Mobile Integrated Health

A Quick Primer + Recent Research

Anna Sierra, MS, EMT
Director, Emergency Services
Dorchester County, MD
Introduction


**Signs and Symptoms**

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**The Impact of Hospital Overcrowding on EMS Crews**

By Corey Slovis, MD, FACP, FACP, FAAEM and H. Evan Dingie, MD

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**Maryland hospital to shut down, be replaced with freestanding facility**

Written by Ayla Ellison (Twitter: @Google+) | July 20, 2018 | Print | Email

Baltimore-based University of Maryland Medical System plans to close University of Maryland Shore Medical Center at Dorchester, a 47-bed hospital in Cambridge, Md., in 2021 and replace it with a freestanding facility 1 mile away, according to The Daily Record.

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**NEWS**

**Failure to care for mentally ill puts ERs at risk**

January 12, 2013

The lack of mental health resources in the United States has contributed to a significant increase in visits to the emergency department (“How to care for mentally ill people?” Jan 8). Psychiatric emergencies grew by 131 percent between 2000 and 2007, according to a recent study. Psychiatric patients often “board” in the hallways of emergency department for several days, waiting for inpatient psychiatric services. This contributes to overcrowding which harms everyone. Emergency physicians are dedicated to providing a medical home for any patient who can’t access medical care including people with health insurance who are unable to get timely appointments with their primary care physicians.

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**HEALTH**

**Hospitals try to improve emergency wait times**

By Meredith Cohn, The Baltimore Sun | June 18, 2010

Vernon Lyon has some experience with emergency rooms. He has four kids. So when his daughter Sydni recently slipped on the stairs and hurt her foot, he thought he was in for some serious time in a hospital waiting room. But the Parkville dad went to St. Joseph Medical Center, where officials have been working to cut “door to doc” time. The community hospital in Towson is one of several in the area — and one of many across the country — working to reduce wait times for patients who come in with less-than-deadly conditions.
Changes in Condition

Improvised Patient Experience
Reduced Cost
Improved Population Health

All your labs are back. They show a serious overuse of unnecessary and inappropriate tests and procedures.
Need for Experimental Treatment

- Pilots, studies, trials across the US
- Goals:
  - Achieve the Triple Aim in the most vulnerable population
  - Expand access to healthcare
  - Fill gaps in existing healthcare services
Treatment Results

• Creative, community-specific programs
• Various partnerships and stakeholders
• Improved information sharing
• Short-term cost savings
• Remaining Gaps
  • Reimbursement – location dependent
  • Long-term compliance?
  • “Aligned incentives”
  • Model evaluation
National Highlights

Rural
- Eagle County, CO
  - Est. 2009 (first?)
  - Focus on access
- Minnesota
  - Education included advanced practice options; certifications offered by community colleges. Focus on access.
  - Reimbursed via Medicaid

Urban
- MedStar – Ft. Worth, TX (urban)
  - 911 Nurse Triage
  - EMS Loyalty
  - CHF Readmission Avoidance; Hospice Revocation Avoidance
- Houston, TX – ETHAN (urban)
  - Emergency Telehealth and Navigation. Low-acuity patients are connected via video call to a board-certified ED physician
- Camden, NJ – Healthcare Hotspotting
  - Focus on super-utilizers
  - Dr. Jeffery Brenner - YouTube
Telehealth for Low-Acuity EMS: One Fire-Based System Experience with 10K patients

Houston FD’s ETHAN program

- 10,000 patients deemed eligible by EMS for inclusion
  - 85% confirmed by physician and transported via non-EMS methods
  - 18% transported to non-ED destinations
  - Zero adverse events reported
- Further study needed to produce transport/disposition resource algorithm

Gonzalez, M.G. et al.; Annals of Emergency Medicine, Volume 70, Issue 4, S3
Home Visit-Based CP and Its Potential Role in Improving Patient-Centered Primary Care (Canada)

• Embedded qualitative evaluation of ongoing Expanding Paramedicine in Community (EPIC) clinical trial

• Premise: MIH/CP may change the relationship between patients, caregivers, primary care, and other resources. Is that change positive, negative, or neutral?

