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Beyond 911: Mobile Integrated Healthcare in Modern EMS

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University of Kentucky College of Medicine Rural Physician Leadership Program

Disclosures

- No relevant financial disclosures
- No commercial support or conflicts of interest related to this presentation

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Practice gap

- Rural communities continue to face gaps in access, transportation, and chronic disease management.

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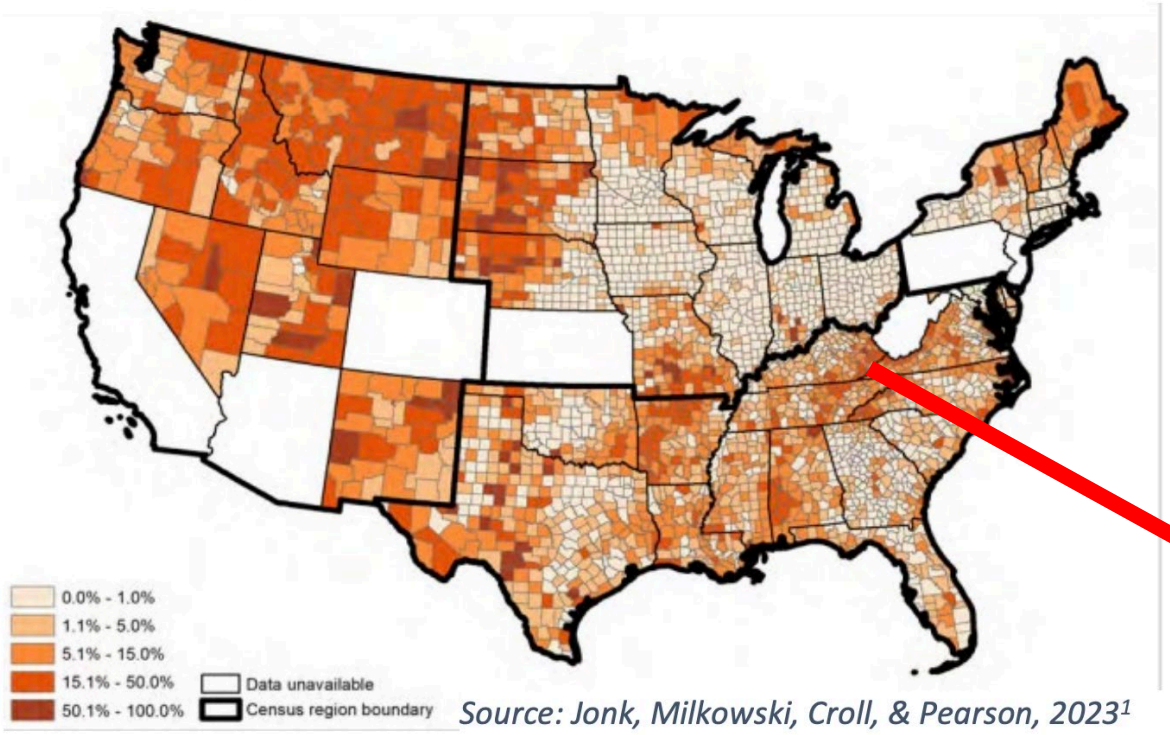
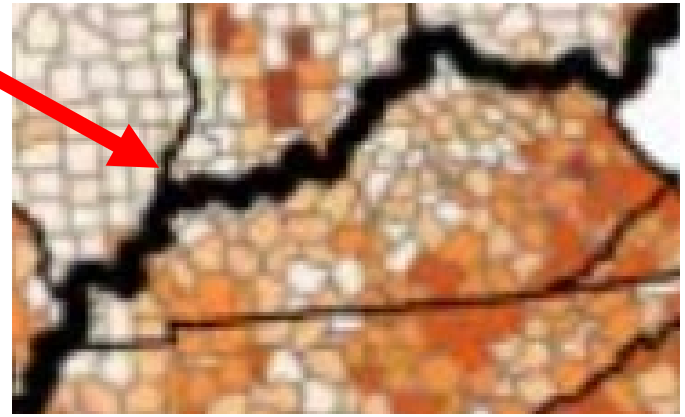
Figure 1 Ambulance Deserts in the US



Source: Jonk, Milkowski, Croll, & Pearson, 2023[1]

Figure adapted from NRHA policy brief in 2024

- Huge ambulance deserts throughout the nation, including eastern Kentucky.
- 84 percent of rural counties were affected by ambulance desert (defined by area where people live more than 25 minutes from an ambulance)



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Educational need:

- Mobile Integrated Healthcare (MIH) may reduce ED utilization and improve access to underserved populations.
- Understanding the current framework and climate surrounding MIH is foundational to expanding this resource in rural communities.

