Upscale Regionalization in the Constitution State: How Should We Scale a Statewide Regional EMS Delivery System Model?

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Department of Emergency Medicine

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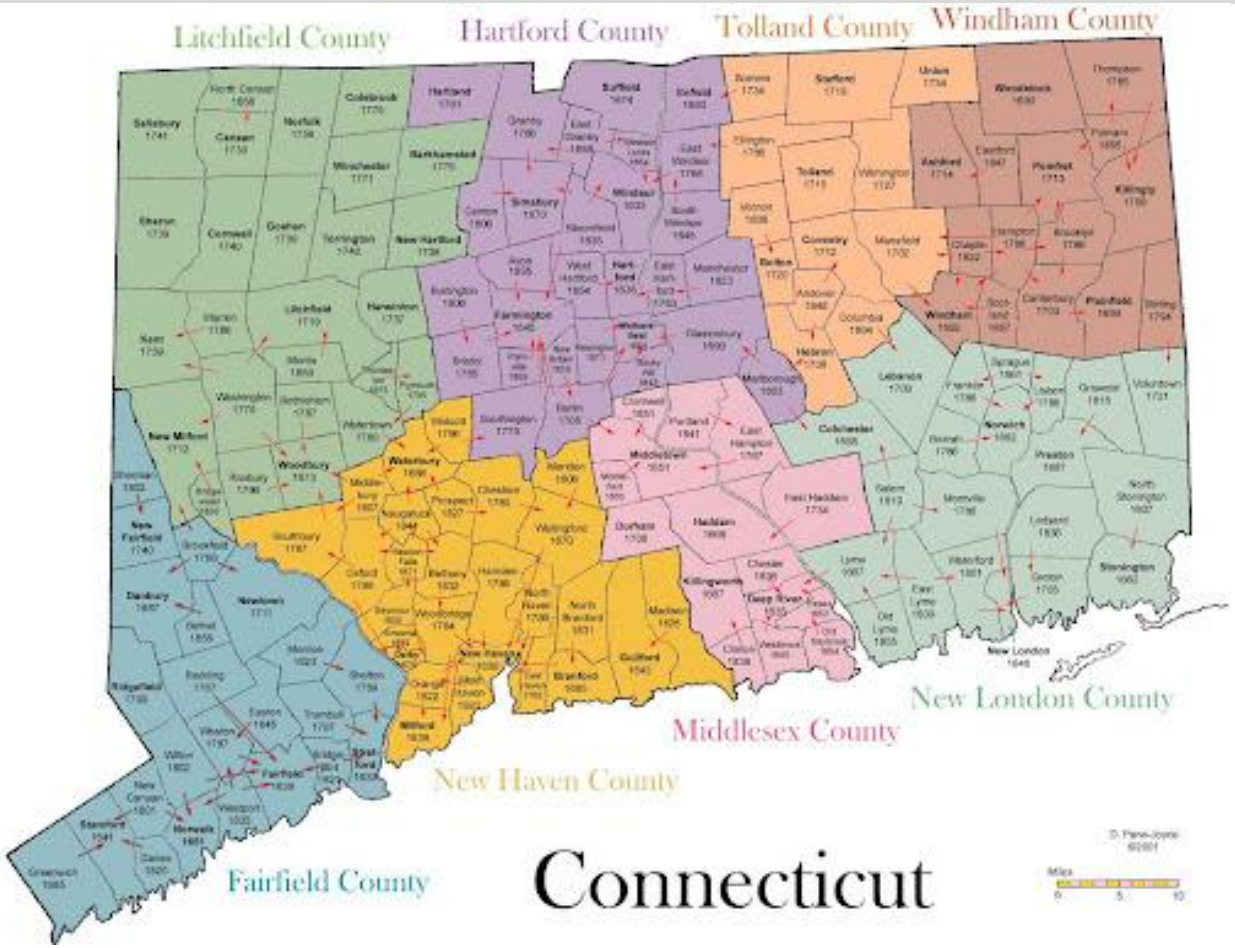
Background: Connecticut's EMS System

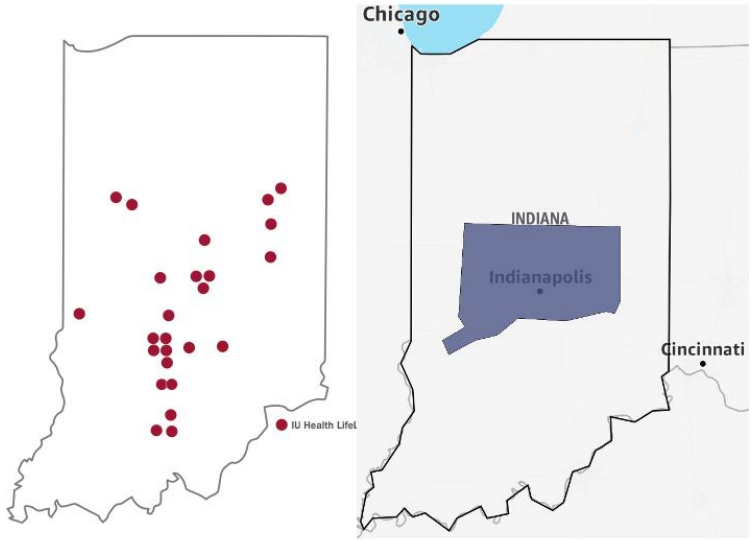


- 169 towns operating autonomously, 107 PSAPs

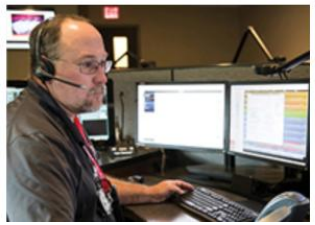
Previous work until 2024: filling the Gap in rural areas

IU Health LifeLine EMS System Overview

- 450 full-time team members
- 129 PRN team members
- Mechanical fleet across 25 bases:
  - 35 ALS/BLS ambulances
  - 5 helicopters
  - 6 critical care units

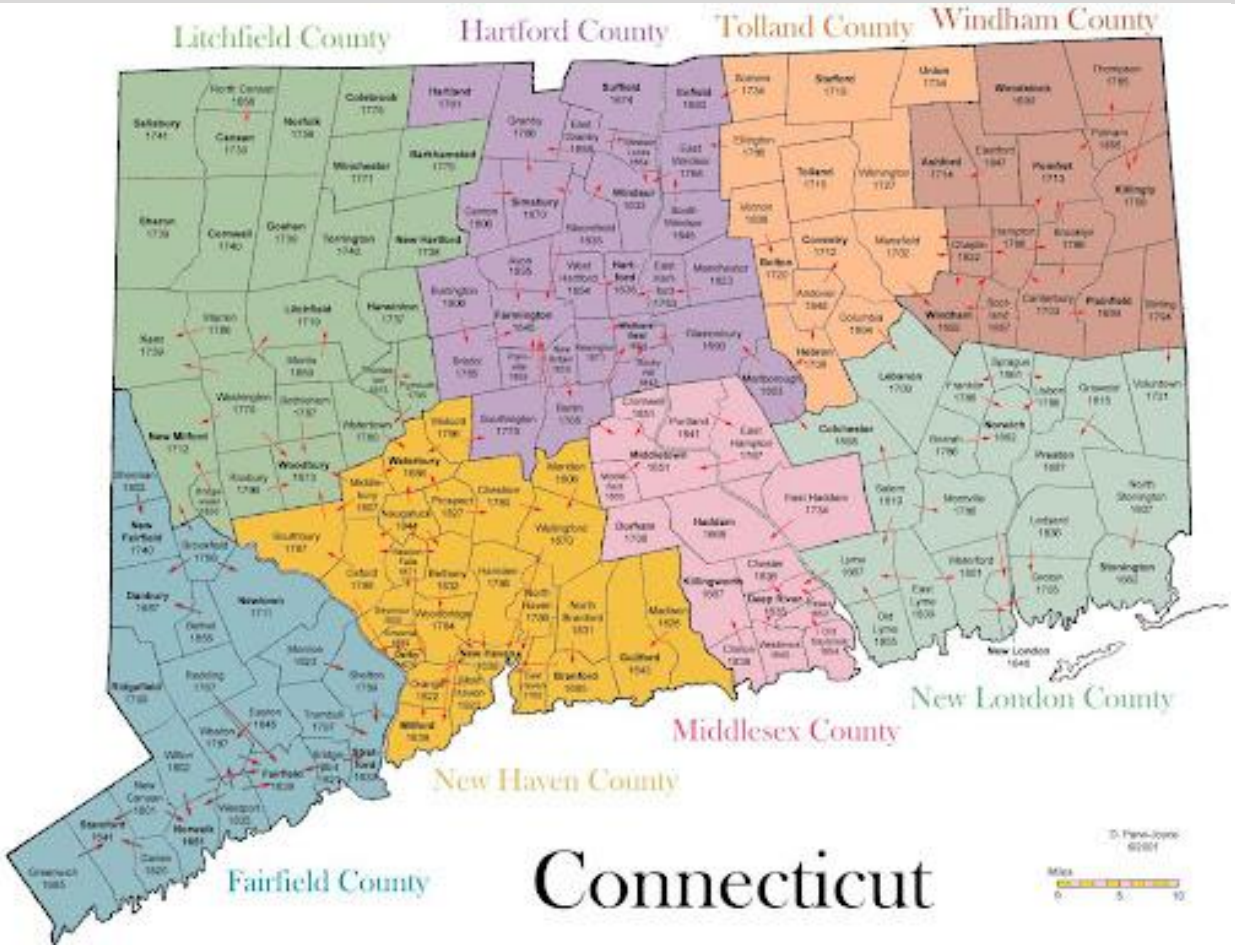


- 911-supported 5 counties in Indiana
- Supports 60% of Indiana's geography for on-scene emergency incidents
- **Annual runs:** 52,517
  - **Air:** 2,436
  - **Ground:** 50,081
- Largest Indiana EMS agency providing air and ground transport for all levels of care including specialized neonatal, high-risk obstetrics and ECMO