• Major Themes – Spoiler Alert! No Surprises.
  • Patient vulnerability
  • Health education and accountability
  • EPIC = Safety Net
  • Patient-Provider Bonds

• Quality of life is more than improved A1C
Conserving Quality of Life through CP (Canada)

- Randomized controlled trial in one urban and one rural community in eastern Ontario
- Premise: Comparison of cost for programs versus quality of life scores of patients
- Major Themes:
  - CP not a “fix all” – QOL scores decreased across all patients
  - HOWEVER – QOLs for control groups decreased significantly than those in intervention
  - At costs of $67,560 for rural and $76,413 for urban, the CP program was higher than $50k QALY, an accepted* clinical cost effectiveness guideline for allocations of resources

Outcomes and provider perspectives on geriatric care by an NP-led CP program (USA)

- Clinical demonstration project using chart review and interviews
- Premise: Does a CP program improve health outcomes for a geriatric population?
- Major Themes:
  - Benefits: Access to care (especially among frail, limited mobility, or homebound pts), decreased ED/hospitalization, reassurance for caregivers
  - Initial challenges in communication; enhanced care coordination & deeper insight for PCP/Clinics
  - Uncertainty of role in geriatric-specific care situations (prescribing of medications, consideration of dementia with other comorbidities, etc)
  - Reliance on DispatchHealth by patients who don't necessarily need the service due to convenience
  - Multi-disciplinary teams were effective due to various perspectives
- No cost analysis included
Community Paramedicine Applied in a Rural Community

• Pre/posttest with comparison group study, evaluating disease-specific outcomes and ED visit/admissions frequency
• Premise: Are CP programs cost-effective in the rural setting, and do they improve health outcomes?

• Major Themes:
  • High patient satisfaction scores (100% reported 5/5)
  • 60% received a referral to a community resource; 100% referred to a medical home program
  • Only 13% of pts saw a PCP within 14 days of enrollment (transportation, lack of insurance) – goal was 100%
  • Estimated cost per visit: $205.78
### Abbeville County Comparison Study

<table>
<thead>
<tr>
<th>Metric</th>
<th>CP Pts ((n=68))</th>
<th>Comparison Pts ((n=125))</th>
<th>(P) value</th>
</tr>
</thead>
<tbody>
<tr>
<td>% with an EMS Call</td>
<td>-48.5%</td>
<td>56%</td>
<td>.0007</td>
</tr>
<tr>
<td>Time spent with EMS (in mins.)</td>
<td>-36.8 min</td>
<td>-16.8 min</td>
<td>.0008</td>
</tr>
<tr>
<td>Nonemergency EMS call</td>
<td>-100%</td>
<td>225%</td>
<td>.5343</td>
</tr>
<tr>
<td>% of transports</td>
<td>7.9%</td>
<td>38.9%</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>% of transports requiring higher level of care after enrollment</td>
<td>25.9%</td>
<td>50.7%</td>
<td>.0008</td>
</tr>
<tr>
<td>Time spent with EMS</td>
<td>-25.2%</td>
<td>-11.6%</td>
<td>.0008</td>
</tr>
<tr>
<td>Return to Service time</td>
<td>-22.1%</td>
<td>-8.2%</td>
<td>.0006</td>
</tr>
<tr>
<td>% with an ED visit</td>
<td>-58.7%</td>
<td>4.0%</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>% with an inpatient stay</td>
<td>-68.8%</td>
<td>187.5%</td>
<td>.0451</td>
</tr>
<tr>
<td>Inpatient days</td>
<td>-15.7%</td>
<td>162.5%</td>
<td>.0285</td>
</tr>
<tr>
<td>30-day readmission rate</td>
<td>41.2%</td>
<td>35.9%</td>
<td>.0341</td>
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</tbody>
</table>
Evaluation of California’s Community Paramedicine Pilot Program