Objectives

- Compare the core components and models of Mobile Integrated Healthcare (MIH).
- Compare the effects of MIH programs on ED utilization, readmission, 911 call frequency, and healthcare costs.
- Evaluate the influence of reimbursement policies, regulatory requirements, and workforce capacity of MIH programs at state and national levels.

Expected outcomes

- Participants will be able to:
  - Describe the basic EMS levels of care (EMR, EMT, AEMT, Paramedic)
  - Distinguish the major MIH models.
  - Describe evidence from recent literature regarding MIH effects on emergency department utilization, hospital readmissions, 911 call frequency, and healthcare costs.
  - Assess how reimbursement policies, regulatory requirements, and workforce capacity effect MIH implementation.
  - Appraise future directions for MIH implementation in YOUR COMMUNITY, state, and national levels.

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EMS: The current state (Overview of EMS)

- **EMR:** 4-6 weeks of training.

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- **Advanced EMT:** Requires a current EMT certification, plus an additional 3-6 months of training.

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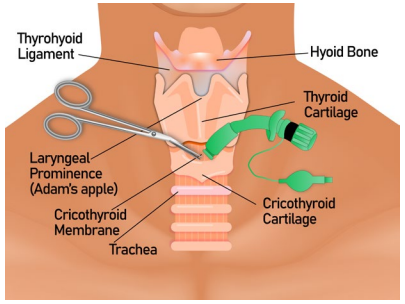
- **EMT:** Timeline varies, but anywhere from 1-6 months.
- **Advanced EMT:** Requires a current EMT certification, plus an additional 3-6 months of training.
- **Paramedic:** Requires current EMT/AEMT certification, plus 1-2 years of additional training (some shorter programs exist, very few bachelors programs)

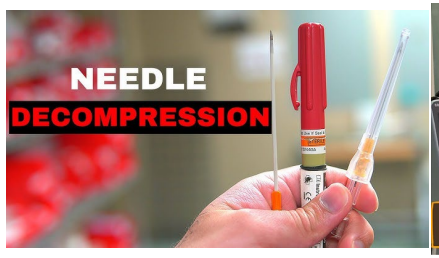
EMS: Current state (Training focus)

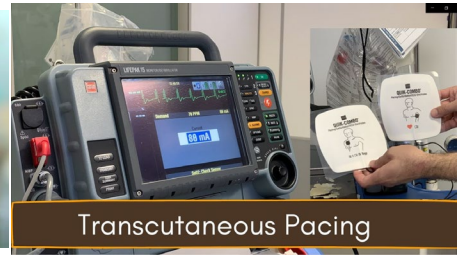
- **Major focus at all levels:** Life threatening conditions and interventions to immediately stabilize patients.
  - Additional focus on operations, scene safety, and transport considerations.

A paramedic shows up to your home or hospital, so what?

Baseline paramedic (protocol variation)







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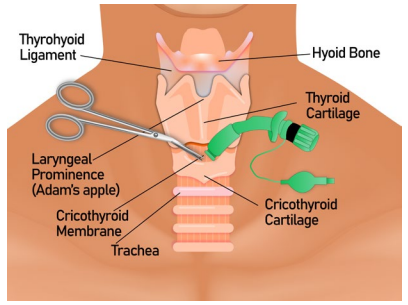

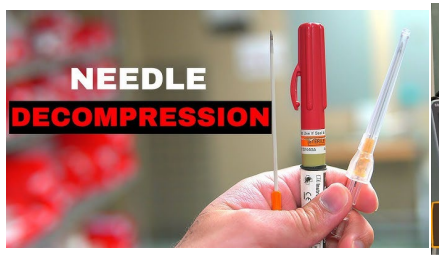

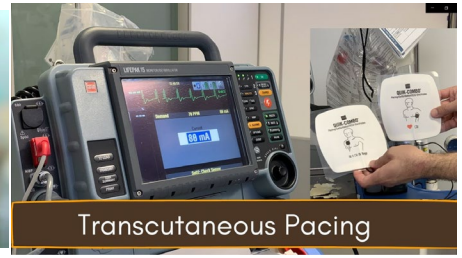

Occasional on ground, but typical for flight/CC

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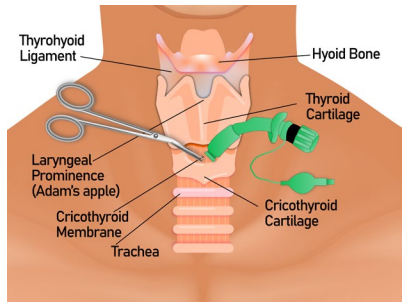

