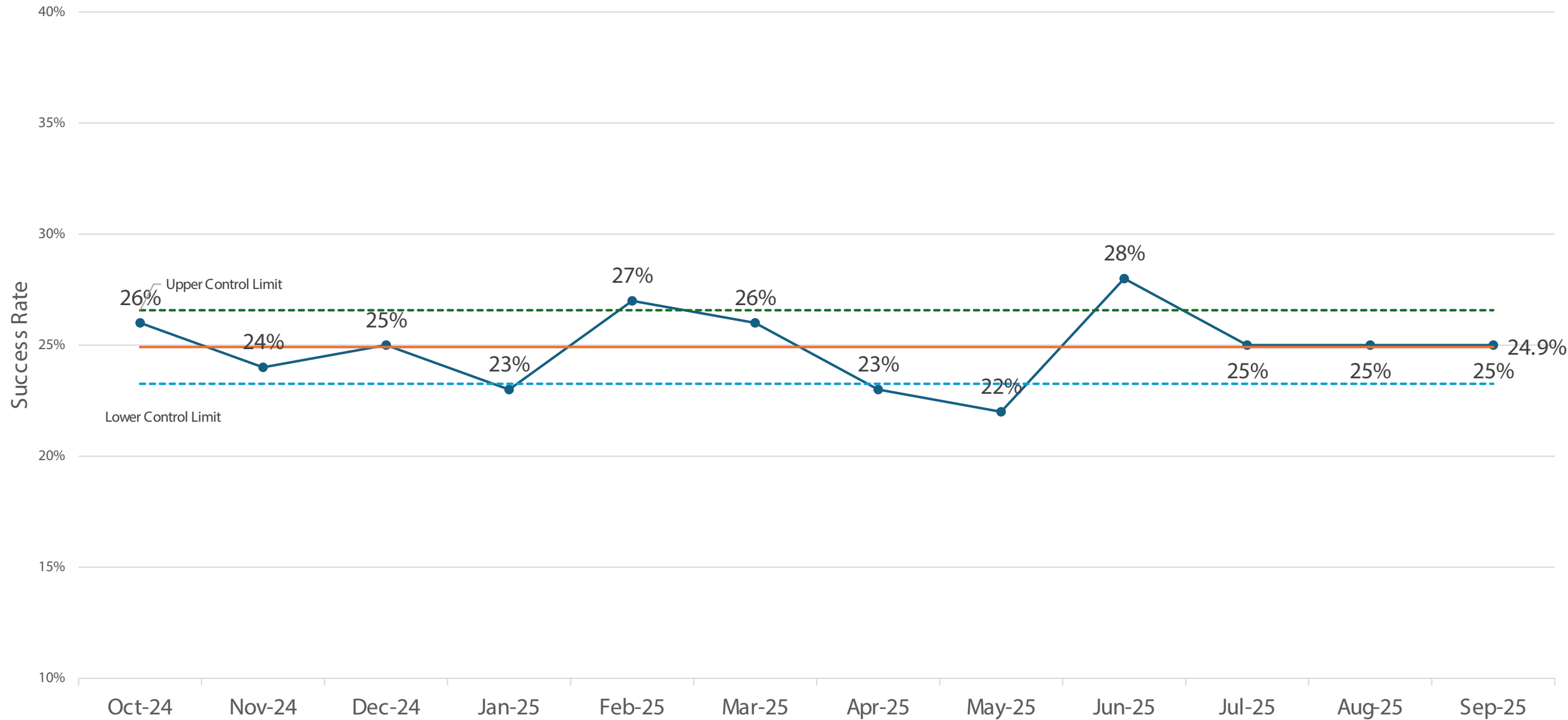
APP MH Screenings



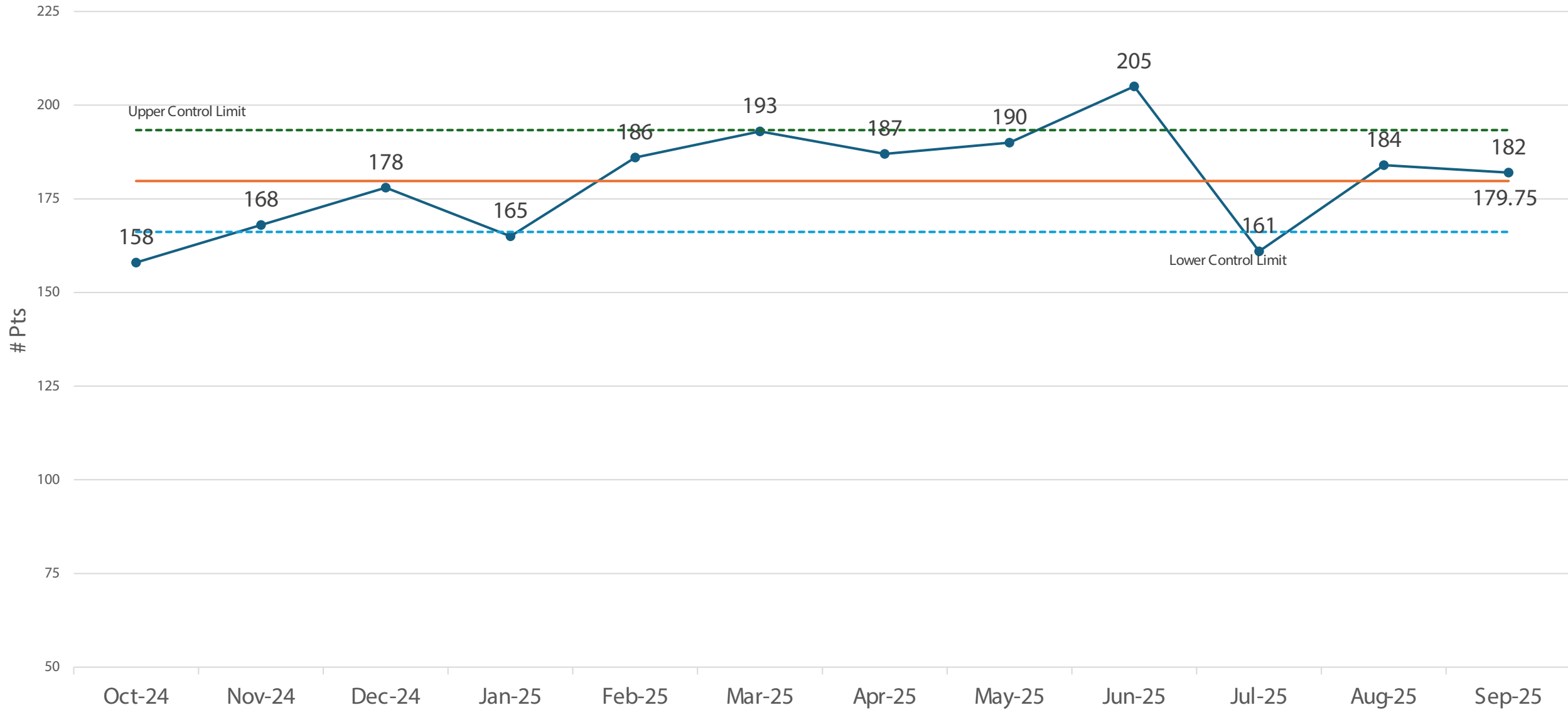
Alternate Destinations



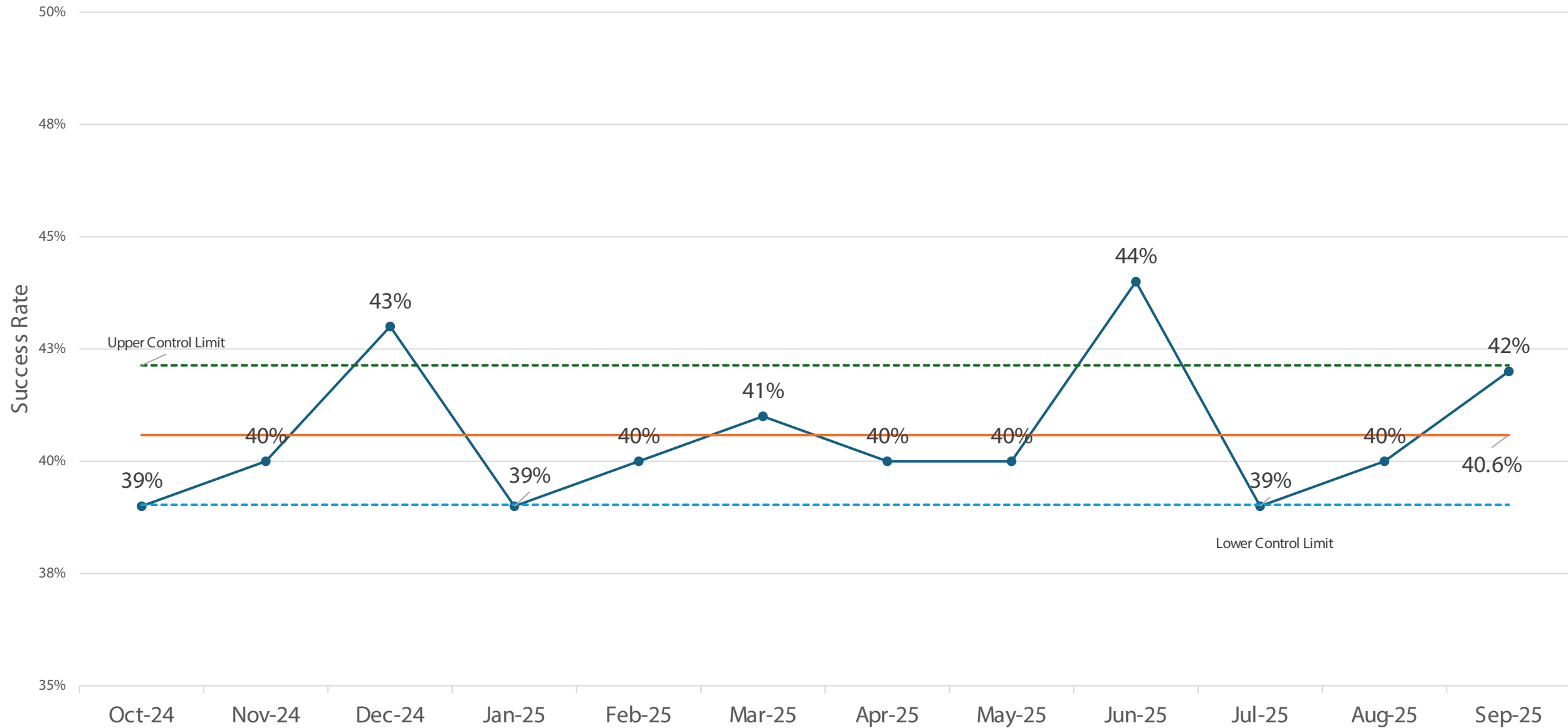
Alternate Success Rate



MH/SA Non-ED Dispositions



MH/SA Non-ED Disposition Rate



Buprenorphine Update

Buprenorphine screenings since 7/5/2023:

965

Total patients who received buprenorphine:

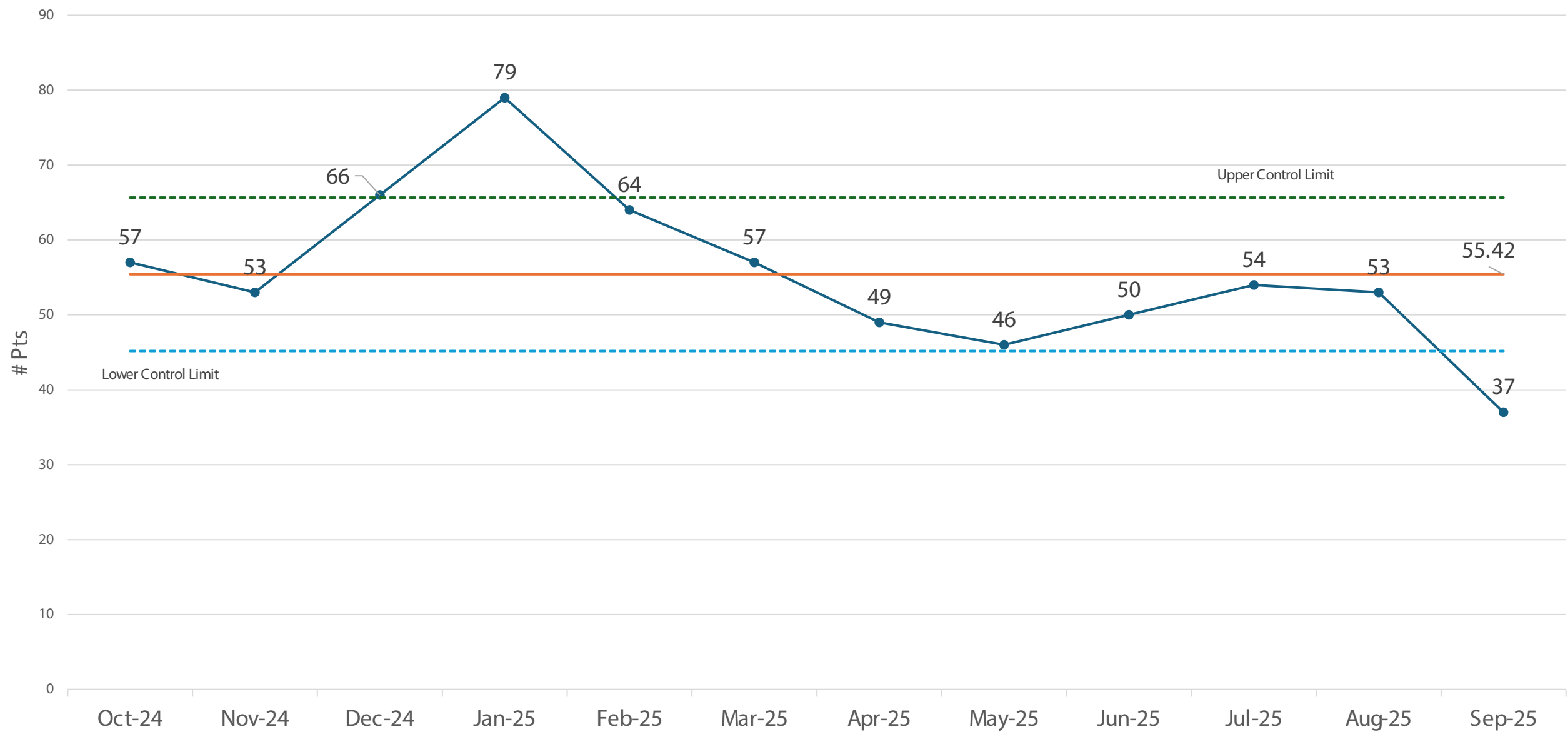
171

Total buprenorphine doses administered:

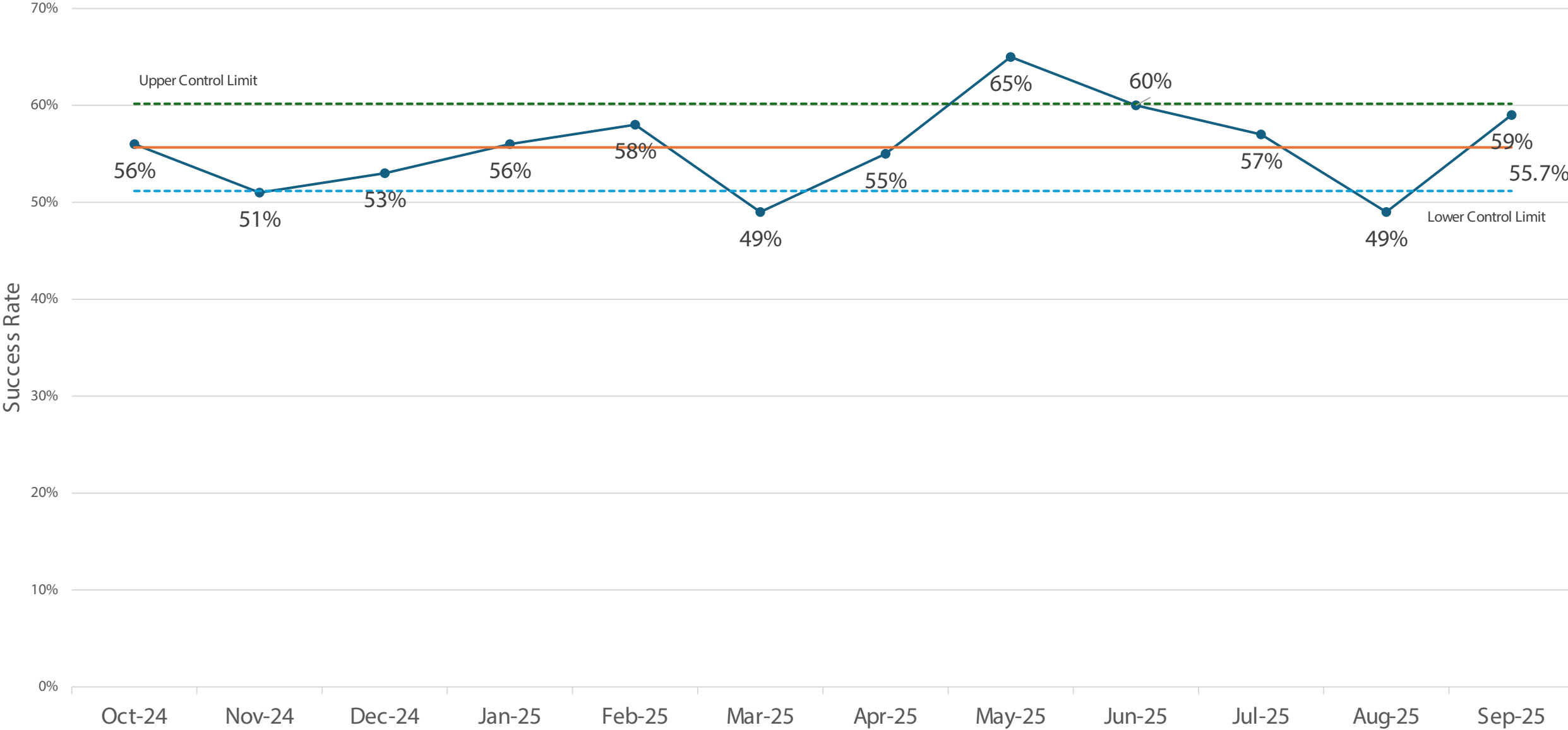
297



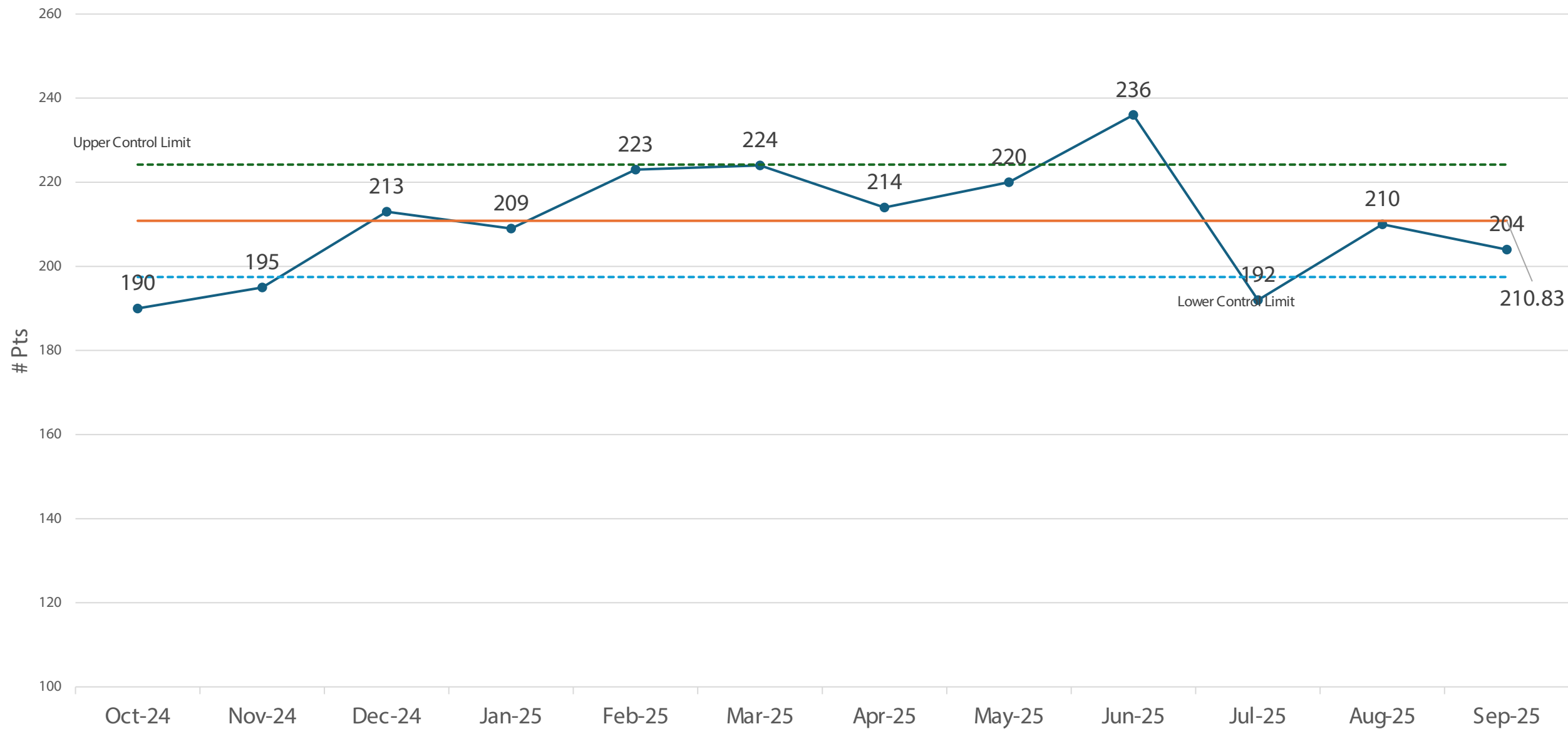
Falls in Assisted Living Facilities



Falls in ALF Success Rate



Total Non-ED Transport Dispositions





Protocol Updates

Dr. Williams

Protocol / Policy	Provider level	2025 Change	Information pulled from
All	All	Format change: removed color bar on right side of page.	requested by several agencies
All	ALL	Terminology correction - changes "deceased subjects" to "deceased persons"	pointed out by an Ems clinician
AM 1 and PM 1	ALL	Added Epinephrine nasal spray as option in anaphylaxis. Simplified treatment guidelines by combining moderate and severe treatment guidelines. Change methyl prednisone to AEMT level as per state changes to scope of practice approved by NCMB	https://www.ars-pharma.com/wp-content/uploads/pdf/Prescribing_Information.pdf
AP 1 Combitube Procedure removed		Removed outdated procedure for Combitube, changes numbers on the other airway procedures	
UP 11	EMT	Added EMT to personnel able to administer Nitrous Oxide for pain	Expanded scope of practice approved by NCMB https://drive.google.com/file/d/1rmdh678ceaLN1DTJnLi-ByWyua9S-WcA/view