- IU Health LifeLine oversees a regional call center handling over 100,000 calls annually related to greater than 80,000 requests

Background: Connecticut's EMS System



- 169 towns operating autonomously, 107 PSAPs

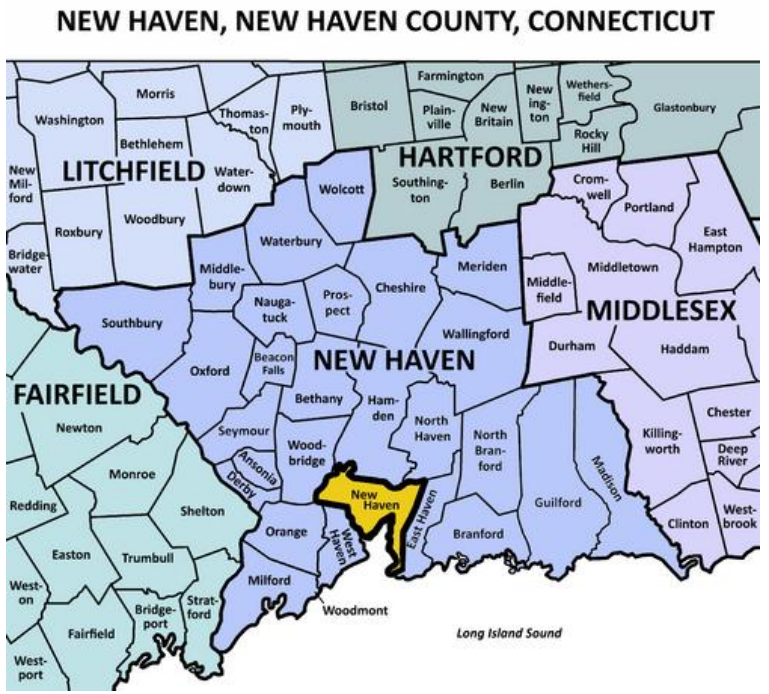
Key Concepts: EMS Regionalization

- **Maximizes Limited Resources**: Optimizes valuable public safety and EMS assets across broader geographic areas.
- **Sustains Community Capacity**: Uses multidisciplinary collaborations to maintain reliable, continuous local emergency response.
- **Streamlines Patient Transfers**: Ensures patients reach definitive care efficiently, even during severe resource shortages.
- **Relieves Urban Strain**: Provides overflow support for systems facing overwhelming 9-1-1 call volumes.
- **Protects Rural Coverage**: Prevents vital Advanced Life Support (ALS) units from being depleted during lengthy tertiary care transports.

New Haven Example (just 1 of 5 within our system)

- Volume & Dispatch
  - 9-1-1 Encounters: 146,116

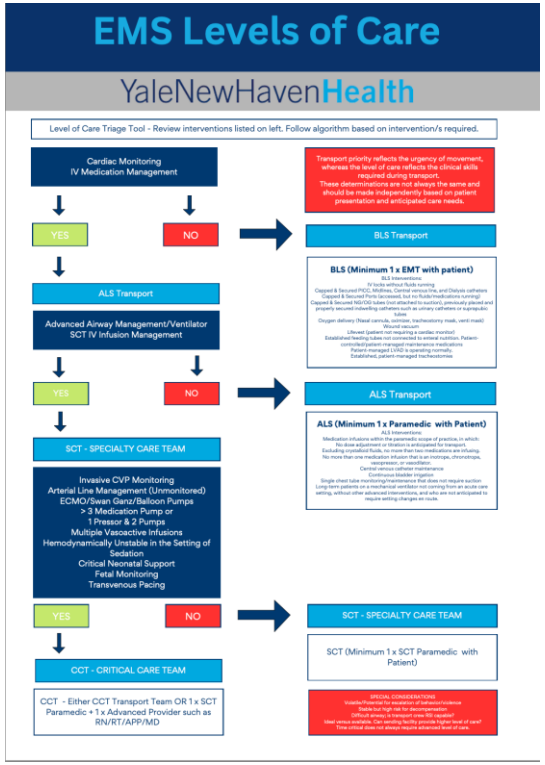
- Dispatch Infrastructure: 14 Primary and Secondary PSAPs coordinating 27 agencies
- Clinical Roster
  - Oversight includes 1,818 total clinicians across all levels of credentialing:
  - Paramedics: 511
  - EMTs: 1,296 (based on the 2024 credential tally)

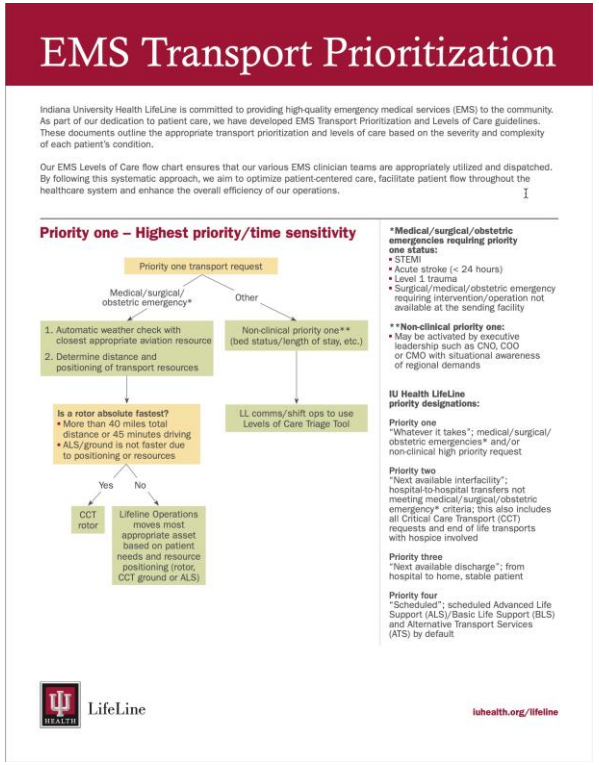


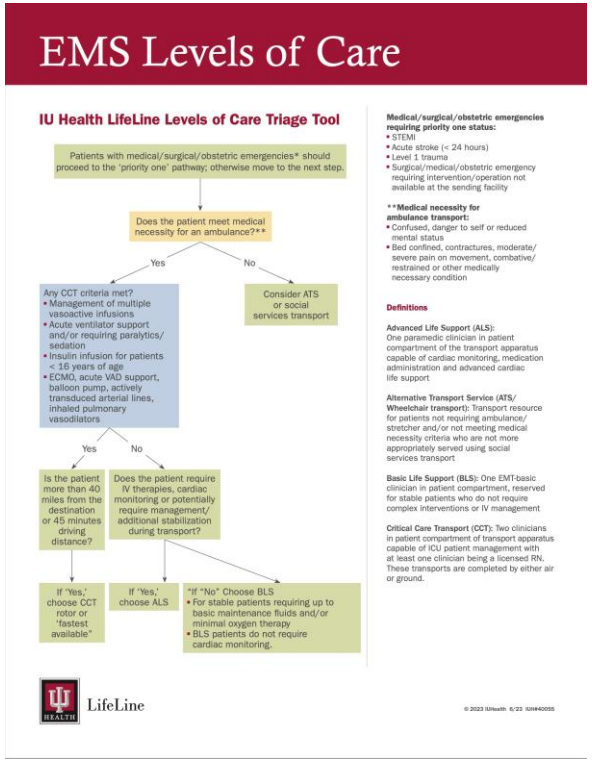
Gap Analysis for Regional Models

- **The Challenge**: Fragmented and siloed systems lacking regional and statewide standardization.
- **Historical Barriers**: Unification is often stalled by logistical complexities and resistance to yielding local autonomy.
- **Mission Focus**: Designing scalable, regional models that balance local autonomy with unified quality/operational standards where they make the most sense.