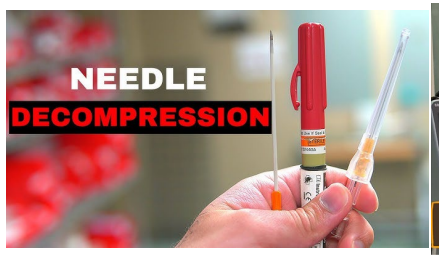

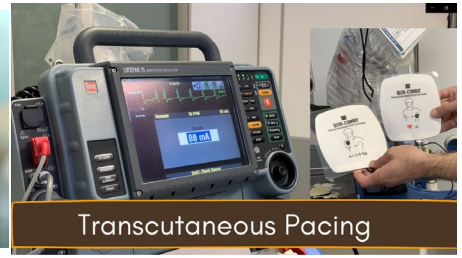

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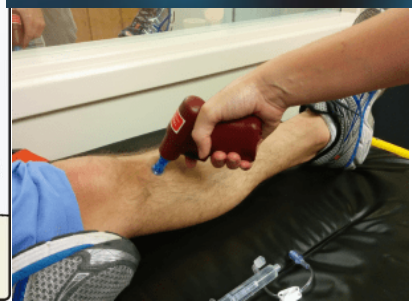
AEMT (Pain management in Kentucky)



**NOTE: Paramedics have this also

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Summary so far

- Practice gap
- Educational need
- Basics of EMS training and education
- Brief summary of paramedic/AEMT key capabilities in 911 models of care
- Questions?

911 emergencies are exciting, but what is Mobile Integrated Healthcare (MIH)?

- **Definition:** MIH is a patient centered program, focused on bringing resources to the patient based on community need.

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2) Resource in place already?

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3) No resource available?
→ MIH PROGRAM IMPLEMENTATION

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4)Target specific outcomes

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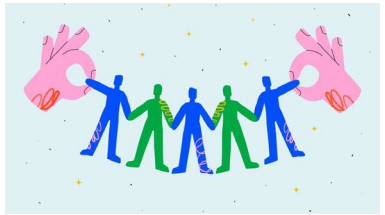

RE-ASSESS

4)Target specific outcomes

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911 emergencies are exciting, but what is Mobile Integrated Healthcare (MIH)?

- **Definition:** MIH is a patient centered program, focused on bringing resources to the patient based on community need.

3) No resource available?
→ MIH PROGRAM IMPLEMENTATION

Requires training/input from community healthcare leaders (YOU!!)

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Major models of MIH

- Post discharge follow-ups
- High ED/911 user
- Chronic disease management
- Additional uses:
  - Opioid use disorder programs
  - Telemedicine
  - Mental health crisis response teams

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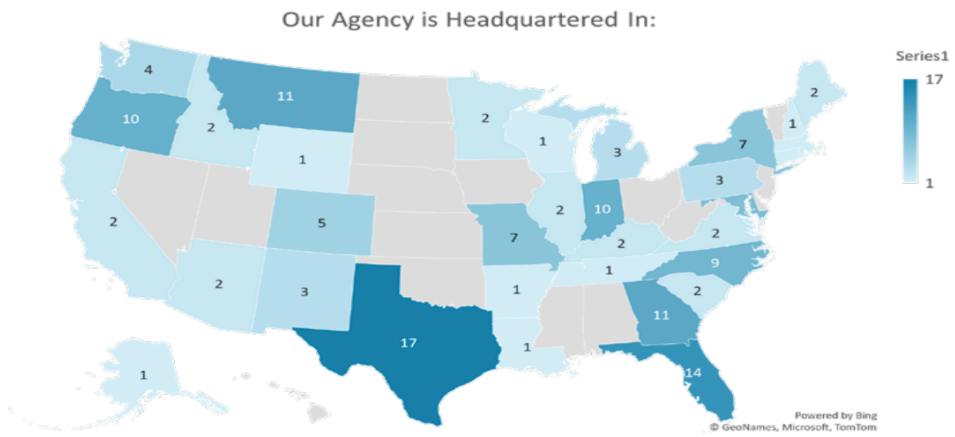
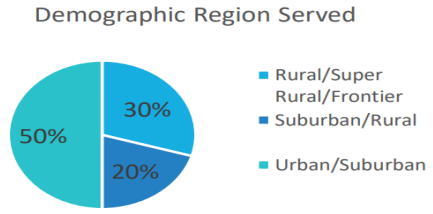
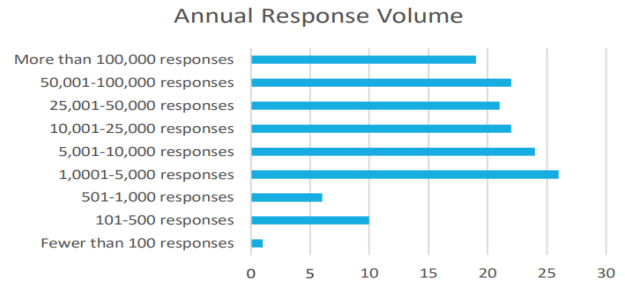
2023 National Survey on MIH-CP Programs

