The Role of EMS in Our System of Health Care

Mobile Integrated Health Care / Community Paramedic

Michael A. Kaufmann, MD, FACEP
Board Certified EMS Physician
Michael Kaufmann, MD, FACEP

• Vice President – St. Vincent Emergency Physicians, Inc.
• Board Certified EMS Physician
• EMS Medical Director
  – Boone County Sheriff’s Department
  – Care Ambulance in Clay County
  – Carmel Fire Department
  – Decatur Township Fire Department
  – Pike Township Fire Department
  – Whitestown Fire Department
  – Perry Township Fire Department
  – Zionsville Fire Department
  – Midwest Ambulance Service
  – Seals Ambulance Dunn
  – St. Vincent StatFlight
  – St. Vincent StatGround
  – St. Vincent EMS/Education
“You call 911, you get an ambulance.”
“Ambulances take patients to the ER.”
What do we want?

• Do we want EMS to be reactive or proactive?
  – Reactive means we sit in our stations or on street corners and wait for someone to call us.
  – Proactive means we get out and do things to improve the health of our community in between running emergency calls.
What is MIH?

• The provision of healthcare using patient-centered, mobile resources in the out-of-hospital environment in a coordinated manner with physicians, hospitals, and other providers.

• It encompasses a myriad of potential expanded roles of EMT’s, Paramedics, and EMS systems to provide higher quality patient-centered care and helping to prevent emergencies before they begin.
To improve the healthcare provided to the people of Indiana by empowering Indiana EMS providers to play a larger, more integrated role within our healthcare system.

We do this by fostering collaboration among advocates and practitioners of community paramedicine and mobile integrated healthcare in the State Indiana and by advancing new models of out-of-hospital care, including elements to

1) make EMS more adaptive to changes in the healthcare system,
2) align EMS with the continuum of healthcare providers and resource,
3) integrate EMS into the public health infrastructure.
Healthcare is Changing!

- Volume-Driven Healthcare
- Value-Driven Healthcare
Care in the Community

MIH

CP
Community Paramedicine

Licensed Paramedic
- Licensed through Department of Homeland Security
- Multiple Training Options – Academia, Hospital, Private, Government

Non-Emergency Follow-up
- Not dispatched through 911
- Not an ambulance
- Scheduled Follow-up Home Visit

Program Based, Population Focused
- Aging in Place/Geriatric Care
- Pre/Post Surgery Follow-up
- Child Wellness Visits
- Substance Abuse & Addiction Support
- Chronic Disease Management – CHF, COPD, Diabetes
- Social Services Navigation
- Post ER Discharge Follow-up

Care Objectives
- Results in Reduction of Readmissions
- Results in Increased personal health knowledge
- Results in Increased usage of Primary Healthcare
- Results in Increased patient accountability leading to behavior change
Community Paramedicine

LOCATION BASED

- Community Paramedics are where the Patients are
  - Home
- Senior Living Facilities
- Palliative Care
- In-Patient
- Work Place

SERVICES PROVIDED EVERY TIME

- Care Plan Follow-up
- Medication Inventory
- Home Assessment
- Safety Assessment
- Social Needs
- Social Determinants
- Referral

SERVICES PROVIDED AS NEEDED

- 12 lead EKG Test
- Blood Glucose Test
- Capnography
- Ultrasound screening
- IV, IN, IM
- ISTAT
- Pre-Transport Checklist

Case Management System & Full Reporting
## Paramedic Resources – Statewide

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Employment</th>
<th>Location Quotient</th>
</tr>
</thead>
<tbody>
<tr>
<td>HealthCare Social Worker</td>
<td>4,470</td>
<td>1.32</td>
</tr>
<tr>
<td>Physicians</td>
<td>8,990</td>
<td>1.25</td>
</tr>
<tr>
<td>EMT &amp; Paramedics</td>
<td>5,780</td>
<td>1.13</td>
</tr>
<tr>
<td>LPN &amp; LVN</td>
<td>16,090</td>
<td>1.08</td>
</tr>
<tr>
<td>Registered Nurses: Nurse Anesthetists, Nurse Midwives &amp; Nurse Practitioners</td>
<td>63,870</td>
<td>1.05</td>
</tr>
<tr>
<td>Nurse Assistants</td>
<td>30,910</td>
<td>1.01</td>
</tr>
<tr>
<td>Mental Health &amp; Substance Abuse Social Worker</td>
<td>2,080</td>
<td>0.86</td>
</tr>
<tr>
<td>Social &amp; Human Service Assistants</td>
<td>6,480</td>
<td>0.84</td>
</tr>
<tr>
<td>Clinical, Counseling &amp; School Psychologists</td>
<td>1,300</td>
<td>0.56</td>
</tr>
<tr>
<td>Psychiatrists</td>
<td>280</td>
<td>0.53</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>140,250</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Location Quotient**

Geographic spread of resources compared to similar population density. Defines location; does not determine need.

Source: Bureau of Labor Statistics, Analysis
Carmel Fire Department

Started a pilot program mid-2014 to develop a community paramedic program within their community.