Resource Capability and Priority Consensus Through Coalition Building







An important aspect of our work is socializing EMS concepts into health system operations through collaboration and stakeholder engagement…

Standardizing Regional EMS Levels of Care and Responses

The Goal: Aligning patient needs with the right transport resource across the health system.

1. **Unified Nomenclature**: Adopting a common language for hospital teams, transfer centers, and EMS to ensure the right team is sent to the right patient.

2. **Stewardship of Resources**: Preserving advanced paramedic and CCT assets for the most acute, highly complex patients requiring tertiary care.

3. **Quality & Safety**: Establishing a "Care Signature" standard for training, QA/QI, compliance, and time-sensitive emergencies with relevant stakeholders.

The Solutions:

1. Regional response models for time sensitive emergencies and long-distance transports

2. Dispatch enhancement to protect valuable and limited resources
    1. Nurse navigator protocols
    2. Alternative destinations
    3. Novel response targeting social determinants of health

3. Multidisciplinary collaboration with the relevant stakeholders to get the right care to the patient or the patient to the right care while maintaining responsible stewardship of community resources

Questions?

Thank you!

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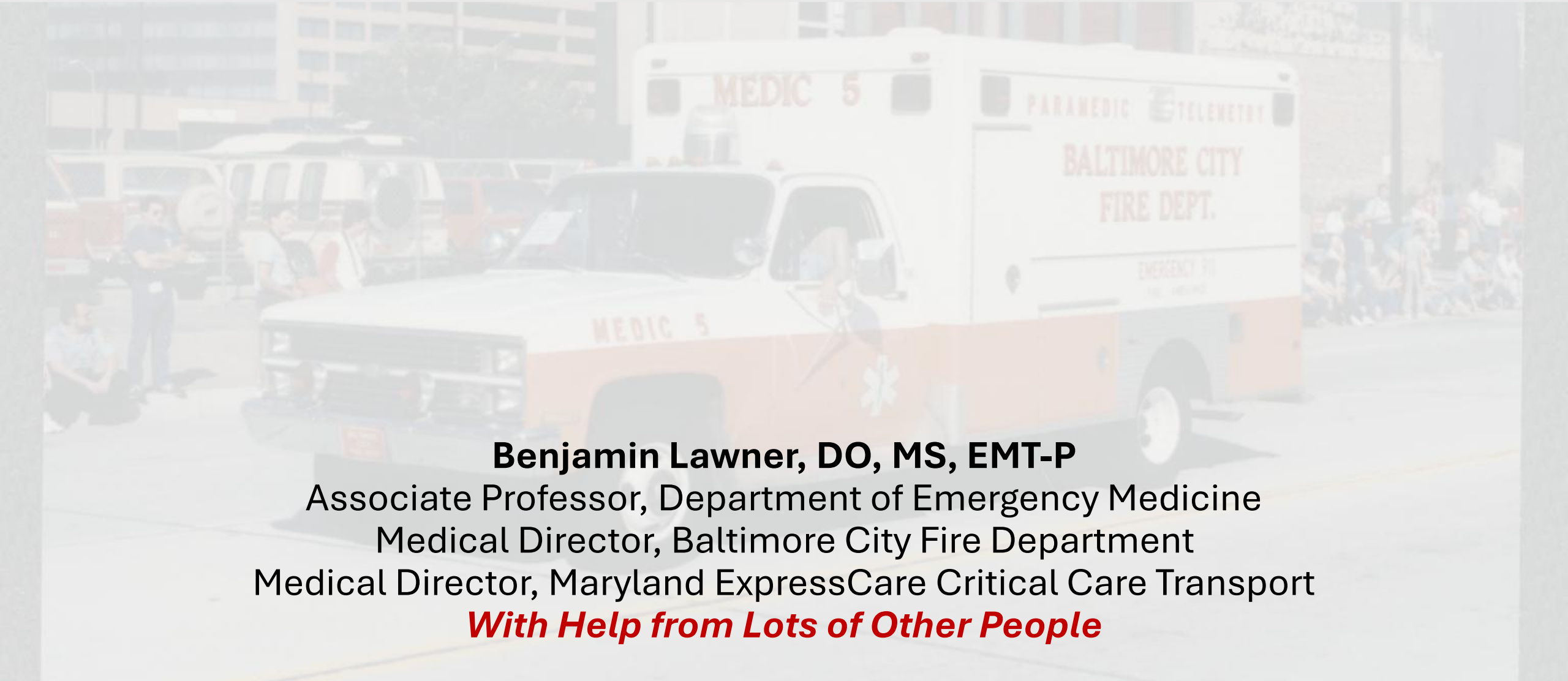
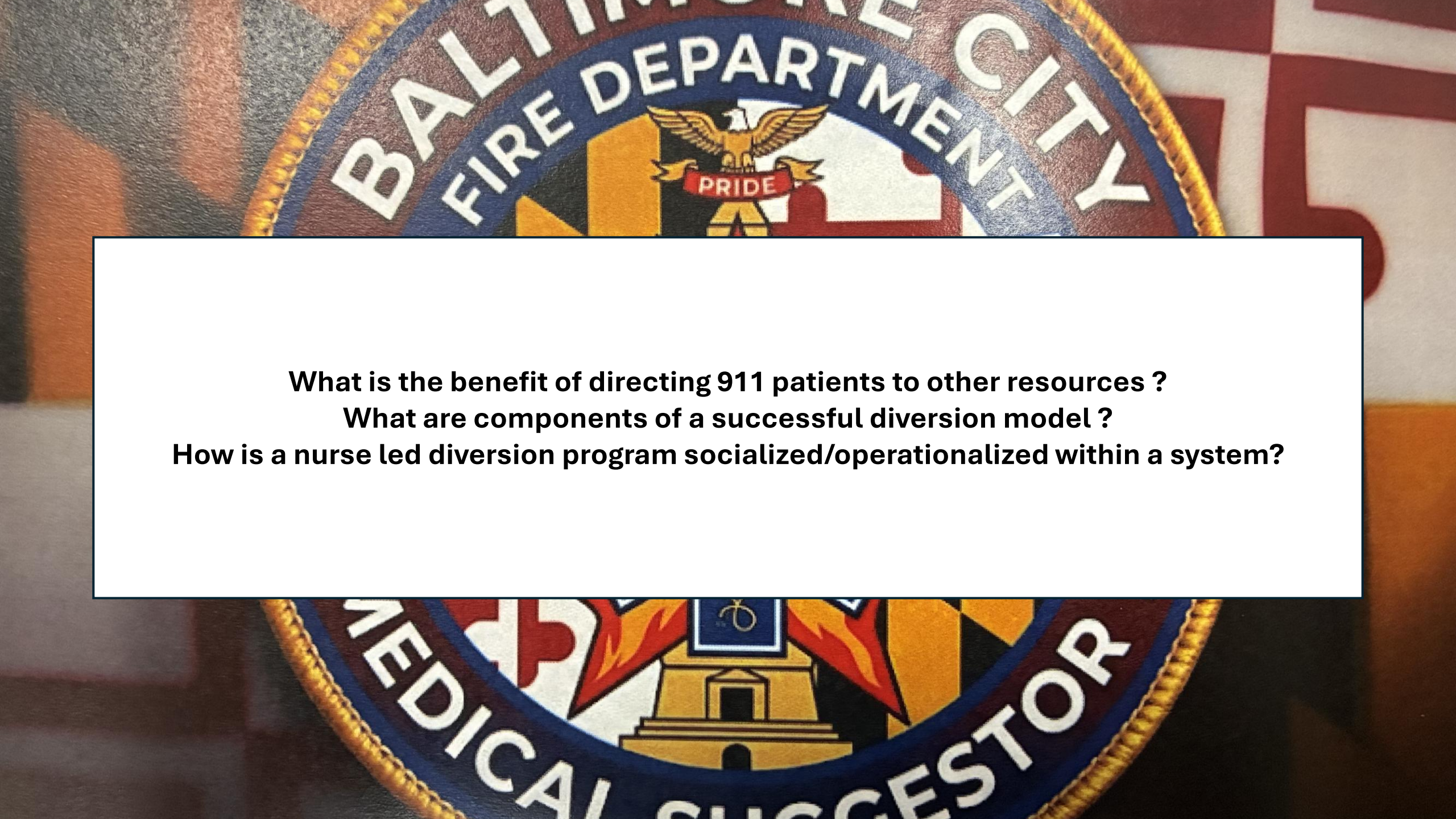
Navigating to Nowhere? Making Sense of Alternative Destinations



Benjamin Lawner, DO, MS, EMT-P
Associate Professor, Department of Emergency Medicine
Medical Director, Baltimore City Fire Department
Medical Director, Maryland ExpressCare Critical Care Transport
With Help from Lots of Other People



What is the benefit of directing 911 patients to other resources ?
What are components of a successful diversion model ?
How is a nurse led diversion program socialized/operationalized within a system?