Survey Demographics







(NAEMT, 2023)

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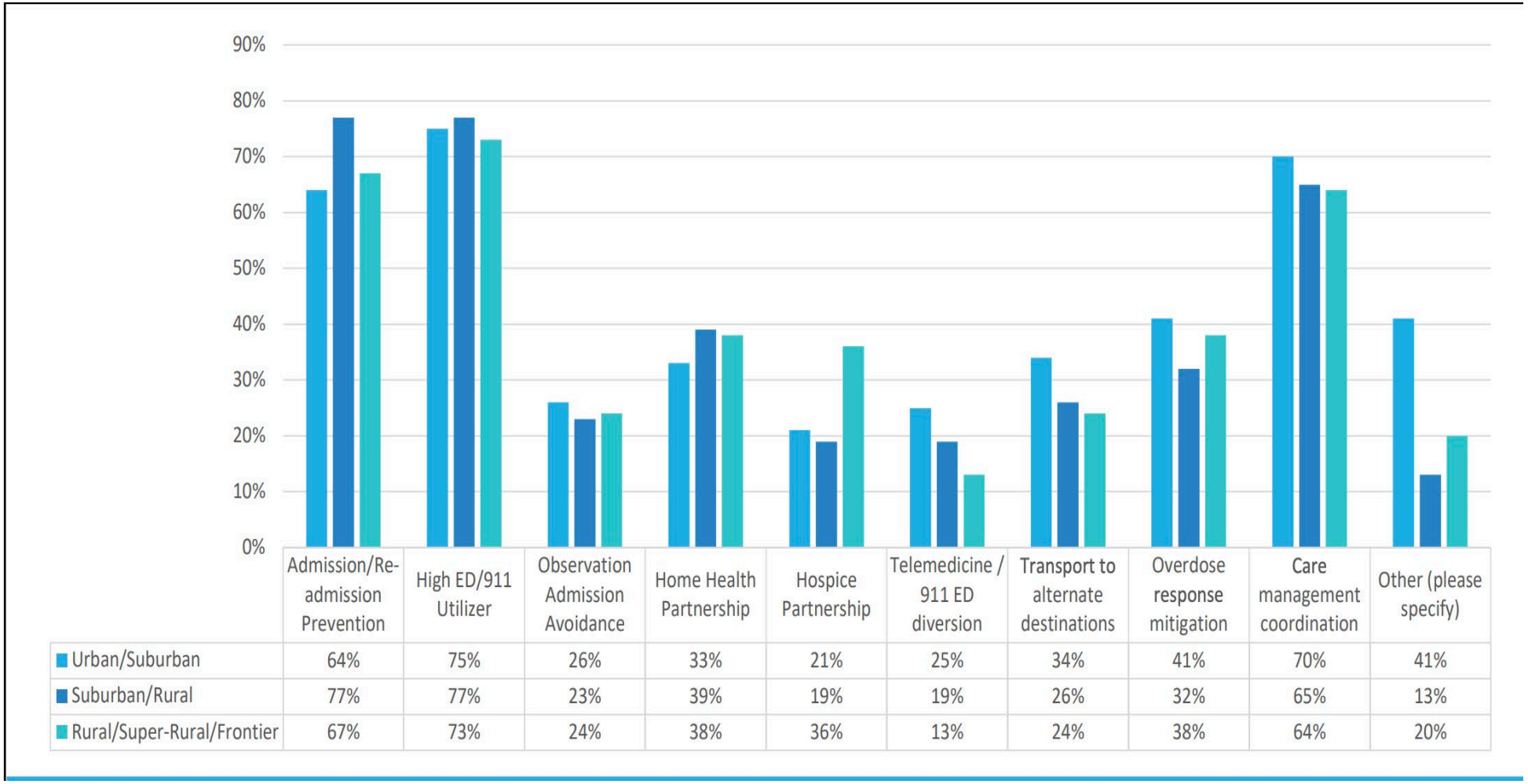