CSP 3	Paramedics	Removed asystole and PEA as indication for transcutaneous pacing	
PM 3 & AM 5	Paramedics	Corrected dose of steroids in pediatric patients in pearls	
USP 3	EMT/AEMT	Corrected level that can insert gastric tube with BIAD based on current state scope of practice and made specific steps for AEMT and EMT	https://drive.google.com/file/d/1rmdh678ceaLN1DTJnLi-ByWyua9S-WcA/view
UP 3	Paramedics	Updated administration information for promethazine per FDA guidelines	https://oems.nc.gov/wp-content/uploads/2024/11/promethazine.pdf
USP 5 & USP 6	All	Corrected typo, changes "supine" to "prone"	
UP 7 & UP 9	Paramedics	Pearls moved to 2nd page, added brief procedure to protocols. TXA changed to AEMT scope of practice as per NC scope of practice rules	
TB 10	All	Added box: "Witnessed Arrest and transport time to trauma center <15 min (consider CPR and immediate transport)"	Feedback from trauma center
AR 3	Paramedics	Change dose of ketamine to range of 1-2mg/kg	
AO 1 & USP 1	All	Added pearl about defer umbilical cord clamping in neonates <37 WGA per ACOG guidelines	https://journals.lww.com/greenjournal/fulltext/2025/09000/acog_clinical_practice_update__an_update_to.22.aspx
AM 7	All	New protocol added for critical medical patients	https://emergency-medicine.ecu.edu/wp-content/pv-uploads/sites/151/NAEMSP-Sudden-ambulance-death-syndrome-final2-st-edit-010325.pdf
PC 2	All	Corrected error in flow chart, added verbiage align with AHA guidelines for pediatric bradycardia	https://www.uptodate.com/contents/pediatric-advanced-life-support-pals
Documentation Policy 1	All	Corrected typo, changed "below" to "above" ----Correct sentence: "....with an EMS Data Score at/or above the state average"	Per NCOEMS policy
AM 5	All	Change horizontal order. Added caveats for early pressors in sepsis. Change ranges of fluids	
Medical Policy 3 Ultrasound	Paramedics	New policy per new scope of practice for paramedics to use ultrasound in 911 and critical care transport services as approved by NCMB.	https://pubmed.ncbi.nlm.nih.gov/38363335/ https://www.acep.org/sonoguide/advanced/ems
AEMT expanded scope protocols integrated to baseline protocols	ALL		Expanded scope of practice for EMT and AEMT added to NCCEP protocols/procedures, these are optional. If system chooses not to implement they should update/remove locally with notification to NCOEMS upon adoptions.