• Independent evaluation done by UCSF and paid for by California Health Care Foundation

• Evaluated 7 different programs
  • Post-hospital discharge follow-up
  • Super-user
  • TB patients
  • Hospice Support
  • ATD – Mental Health Crisis Center
  • ATD – Sobering Center
  • ATD – urgent care center

• Evaluation and updates published by UCSF January & November 2017, February 2018
## Cumulative Patients Enrolled by Concept through September 2017*

<table>
<thead>
<tr>
<th>Concept</th>
<th># Enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Discharge Short-term Follow-Up</td>
<td>1,401</td>
</tr>
<tr>
<td>Frequent EMS Users</td>
<td>103</td>
</tr>
<tr>
<td>Directly Observed Therapy for Tuberculosis</td>
<td>42</td>
</tr>
<tr>
<td>Hospice</td>
<td>270</td>
</tr>
<tr>
<td>Alternate Destination – Mental Health</td>
<td>251</td>
</tr>
<tr>
<td>Alternate Destination – Sobering Center</td>
<td>400</td>
</tr>
<tr>
<td>Alternate Destination – Urgent Care</td>
<td>48 $</td>
</tr>
<tr>
<td>All Projects</td>
<td>2,515</td>
</tr>
</tbody>
</table>
### Community Paramedicine Patient Payer Mix

<table>
<thead>
<tr>
<th></th>
<th>Post discharge</th>
<th>Frequent 911</th>
<th>Hospice</th>
<th>TB</th>
<th>Alt Dest Mental Health</th>
<th>Alt Dest Sobering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Uninsured</strong></td>
<td>2%</td>
<td>21%</td>
<td>30%</td>
<td>30%</td>
<td>14%</td>
<td>8%</td>
</tr>
<tr>
<td><strong>Commercial</strong></td>
<td>13%</td>
<td>15%</td>
<td>12%</td>
<td>18%</td>
<td>0%</td>
<td>7%</td>
</tr>
<tr>
<td><strong>Medi-Cal</strong></td>
<td>25%</td>
<td>24%</td>
<td>3%</td>
<td>47%</td>
<td>84%</td>
<td>61%</td>
</tr>
<tr>
<td><strong>Medicare</strong></td>
<td>61%</td>
<td>40%</td>
<td>55%</td>
<td>6%</td>
<td>1%</td>
<td>24%</td>
</tr>
</tbody>
</table>

- *Yellow*: Uninsured
- *Red*: Commercial
- *Blue*: Medi-Cal
- *Orange*: Medicare

*Legend: Medicare, Medi-Cal, Commercial, Uninsured*
California Evaluation

- Measured:
  - Safety
  - Effectiveness
  - Savings across health care system

Potential Cost Savings
Accrue Primarily to Hospitals and Payers

<table>
<thead>
<tr>
<th>Post Discharge</th>
<th>UCLA</th>
<th>Butte</th>
<th>Alameda</th>
<th>San Bernardino</th>
<th>Solano</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$403,284</td>
<td>$196,781</td>
<td>$110,718</td>
<td>$417,687</td>
<td>$224,964</td>
</tr>
<tr>
<td></td>
<td>$2,619/pt</td>
<td>$246/pt</td>
<td>$1,045/pt</td>
<td>$2,120/pt</td>
<td>$1,551/pt</td>
</tr>
<tr>
<td>Frequent EMS Users</td>
<td></td>
<td></td>
<td>Alameda</td>
<td>San Diego</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$28,392 ($860/patient)</td>
<td>$551,760 ($14,912/patient)</td>
<td></td>
</tr>
<tr>
<td>Hospice</td>
<td></td>
<td></td>
<td></td>
<td>Ventura</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$203,715 ($755/patient)</td>
<td></td>
</tr>
<tr>
<td>Alt Destination Behavioral Health</td>
<td></td>
<td></td>
<td>Stanislaus</td>
<td>San Francisco</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$266,200 ($1,061/patient)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alt Destination Sobering Center</td>
<td></td>
<td></td>
<td></td>
<td>$133,699 ($332/patient)</td>
<td></td>
</tr>
</tbody>
</table>
Maryland