Why Consider, “Nurse Nav?” Balti[illegible]nor[illegible]Version

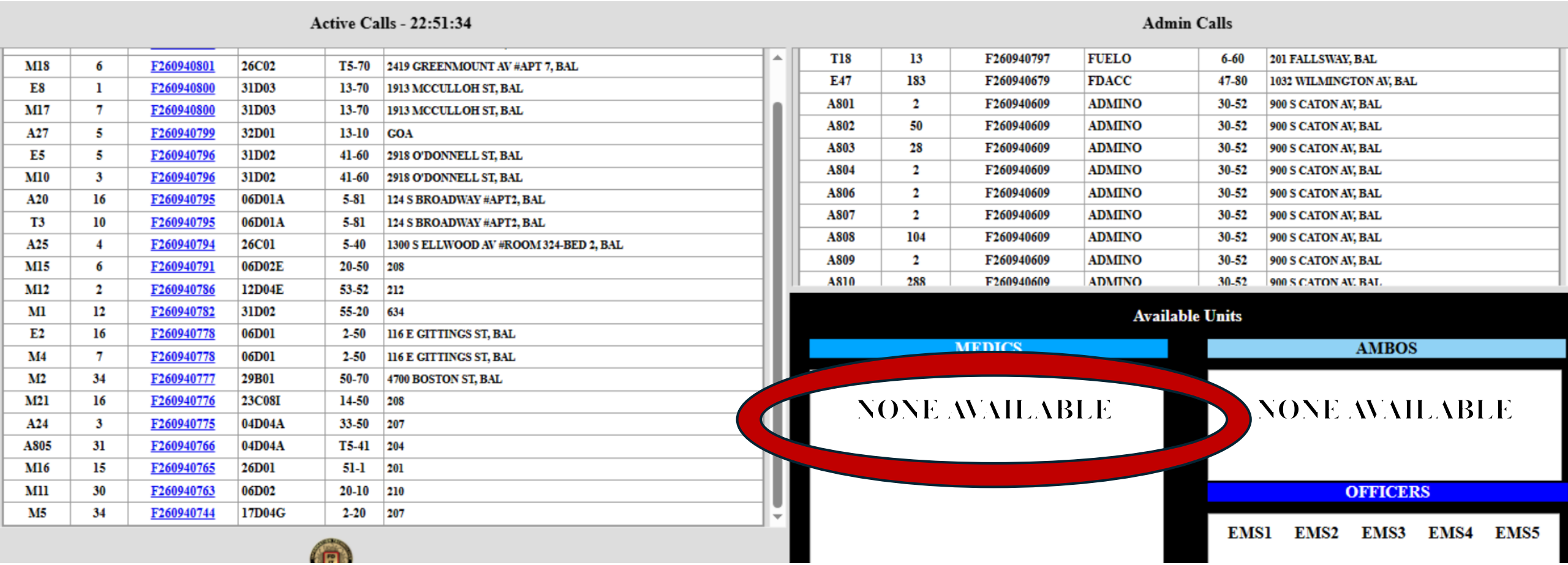
GLOBAL BUDGET

ED CROWDING

Wall time/Ambo availability

- **30 ambula[illegible]ces**
- **165,000 EMS calls**
- **Strained system**
- **Hospitals at capacity**
- **Need to prioritize life threats/time sensitive [illegible]llness**

Daily Operations



Active Calls - 22:51:34

M18	6	F260940801	26C02	T5-70	2419 GREENMOUNT AV #APT 7, BAL
E8	1	F260940800	31D03	13-70	1913 MCCULLOH ST, BAL
M17	7	F260940800	31D03	13-70	1913 MCCULLOH ST, BAL
A27	5	F260940799	32D01	13-10	GOA
E5	5	F260940796	31D02	41-60	2918 O'DONNELL ST, BAL
M10	3	F260940796	31D02	41-60	2918 O'DONNELL ST, BAL
A20	16	F260940795	06D01A	5-81	124 S BROADWAY #APT2, BAL
T3	10	F260940795	06D01A	5-81	124 S BROADWAY #APT2, BAL
A25	4	F260940794	26C01	5-40	1300 S ELLWOOD AV #ROOM 324-BED 2, BAL
M15	6	F260940791	06D02E	20-50	208
M12	2	F260940786	12D04E	53-52	212
M1	12	F260940782	31D02	55-20	634
E2	16	F260940778	06D01	2-50	116 E GITTINGS ST, BAL
M4	7	F260940778	06D01	2-50	116 E GITTINGS ST, BAL
M2	34	F260940777	29B01	50-70	4700 BOSTON ST, BAL
M21	16	F260940776	23C08I	14-50	208
A24	3	F260940775	04D04A	33-50	207
A805	31	F260940766	04D04A	T5-41	204
M16	15	F260940765	26D01	51-1	201
M11	30	F260940763	06D02	20-10	210
M5	34	F260940744	17D04G	2-20	207

Admin Calls

T18	13	F260940797	FUELO	6-60	201 FALLSWAY, BAL
E47	183	F260940679	FDACC	47-80	1032 WILMINGTON AV, BAL
A801	2	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A802	50	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A803	28	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A804	2	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A806	2	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A807	2	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A808	104	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A809	2	F260940609	ADMINO	30-52	900 S CATON AV, BAL
A810	288	F260940609	ADMINO	30-52	900 S CATON AV, BAL