	Admission/Re-admission Prevention	High ED/911 Utilizer	Observation Admission Avoidance	Home Health Partnership	Hospice Partnership	Telemedicine / 911 ED diversion	Transport to alternate destinations	Overdose response mitigation	Care management coordination	Other (please specify)
Urban/Suburban	64%	75%	26%	33%	21%	25%	34%	41%	70%	41%
Suburban/Rural	77%	77%	23%	39%	19%	19%	26%	32%	65%	13%
Rural/Super-Rural/Frontier	67%	73%	24%	38%	36%	13%	24%	38%	64%	20%

Figure 1: Programs by demographic region served. Adapted from a national survey of MIH programs (NAEMT, 2023)

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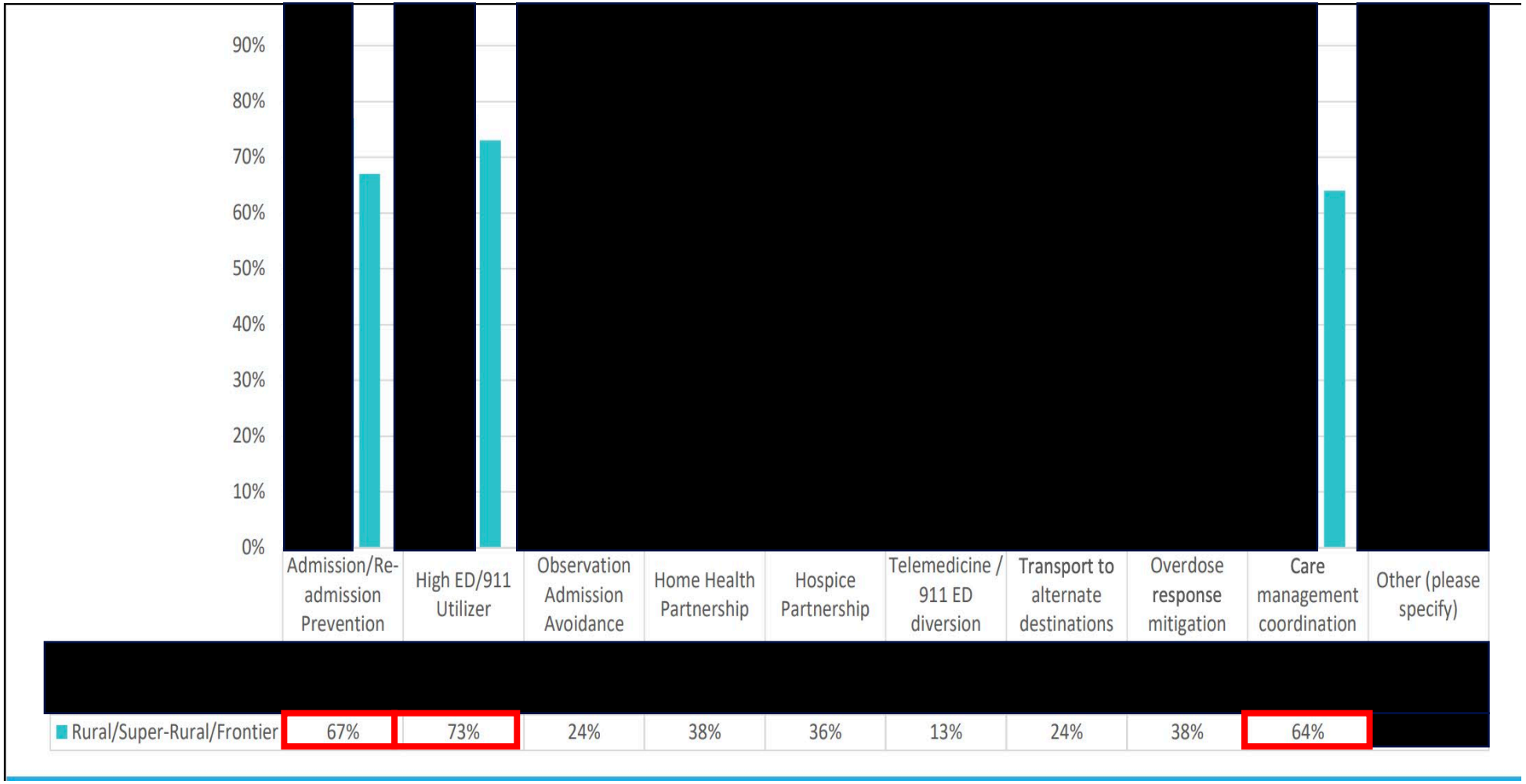