2025 NC OEMS protocol updates:
<https://oems.nc.gov/systems/>



Crashing Medical Patient

History

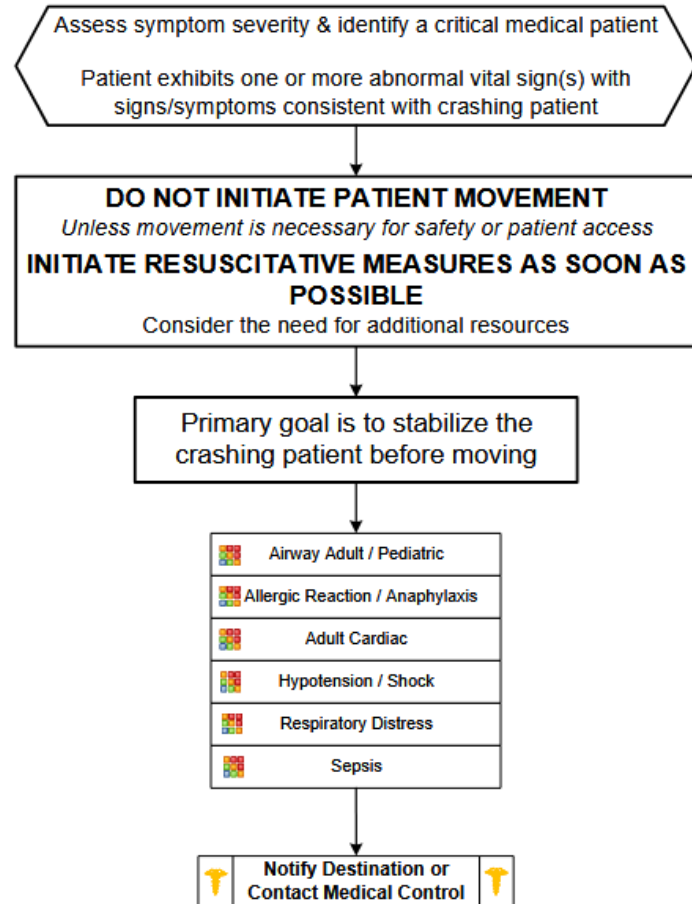
- Blood loss - vaginal or gastrointestinal bleeding, AAA, ectopic
- Fluid loss - vomiting, diarrhea, fever
- Infection
- Cardiac ischemia (MI, CHF)
- Medications
- Allergic reaction
- Pregnancy
- History of poor oral intake

Signs and Symptoms

- Tachycardia out of proportion to temp
- Hypoxia (SpO2 < 90%)
- Bradypnea or tachypnea
- Respiratory distress requiring NIPPV
- SBP < 90
- AMS
- Delayed capillary refill > 2 sec
- Hypotension for age
- Cool / mottled or flushed/ruddy skin
- Tarry stool / GI bleed

Differential

- Ectopic pregnancy
- Dysrhythmias
- Pulmonary embolus
- Tension pneumothorax
- Medication effect / overdose
- Vasovagal
- Physiologic (pregnancy)
- Sepsis



Crashing Medical Patient

Pearls

- This protocol pertains to critical *medical* patients. The mainstay of treatment for critical **trauma** patients is still safe rapid transport.
- The idea of rapid transport for "definitive care" in a paramedic system is a misnomer- the initial resuscitative measures provided by the emergency department are identical to those initial resuscitative measures provided by a paramedic.
- Identification of a critical patient should occur as soon as possible upon patient contact *prior* to initiation of movement to the ambulance. A full set of vital signs must be obtained as soon as possible upon patient contact (preferably within 5 minutes).
- Ensure all resuscitative equipment is brought to the patient side and available at initial evaluation (i.e. bring equipment to patient side).
- For hypotensive patients, *clinically meaningful access* is required- large-bore proximal IV, or IO access.
- In hypotensive patients where IV access fails, transition to IO access rapidly.

GCS 15 DOES NOT EQUAL STABILITY.

HYPOTENSION REQUIRES TREATMENT REGARDLESS OF MENTAL STATUS.