Available Units

MEDICS

NONE AVAILABLE

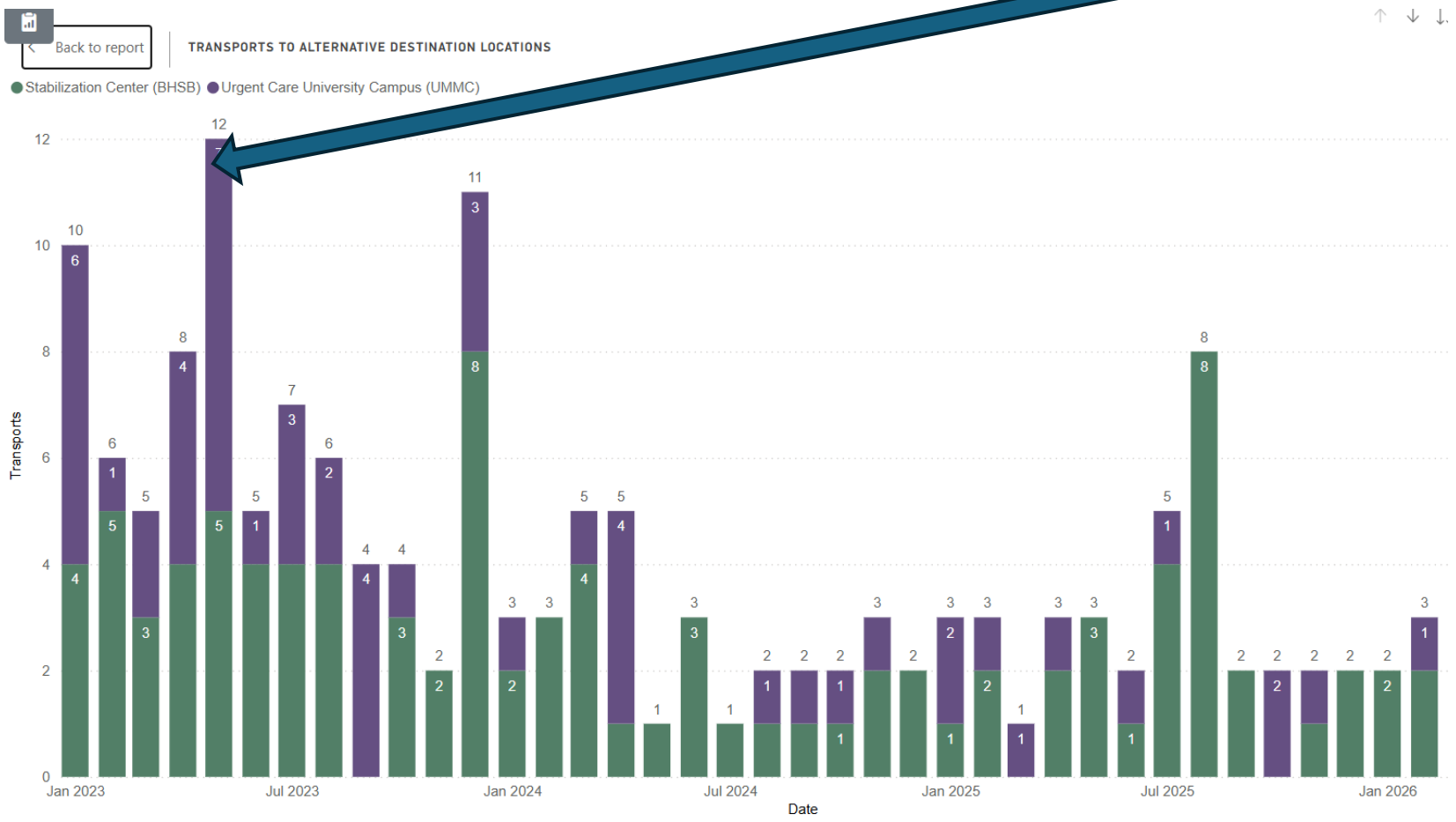
AMBOS

NONE AVAILABLE

OFFICERS

EMS1 EMS2 EMS3 EMS4 EMS5

What Hasn't Worked



12 referrals/month

Standalone Nurse Triage

Isolated Telemedicine

Changing culture immediately

Nurse Navigation Basics

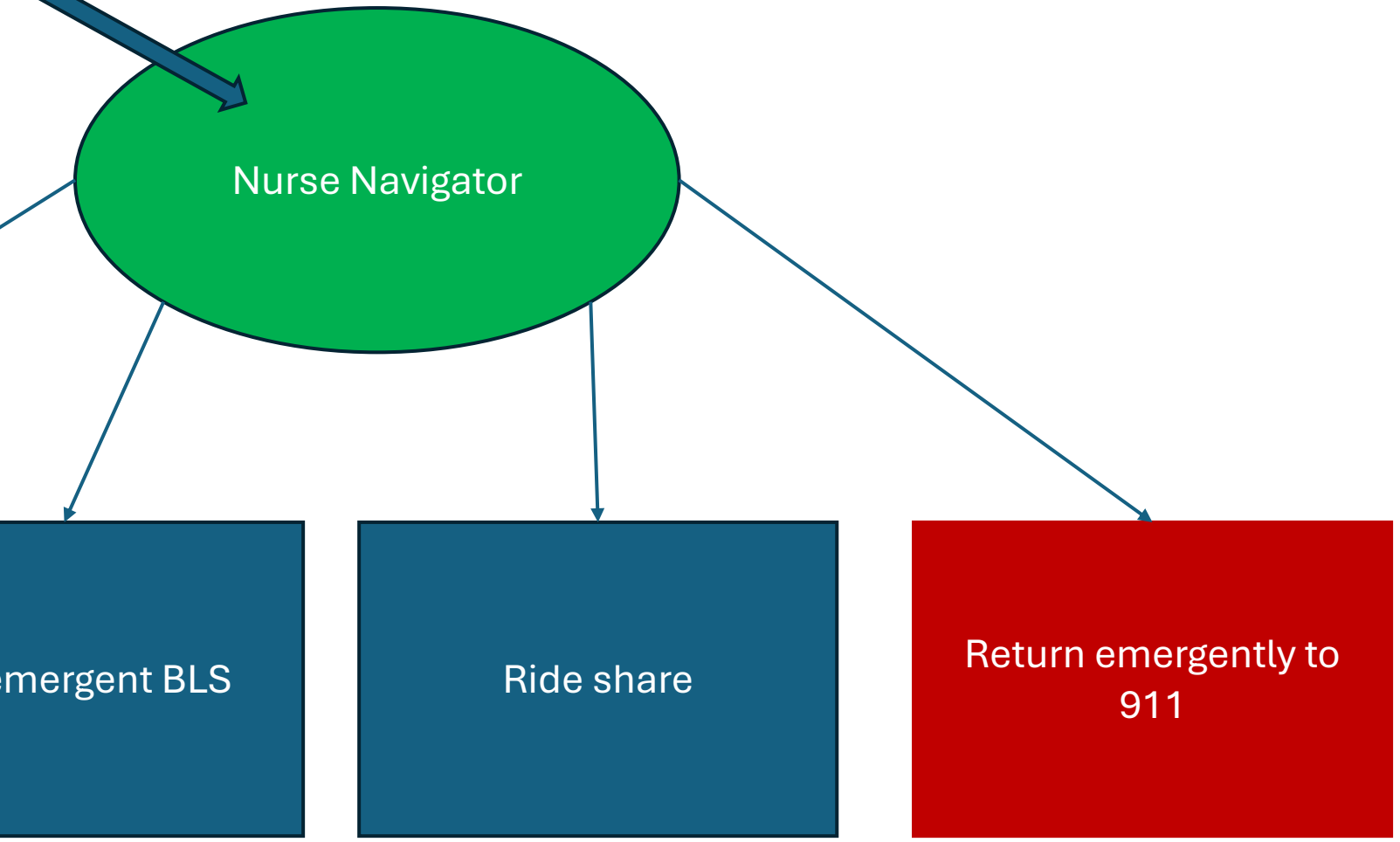
Real time
Front loaded
Community connection
Alternative transport
Medical intelligence

15. Electrocution / Lightning	
16. Eye Problems / Injuries	
MODERATE eye injuries	16A01
MINOR eye injuries	16A02
MEDICAL eye problems	16A03
17. Falls	
Marked (*) NOT DANGEROUS body area with deformi	17A01
NOT DANGEROUS body area	17A02
NON-RECENT (≥ 6hrs) injuries (without priority sympto	17A03
18. Headache	
Breathing normally	18A01
19. Heart Problems / A.I.C.D.	
Heart rate ≥ 50 bpm and < 130 bpm (without priority s	19A01
Chest pain/discomfort < 35 (without priority symptom	19A02
20. Heat / Cold Exposure	
Alert	20A01
21. Hemorrhage (Bleeding) / Lacerations	
NOT DANGEROUS hemorrhage	21A01
MINOR hemorrhage	21A02
22. Inaccessible Incident / Other Entrapments (Non-Traffic)	
No longer trapped (no injuries)	22A01
23. Overdose / Poisoning (Ingestion)	
POISONING (without priority symptoms)	23O01
24. Pregnancy / Childbirth / Miscarriage	
Waters broken (no contractions or presenting parts)	24O01
Override	24A00

The Process

Eligible determinant

- Call received by 911
- Screened for eligibility
- Consent from caller
- Health care facilities excluded



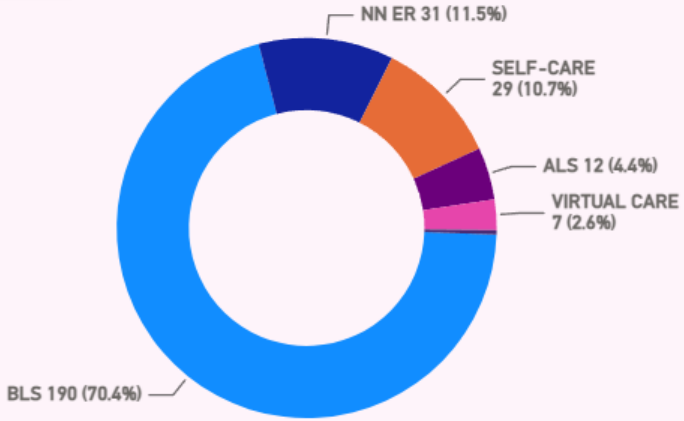
Transaction Overview

14-Day 911 Nurse Navigation Snapshot

Tutorial

270 calls were assessed by the GMR Nursing staff.
81 **(30.0%)** of the assessed calls resulted in a self-care, mobile urgent care, virtual care, referral to a medical facility or nurse ...s to the ER.

Transaction Dashboard

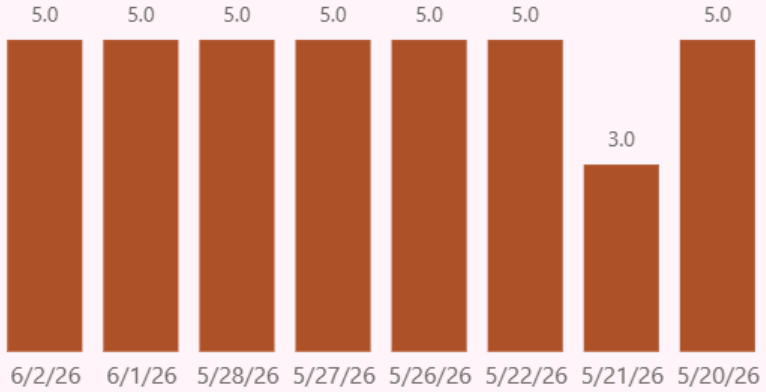


The average Patient Call Back Score was

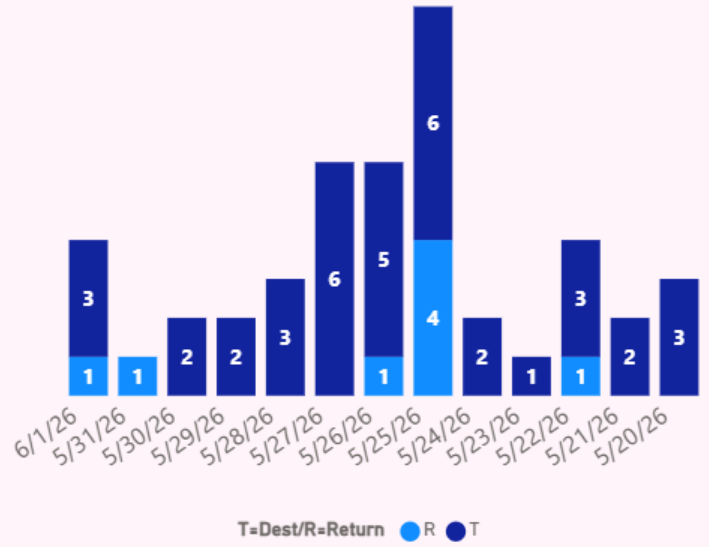
4.8

out of a Possible Score of

5.0



46 scheduled trips were completed (**Average 3 trips per day**). The average time of transport was **00:14:03**.