- Conceptually driven by EMS Chief Tom Small and Fire Chief Dave Haboush
- Endorsed by Carmel Mayor Jim Brainard
- Recognized nationally by US News and World Report as well as the CBS evening news
St. Vincent Health Support

- $25,000 grant from St. Vincent Carmel.
- $25,000 grant from St. Vincent Foundation.
- Value in MIH recognized by hospital and financial reimbursement model adopted.
- Carmel Hospital/ED Administrative Support
- Population Health support.
Community Partner

• Telamon
  – Sunny Lu Williams and Stephen Etter
  – Business plan development
  – Technology deployment
  – Information services integration
  – Scalability of the MIH program
  – Reproducibility of the MIH program
Carmel MIHCP

- Phase 1 – Started late 2014
  - Focus on community needs assessment
  - “Frequent flyers”
  - Preventing unnecessary 911 calls
  - Addressed community and social needs
  - Over 100 patients enrolled
  - Provided significant benefit to residents of Carmel and Clay Township
• Phase 2 – January 2016
  – Observation Avoidance
  – Focused on preventing observation admissions for emergency department patients who weren’t sick enough to be full admissions, but needed additional care.
  – January – June 2016
    • Enrolled approximately 50 patients
    • 91.7% success rate of preventing admissions
Carmel MIHCP

- Phase 3 – June 2016 – Current
  - Enrollment opened to inpatient discharges
  - Second hospital site opened at SVHCCI
  - To date more than 100 patients enrolled.
  - More than 30 patients enrolled in October 2016 alone.
  - Enrollment was highest when MIHCP was stationed in the ER.
CFD-St. Vincent Partnership

ER Observation Avoidance & In-Patient Discharge Assistance Pathways

- Home Visit within 24 or 48 hours
- Head to Toe Assessment, Medication Inventory, Discharge Instructions Review
- Follow-up Home Visit as needed
- Referral as needed
- Report in Case Management

Outcomes
- Jan 2016 - Feb 2017
  - **80%** Reduction in Readmissions comparing Prior Year to Post Year
  - **55%** Reduction in Readmissions comparing Prior 90 Days to Post 90 Days
Volume by Diagnosis

- SOB/Asthma/COPD: 4%
- Fall Risk: 4%
- Blood Chemistry: 11%
- Cardiovascular: 37%
- Mobility/Other: 22%
- Mental Health: 13%
- 9%
## Other Programs

### Mobile Integrated Healthcare

**Examples of MIHP**

<table>
<thead>
<tr>
<th>Location</th>
<th>Impacts</th>
<th>EMS</th>
<th>Call Center</th>
<th>Hospital</th>
<th>Primary Care</th>
<th>Mental Health/Detox</th>
<th>Cardiology</th>
<th>Pharmacy</th>
<th>Telemonitoring</th>
<th>Assisted Living</th>
<th>Hospice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>American Medical Response</strong></td>
<td>Reducing CHF readmissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arlington, TX</td>
<td>Decrease utilization of EMS by high utilizers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>University of Chicago Medicine</strong></td>
<td>Reducing CHF Admissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chicago, IL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>MedStar Mobile Healthcare</strong></td>
<td>Reducing Hospice Revocation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fort Worth, TX</td>
<td>Decrease utilization of EMS by high utilizers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Wake County EMS</strong></td>
<td>Decrease utilization by patients who fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raleigh, NC</td>
<td>Decrease utilization by patients with substance abuse and mental illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Barnes-Jewish Hospital/Abbott EMS</strong></td>
<td>Reducing CHF, AMI, COPD, and pneumonia readmissions</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saint Louis, MO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Types of Patients

• Example #1
  – 40 y/o male with Kidney Stone
  – Vomiting, Dehydration, Elevated Creatinine
  – Enrolled from the ER
  – Medic follow up in 24 hours
    • Additional anti-emetics administered
    • IV Fluids given
    • Rechecked creatinine with bedside analyzer
    • Sent report to follow up doc and back to the ER.
Types of Patients

• Example #2
  – 35 y/o male discharged after inpatient stay for vomiting.
  – Had been seen in 4 ERs in the previous 7 days.
  – Patient had HIP 2.0 but not utilizing resources.
  – Was assigned to local community clinic but they had refused to see him because they were migrating to a new computer system.
  – Enrolled into the MIH program.
  – Paramedic in home treatment, labs tested
  – ER visits stopped, followed up in HTC
  – Now established in community clinic.
Types of Patients

- Example #3
  - 70 y/o female with UTI
  - Lived alone, mildly impaired mobility
  - No transportation
  - Enrolled into program
  - Medics took her home
  - Cleared her sidewalk of snow
  - Went to pharmacy and obtained Rx
  - 24 hour in home follow up
  - Took patient to PCP appointment 48 hours later.
Limitations

• How do we pay for this program?
  – EMS reimbursement doesn’t exist for MIH.
  – Limited resources for startup costs.
  – Money saving rather than revenue generating.
  – Significant resources from community are needed.
  – Jurisdiction of municipal agencies
  – Training/scope of EMS providers
Future Opportunity

Statewide Opioid Blocker & Education Resource

- Paramedics trained as Certified Recovery Specialists, Counseling
- Paramedics providing monthly injections of Vivitrol to diagnosed Patients with active prescription, Medication Assisted Treatment
- Drug Court & Probation Pathways, Eligibility & Referral
- Strong Partnerships & Clear, Accountable Roles
- Report in Case Management

Next Steps
- Include Additional Stakeholders
- Secure Additional Funding Appropriation from 2016 and 2017 Passed Bills
- Hamilton County Court Pilot
- 1115 Waiver
References

2. H.R. 6528, 111th Congress.