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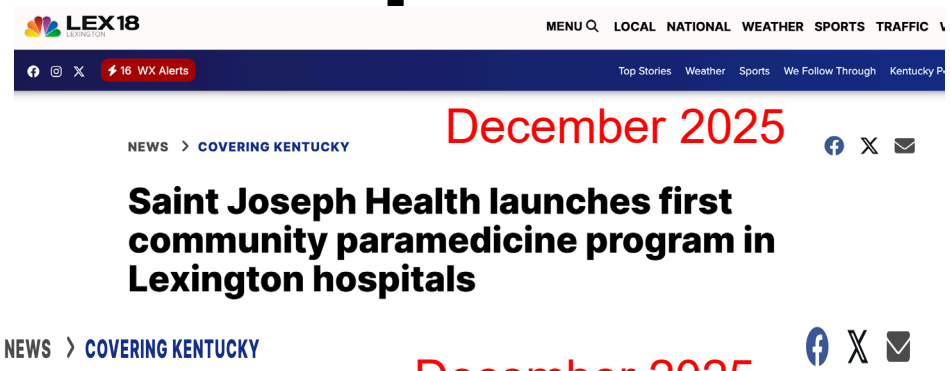
Snapshot of MIH in Kentucky



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Snapshot of MIH in Kentucky

February 2026

Kentucky Lantern

ECONOMY ENVIRONMENT GOVERNMENT HEALTH

HEALTH

New beginnings for Lexington's Community Paramedicine team

BY SABRIEL METCALF | KENTUCKY
PUBLISHED 6:45 AM ET AUG. 13, 2025

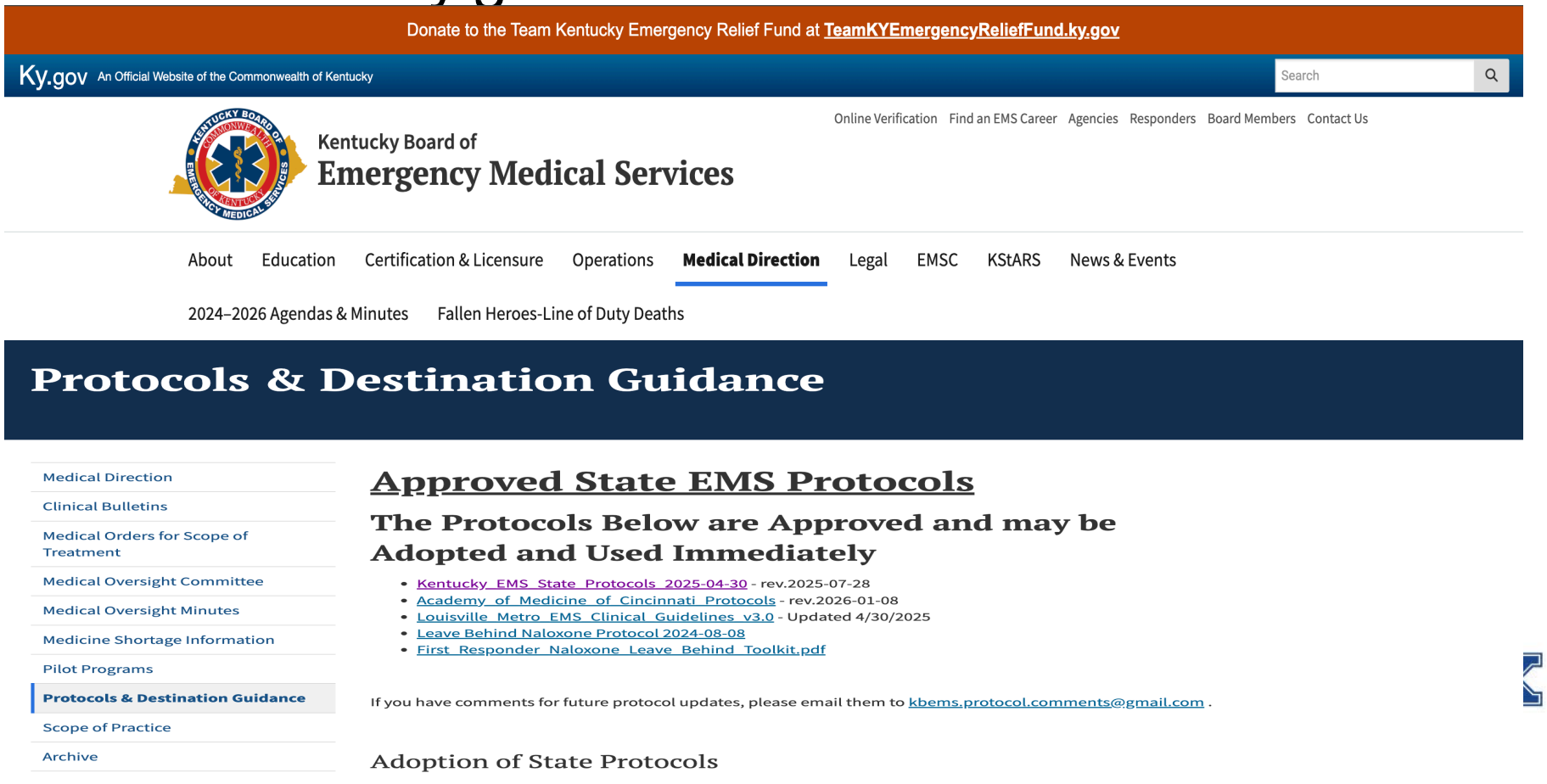
LEXINGTON, Ky. — Lexington's first responders and social service teams are working side by side, now under one central hub.