IO ACCESS DOES NOT REQUIRE ALTERED MENTAL STATUS AND SHOULD BE CONSIDERED IN ALERT PATIENTS REQUIRING EMERGENT ACCESS IN WHICH IV ACCESS CANNOT BE OBTAINED.

- For patients requiring a prolonged extrication time to the ambulance (i.e. down multiple flights of stairs), pre-determined stopping points should be established to allow for patient reassessment (i.e. confirming pulse, reassessing vital signs, and titrating pressors) at least every 5 minutes. **EXTRICATION TAKES MORE TIME THAN ESTIMATED.**
- The only exception for safe rapid movement of a critical medical patient is for instances where the patient requires intervention not available to the EMS crew:
 - Hypoxia or respiratory distress refractory to EMS measures and requiring RSI or other advanced airway procedure.
 - Patient requiring hemodynamic or airway interventions not in scope of practice of responding crew and safe rapid transport is needed to facilitate ED transport or rendezvous with more advanced clinicians.
 - Suspected hemorrhagic shock requiring safe rapid transport for administration of blood products (if not available to crew) or surgical intervention (i.e. unstable GI bleed, unstable vaginal hemorrhage, or suspected aortic catastrophe).
 - EMS resuscitative measures have failed to result in clinical improvement (i.e. unable to pace a patient requiring safe emergent transport for transvenous pacing, hypotension refractory to vasopressors and fluids).

Elevated Blood Pressure in Pregnancy and up to 6 Weeks Postpartum

General

- Elevated blood pressure (BP) in pregnancy can indicate severe disease and can result in both maternal and fetal morbidity and mortality. Elevated BP after 20 weeks of gestation and up to 6 weeks postpartum requires special attention and treatment.

- Vital signs of concern in a pregnant or postpartum patient:

⚠ **SBP 140–159 or DBP 90–109 mm Hg:** Abnormal, possible preeclampsia

⚠ **SBP 140–159 or DBP 90–109 mm Hg with ANY of the following:**
severe headache, blurred vision, or right upper quadrant or epigastric abdominal pain: Abnormal, preeclampsia with severe features
– Requires treatment with **MAGNESIUM SULFATE**

!!! **SBP $\geq$ 160 or DBP $\geq$ 110 mm Hg:** Abnormal, preeclampsia with severe features, even without other symptoms
– Requires treatment with **ANTIHYPERTENSIVES AND MAGNESIUM SULFATE**

- This is a time-critical disease. Develop a plan or local policy to provide treatment within **30–60 minutes**. This may include requesting an intercept from a paramedic-staffed response or transport vehicle and/or developing clinical protocols and agreements with local hospital facilities.
- In clinical situations in which **antihypertensives** and **magnesium sulfate** are indicated, **antihypertensive** medications are the highest priority.
- An elevated BP may be the only abnormal vital sign. Do not ignore asymptomatic high BP!
- Transport the patient to a hospital with obstetric services or the most appropriate local/regional facility if an obstetric facility is not readily available.
- Although nitroglycerin is widely available in the prehospital environment, there is no evidence to support the use of nitroglycerin in lowering BP in pregnant or postpartum patients.

2. ADMINISTER MAGNESIUM SULFATE AS OUTLINED BELOW IF:

!!! **For SBP $\geq$ 160 mm Hg or
DBP $\geq$ 110 mm Hg**

OR

⚠ **SBP 140–159 or DBP 90–109 mm Hg
with ANY of the following:** *severe
headache, blurred vision, or right upper
quadrant or epigastric abdominal pain*

- Magnesium sulfate:** 4-g IV loading dose, administered over 20 minutes.
 - If IV access cannot be obtained, a 10-g IM loading dose of **magnesium sulfate** (5 g in each buttock) may be administered. The medication can be mixed with 1 mL of a 2% lidocaine solution, if available, to reduce discomfort. There are no data on IO administration of magnesium sulfate in the setting of preeclampsia with severe features or in eclampsia.
 - Maintenance dosing:** After administering the loading dose, begin an infusion at a rate of 2 g/h IV. Maintenance infusion of **magnesium sulfate** should be administered via infusion pump, if available.

Reference

Chronic hypertension in pregnancy. ACOG Practice Bulletin No. 203. American College of Obstetricians and Gynecologists. Obstet Gynecol 2019;133:e26–50.



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