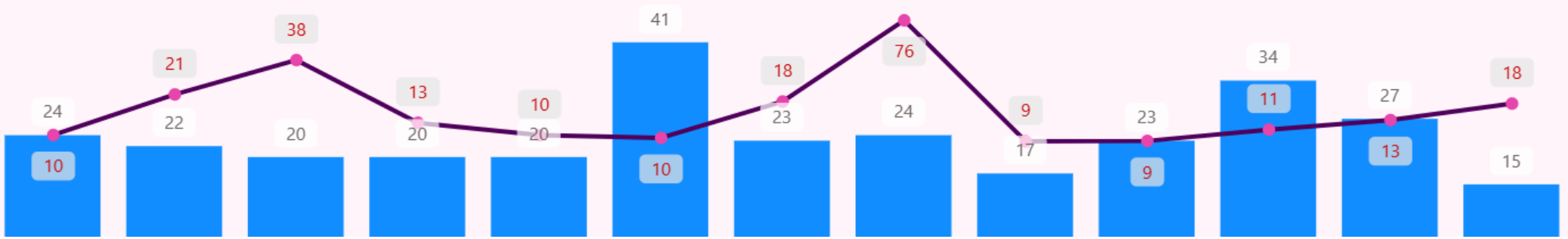


5/20/26

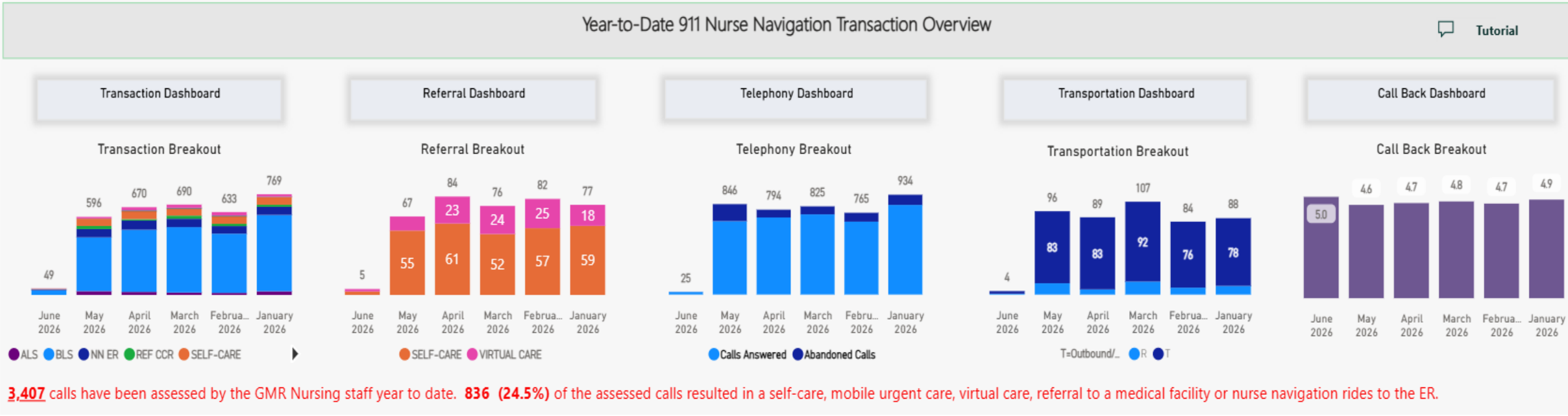
Thru

6/2/26

310 telephonic calls were answered by the GMR Nursing staff within **19** seconds



01/01/2026- Current



836/3407 (24.5%) resulted in navigation away from EMS

Referral Summary Data

911 Nurse Navigation Referral Destination Summary

Tutorial

Date

10/7/2025 — 4/5/2026

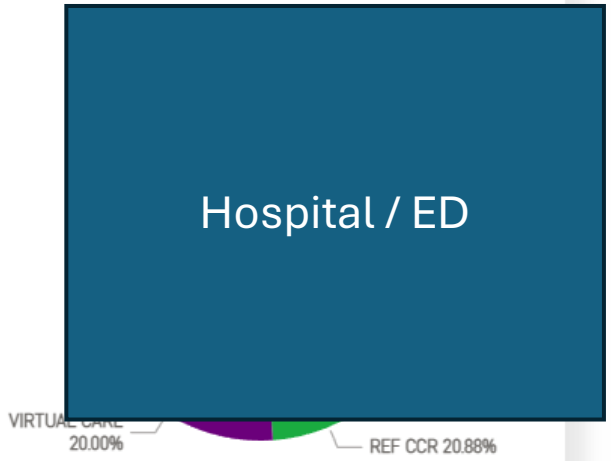
Referral Destination Filter: All

Transaction Response Filter: All

Insurance Name Filter: All

Monthly Filter: All

Referral Type Breakout



Hospital / ED

Urgent Care

Self Care/ Telemed

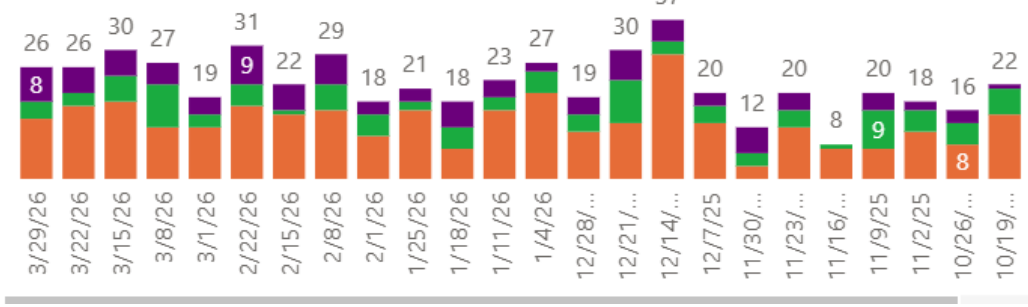
Referral Destination Breakout

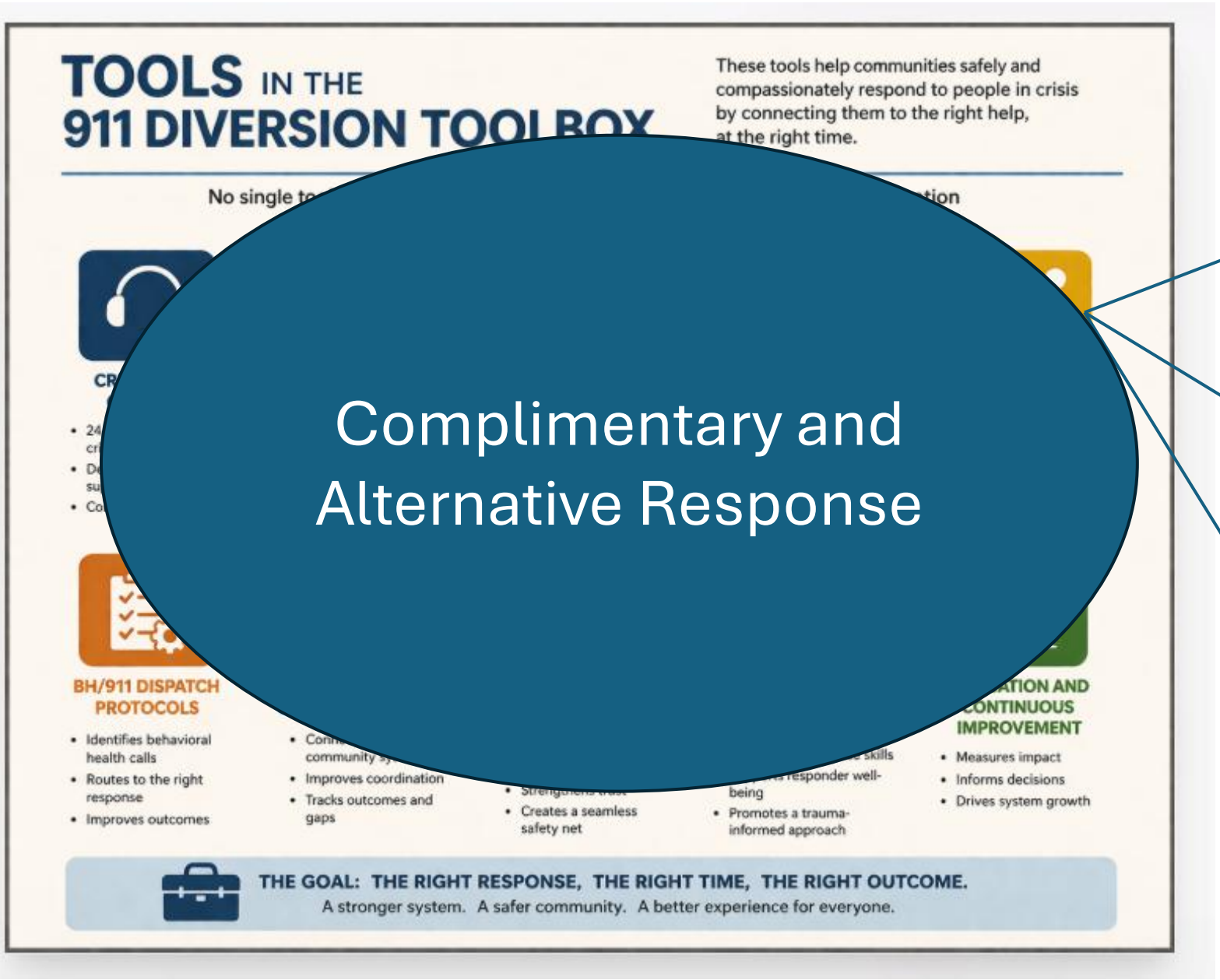
Referral Destination	Referral Count
TelePhysician - Rely MD	
Patient Choice Hospital (Ur	
Sinai Hospital	
Mercy Medical Center	
Patient Choice Clinic (Unlis	
UofM Medical Center	
Johns Hopkins Bayview Me	
MedStar Good Samaritan H	
Johns Hopkins Children's C	
Union Memorial Hospital	
Ascension Saint Agnes Hos	
UofM Medical Center - Mic	
MedStar Harbor Hospital	
Patient First Primary & UC - Bayview	11
UofM UC - Rotunda	10
MedStar UC - Federal Hill	9
UofM UC - Downtown	9
FQHC: Total Health Care - Westside	7
ExpressCare UC - Wilkens	6
ExpressCare of Near Sinai Hospital	5
FQHC: Jai Medical Center – Monument Street	5
Total	**565**