What You Need To Know

- Lexington's community, social and public safety programs have worked through the Community Paramedicine Program since 2018
- The program is now under one roof, using a former annex building on Cisco Road for its services
- Lexington Fire Lt. Alexander Jann leads the team of 14 staff members
- The program helps address crisis-based emergencies such as those of mental and behavioral health concern

EMS: Kentucky protocols

- Website: KBEMS.Ky.gov



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KBEMS: Advanced Practice Paramedic?

- Transition happening January 1st 2027.
- Follows IBSC certifications.

COMMUNITY PARAMEDIC CERTIFICATION (CP-C®)

FLIGHT PARAMEDIC CERTIFICATION (FP-C®)

CRITICAL CARE PARAMEDIC CERTIFICATION (CCP-C®)

TACTICAL PARAMEDIC CERTIFICATION (TP-C®)

WILDERNESS PARAMEDIC EXAM PREPARATION (WP-C®)

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KBEMS: Advanced Practice Paramedic?

	Community Paramedic	Wilderness Paramedic	Critical Care Paramedic	Tactical Paramedic	Flight Paramedic
Harm reduction programs and education	✓				
Asthma education	✓				
Diet education	✓				
Urine sampling, preparation, and processing	✓				
Venous blood preparation and processing	✓				
Stool sampling, preparation, and processing	✓				
Sputum sampling, preparation, and processing	✓				
Polypharmacy intervention	✓				
Dressing changes	✓				
Arrange mental health/substance abuse referrals	✓				
Arrange primary care provider follow-up appointments	✓				
End of life care (Palliative/hospice care or referrals)	✓				
Bereavement care/after death social/psychological support and referrals	✓				
Assist patient with applying for insurance	✓				
Assist patient with interpretation of discharge instructions	✓				
Social services referrals	✓				
Diet evaluation	✓				
Chronic disease care	✓				
Perform care as directed through telemedicine provider	✓				
Prescription drug compliance monitoring	✓				

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Table 1: Adapted from KBEMS 2024 scope of practice for advance practice paramedics

Now let’s look at some research

- **My search methods:**
  - Literature review with PUBMED and CINAHL
  - Years: 2016 to present
  - Key words related to “Mobile Integrated Healthcare” and ”Rural” using MeSH adjusted terminology.
  - Inclusion: Full text available, focused on MIH, and reported outcomes.
  - Exclusion: No full text, focused on traditional EMS, and no reported outcomes.

Community Paramedicine Intervention Reduces Hospital Readmission and Emergency Department Utilization for Patients with Cardiopulmonary Conditions

Aaron Burnett, MD*
Sandi Wewerka, MPH†
Paula Miller, MPH†
Ann Majerus, NRP, CP*‡
John Clark, BS*
Landon Crippes†
Tia Radant, MS, NRP*

*Regions Hospital, St. Paul, Minnesota
†Critical Care Research Center, Regions Hospital, St. Paul, Minnesota
‡St. Paul Fire Department, St. Paul, Minnesota

- **Discussion:**
- **Limitations:**

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Development and Implementation of a Community Paramedicine Program in Rural United States