Market Referral Breakout

Insurance	NN ER	REF CCR	VIRTUAL CARE	Total
911 MD, Baltimore - Medicaid	161			
911 MD, Baltimore - Medicare	63			
911 MD, Baltimore - Other	54			
911 MD, Baltimore - Commercial	30			
911 MD, Baltimore - Uninsured	17			
911 MD, Baltimore - Kaiser	9			
Total	**334**			

Weekly Referral Breakout





Complimentary and Alternative Response

- Behavioral Health 911/988
- Nurse Navigation
- Tele911 Telemedicine

Healthcare Navigation from 911
The Columbus Version

Robert Lowe, MD FACEP
FAEMS

THE CITY OF
COLUMBUS
ANDREW J. GINTHER, MAYOR
DIVISION OF FIRE

Are we stuck in the past?

- We most accept and acknowledge we are a healthcare system
- Thus we have all levels of patient need and patient acuity
- Is it fair and just to send all those people to the most expensive healthcare option ?

CFD Version of Healthcare Navigation

- Its not about run reduction its run redistribution
- The CFD system
- Arresting the rate of growth

Patient Centered

- **What is the Goal?**

- **What is NOT the Goal?**

Healthcare Expenses

- According to a UnitedHealth Group study,
  - Average ED visit ($2,032)
  - Same patient in primary care setting ($167)
  - Same patient in urgent care setting ($193)
  - Virtual may be even less

National Data on healthcare expenses

- A catastrophic health expenditure
  - exceeds 40% of the patient's post-subsistence income.
  - disproportionately impacts lower income individuals.

- Single treat and release ED visit:
  - 18% of uninsured patients at risk for a catastrophic health expenditure.

National Data on healthcare expenses

- roughly 10% of Americans have medical debt

- 50% cannot afford employer plan deductible
- more than 1 in 3 cannot afford a $400 medical expense

- Insured
- ED visits cost $646 out-of-pocket on average

Options ?

- Is it fair and just to send all those people to the most expensive healthcare option ?

Our Plan

- Early stages of 911 referral line
- Run Cards
- Destinations - Local resources first
  - FHQs, keeping medical home, training programs,, mobile clinics

- Udalova V, Powers D, Robinson S, Notter I. Who Makes More Preventable Visits to the ER? https://www.census.gov/library/stories/2022/01/who-makes-more-preventable-visits-to-emergency-rooms.html
- Woody Scott K, Scott J, Sabbatini A, Chen C, Liu A, Dieleman J, Duber H. Assessing Catastrophic Health Expenditures Among Uninsured People Who Seek Care in US Hospital-Based Emergency Departments. JAMA Health Forum. 2021 Dec 30;2(12). doi: 10.1001/jamahealthforum.2021.4359
- Schwartz H, Rae M, Claxton G, Cotliar D, Amin K, Cox C. Emergency Department Visits Exceed Affordability Threshold for Many Consumers with Private Insurance. 2022 Dec 16. https://www.kff.org/health-costs/emergency-department-visits-exceed-affordability-threshold-for-many-consumers-with-private-insurance/
- Williams J. 'Avoidable' ER Visits Fuel Health Care Costs. 2019 Jul 22. https://www.usnews.com/news/health-news/articles/2019-07-22/avoidable-er-visits-fuel-us-health-care-costs

FREQUENT USER DATA

Robert B Dunne MD FACEP,
FAEMS
DFD MEDICAL DIRECTOR
Chief Medical Consultant
City of Detroit

E. Stein Bronsky, MD
Co-Chief CSFD Medical
Director Colorado Springs, CO

EMS IN DETROIT

- Total EMS encounters: 136,390
- 12% emergent priority
- Unique Patients: 16,349 (1800 account for 40%)
- Patient with recurrent transport and non: 7,938 (48%)

Verified Disposition Summary

_Disposition_Category	Total_Encounters	Unique_Patients	Percent_of_Total
EMS Transported	106631	14623	78.18
No Transport	3138	2445	2.3
Other / Review	8069	4966	5.92
Refused Transport	18552	7575	13.6

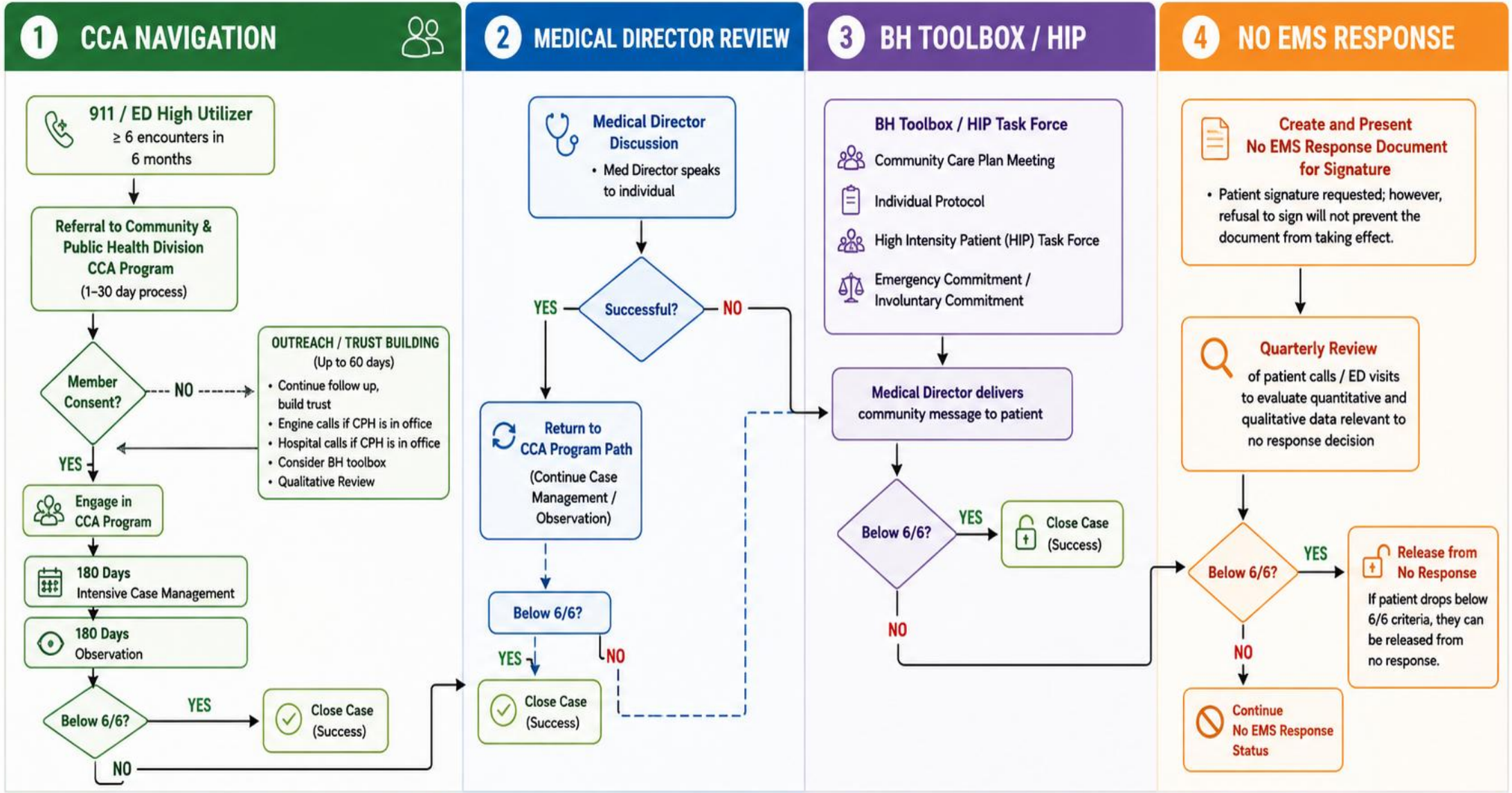
TOP PROVIDER IMPRESSIONS

Top 15 Provider Primary Impressions

Situation Provider Primary Impression Description Only (eSituation.11)	Total_Encounters	Unique_Patients	Mean_Age
Not Recorded	10730	5880	48.75372995151063
General Malaise (Unknown Cause)	10090	5117	50.25691621219633
Pain: Location Not Otherwise Listed (Non-Traumatic)	4618	3136	46.95210229735587
No Apparent Illness or Injury	3871	2664	53.214987080103356
Generalized Abdominal Pain	3862	2579	45.8909891248058
Altered Mental Status, Unspecified	3434	2489	61.75138443602448
Pain: Headache or Migraine	3338	2143	46.14444111477375
Chest Pain, Non-Cardiac	3324	2306	51.03491872366045
Weakness (Unable to Diagnosis Specific Cause)	3298	2418	61.07643312101911
Pain: Leg Pain (Non-Traumatic) Unspecified Cause or Location	3111	2091	53.62873674059788
Abdominal Pain/Problems	2793	2120	45.30433225921948
Pain: Chronic Pain, Unspecified	2694	1815	53.764662212323685
Respiratory: Respiratory Distress Unknown Cause	2506	1827	57.47784431137725
Nausea/Vomiting (Unknown Etiology)	2479	1939	42.158935054457444
Back Pain (Non-Traumatic)	2278	1602	50.594820017559265

DISPATCH CALL PRIORITIES

	Count	% of Response Priority	% Total	
EMS 1	6161	10.20%	3.76%	
EMS 2	17454	24.97%	10.65%	
EMD Completed	132167		80.65%	
Omega	2169		1.32%	
Alpha	32094		19.58%	
Bravo	18316		11.18%	
Charlie	30916		18.86%	
Delta	43999		26.85%	
Echo	4673		2.85%	



PROGRAM NOTES

- Success is returning to a baseline below the program entry threshold of 6 calls to 911 or 6 ED visits in 6 months.
- Throughout the process, qualitative information will be considered and evaluated to determine if the individual has specific needs that require an adjustment to this standard process.

- ED/911 high users new to the CSFD CCA program will enter at the initial referral point.
- ED/911 high users with previous referrals or navigation will enter the process at the BH Toolbox / HIP Task Force text box or No Response box.

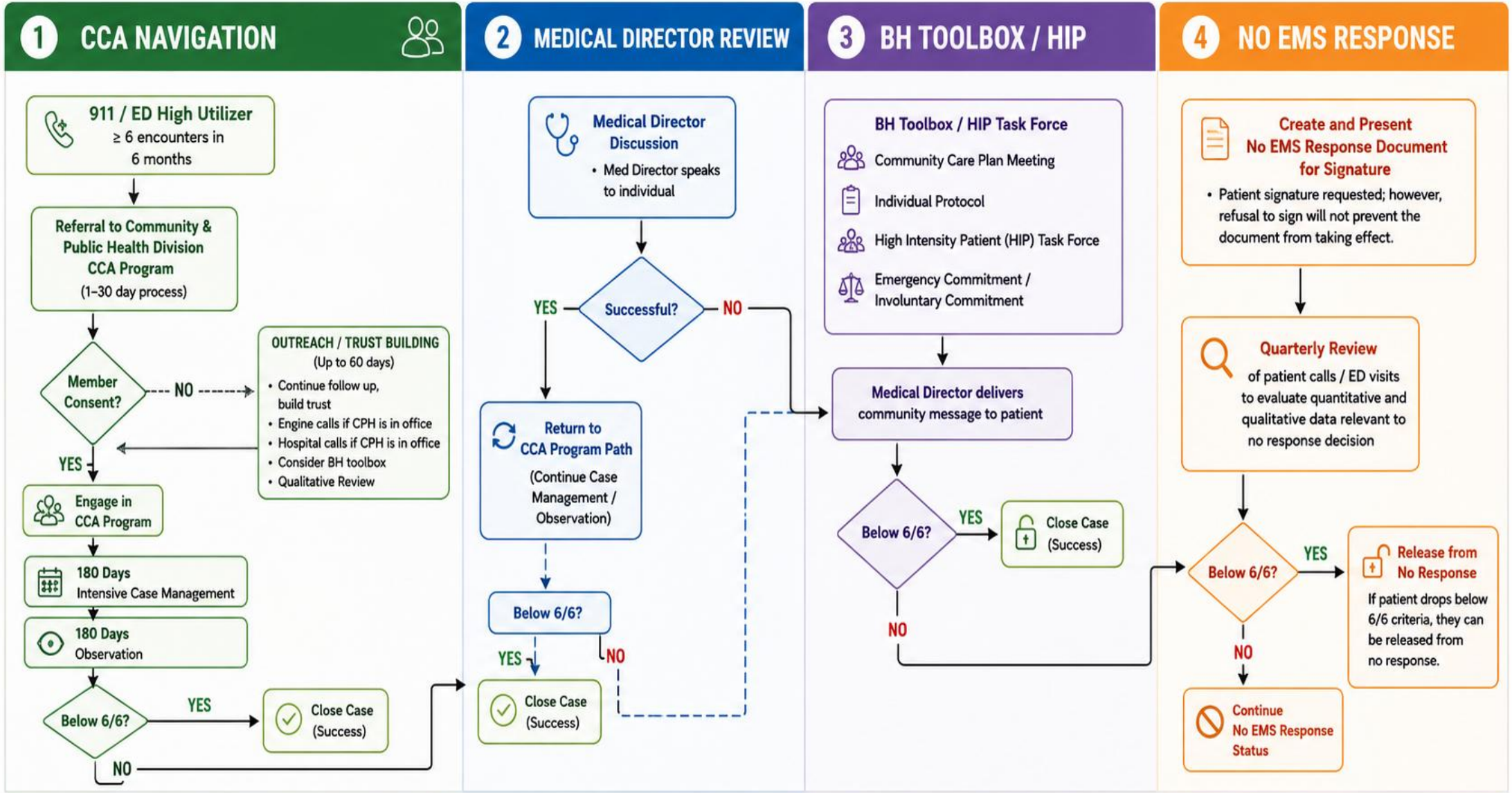
BH TOOLBOX / HIP COMPONENTS

- Community Care Plan Meeting
- Individual Protocol
- High Intensity Patient (HIP) Task Force
- Emergency Commitment / Involuntary Commitment

TIMELINES AT A GLANCE

- 1–30 day intake process
- Up to 60 days for outreach / trust building
- 180 days intensive case management
- Followed by 180 days observation
- Quarterly review during no response


Operations
Alternative Response
Super utilizer program
Homeless outreach program (HOT)
Aging in place program(APP)
Transitional assistance program (TAP)
Community response team (CRT)
Alternate response team (ART)
Community medicine (CMED)
Ambulance only responses
Fire and ambulance response
Community Public Health Division



PROGRAM NOTES

- Success is returning to a baseline below the program entry threshold of 6 calls to 911 or 6 ED visits in 6 months.
- Throughout the process, qualitative information will be considered and evaluated to determine if the individual has specific needs that require an adjustment to this standard process.

- ED/911 high users new to the CSFD CCA program will enter at the initial referral point.
- ED/911 high users with previous referrals or navigation will enter the process at the BH Toolbox / HIP Task Force text box or No Response box.

BH TOOLBOX / HIP COMPONENTS

- Community Care Plan Meeting
- Individual Protocol
- High Intensity Patient (HIP) Task Force
- Emergency Commitment / Involuntary Commitment

TIMELINES AT A GLANCE

- 1–30 day intake process
- Up to 60 days for outreach / trust building
- 180 days intensive case management
- Followed by 180 days observation
- Quarterly review during no response