Lucas A. Myers, BAH, NRP*
Peter N. Carlson, MBA, NRP*
Paul W. Krantz, DO†
Hannah L. Johnson, MHA‡
Matthew D. Will, MBA, NRP*
Tasha M. Bjork, MBA‡
Marlene Dirkes, NRP*
Justin E. Bowe, NRP*
Kirk A. Gunderson, NRP*
Christopher S. Russi, DO§

*Mayo Clinic, Mayo Clinic Ambulance Service, Rochester, Minnesota
†Mayo Clinic Health System, Department of Emergency Medicine, Eau Claire, Wisconsin
‡Mayo Clinic Health System, Department of Administration, Eau Claire, Wisconsin
§Mayo Clinic, Department of Emergency Medicine, Rochester, Minnesota

- **Discussion:**
- **Limitations:**

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Reducing 9-1-1 Emergency Medical Service Calls By Implementing A Community Paramedicine Program For Vulnerable Older Adults In Public Housing In Canada: A Multi-Site Cluster Randomized Controlled Trial

Gina Agarwal, MBBS, PhD, Ricardo Angeles, PhD, Melissa Pirrie, MA, Brent McLeod, MPH, Francine Marzanek, BSc, Jenna Parascandalo, BA, Lehana Thabane, PhD

- **Discussion:**
- **Limitations:**

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JAMA Internal Medicine | Original Investigation | AGING AND HEALTH

Mobile Integrated Health vs a Transitions of Care Coordinator for Patients Discharged After Heart Failure
The Mighty-Heart Randomized Clinical Trial

Ruth Masterson Creber, PhD, MSc, RN; Brock Daniels, MD; Meghan Reading Turchioe, PhD; Leah Shafran Topaz, PhD; Yihong Zhao, PhD; Jacky Choi, MPH; Melani Ellison, MPH; Roland C. Merchant, MD; Erik Blutinger, MD; Parag Goyal, MD; Jiani Yu, PhD; Mark G. Weiner, MD; Evan Sholle, MSc; Kumudha Ramasubbu, MD; Shudhanshu Alishetti, MD; Kelly Axsom, MD; David Slotwiner, MD; Maya Rao, MD; Ivan Diaz, PhD; John A. Spertus, MD; Rahul Sharma, MD; Rainu Kaushal, MD

- **Discussion:**
- **Limitations:**

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PREHOSPITAL EMERGENCY CARE
2024, VOL. 28, NO. 1, 168–178
https://doi.org/10.1080/10903127.2022.2138654

Taylor & Francis
Taylor & Francis Group

Check for updates

FOCUS ON MOBILE INTEGRATED HEALTH

A Systematic Review of Methodologies and Outcome Measures of Mobile Integrated Health-Community Paramedicine Programs

Srikar Adibhatla[a], Tucker Lurie[b], Gail Betz[a], Jamie Palmer[a], Alison Raffman[c], Sanketh Andhavarapu[d,e], Andrea Harris[a], Quincy K. Tran[a,d,e,f], and Daniel B. Gingold[a,g]

- **Discussion:**
- **Limitations:**

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Key research takeaways/future directions

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Policy: Major limitation for MIH = financial sustainability

- **Current EMS billing structure:**
  - Reimbursement for transport ONLY (at BLS/ALS level)
  - No reimbursement or very small amount for treatment only

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Policy: Future directions

- **COVID-19 era emergency policy**
  - Emergency Triage, Treat, and Transport (ET3) policy from CMS was implemented.
  - Allowed for reimbursement for treating in place without transport
  - Ended in 2023,
- **Current advocacy at national and state levels**
  - Bring back the ET3 model allowing for reimbursement for treatment in place
  - MIH programs are currently mostly funded by temporary grants or local health departments, which makes sustainability challenging.

Continue this conversation

- **My email:** Jdwo259@uky.edu
- **Kentucky MIH subcommittee contacts:**

Mobile Integrated Healthcare-Community Paramedicine (MIH-CP)

Subcommittee:

Scott Helle – Chair, scott.helle@uky.edu
Chris Lokits, Board Member – Vice Chair
Jared Adams, jdadams1001@hotmail.com
Matt Holley, deputydirector@boydems.com
Kendra Messenger, messkk@mchealth.net
Lane Morrison, kristian.morrison@bhsi.com
Danielle Stiner, danielle.stiner@florence-ky.gov
Brandon Remley,

Ex-Officio:

Walt Lubbers, MD - State Medical Advisor, walt.lubbers@gmail.com
Eddie Slone - KBEMS Executive Director, eddied.slone@ky.gov

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Summary

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