• Included in the EMS Plan (2014)
• Queen Anne’s County MICH begins pilot
• Subsequent SEMSAC Studies – Phases 1 and 2
  • Optional Protocol Development and Acceptance
  • Multiple programs begin across the State with support from local hospitals, non-profit organizations, and Community Health Resources Commission
• Senate Bill 682 – *Medical Assistance Program and Health Insurance – Emergency Medical Services Providers – Coverage and Reimbursement of Services* (2018)
  • Moved to Summer Study to work out reimbursement
Mobile Integrated Community Health

Overview

A team approach to population health.

Joseph A Ciotola, Jr., MD
Mission Statement

To improve health outcomes among citizens of Queen Anne's County through integrated, multi-agency, and intervention-based healthcare.

Vision Statement

To provide mechanisms for citizens to have better access to healthcare and to enhance individual health outcomes.
Partnerships

- QAC Dept. of Emergency Services
- QAC Department of Health
- MIEMSS
- UMMS Shore Regional Health
- QAC Commissioners
- QAC Addictions and Prevention Services
- QAC Dept. of Health and Mental Hygiene
- QAC Area Agency on Aging
- Anne Arundel Medical Center
Funding

- UMMS Shore Regional Health
- Anne Arundel Medical Center
- Queen Anne's County Government
- Queen Anne's County Dept. of Health
- Carefirst Telehealth Grant
MICH Criteria

Inclusion

- Adults 18 years and older.
- Five 911 calls in any 6 month interval
- Resident of Queen Anne’s County

Exclusion

- Refusal to participate in the program.
Referral Phases

First Phase - Frequent 911 Callers

Second Phase - EMS Referrals

Third Phase - ED Referrals and QA ER Referrals

Fourth Phase - Shore Regional Health Post D/C and AAMC Post D/C

Fifth Phase - Visiting Nurse Agencies/Home Health Referrals
MICH Team

Combination Field Team

Department of Health Nurse
Queen Anne's County Paramedic
Mental Health/Substance Abuse Counselor

Telehealth Component

Hospital Based Pharmacist

Management

Health Officer / EMS Medical Director
Joseph A Ciotola, Jr., M.D.
MICH Home Visit

**QAC DES Paramedic**
- Program introductions and overview
- Physical examination assessment of physical health
- Health and home safety assessment
- Discuss home safety issues with the patient and need to modify identified hazards

**QAC DOH RN**
- Program introductions and overview
- Assessment of health history, Rx inventory, review of systems and current status
- Assessment of patient education and assessment of support system
- Referrals to appropriate health and community services
Health and Home Safety

The EMS Provider utilizes four evidenced based scales to determine home and personal safety of each patient.

The four assessment scales that will be utilized are:
- The Hendrich II Fall Risk Model
- The Physical Environment Assessment Tool
- Alcohol Use Disorder Identification Test
- Drug Abuse Screening Test
Telehealth

Mobile WiFi secured through oMG Mobile Gateway by Sierra Wireless.

Verizon Hotspot used as a back-up

Panasonic Toughbook

Very durable. Will stand up to most rigorous environments

VIA3 Unity

Provides several layers of end-to-end AES encryption

Willing to sign a BAA to satisfy HIPAA HITECH Act

Interoperability and provides 720p HD video and file sharing
Data and Demographics

Growth in Home Visits per FY

From FY 15 to FY 16: 95.8%
From FY 16 to FY 17: 38.3%
From FY 17 to FY 18: 67.7%
From FY 15 to FY 18: 354.2%
Data and Demographics

Referral Sources

- 911 CAD Data (6.11%)
- QA DES (53.05%)
- QA ER (4.71%)
- AAMC D/C (10.12%)
- Shore Health (26%)

Avg. time spent per home visit

80 minutes
Data and Demographics

Age
- 18-64 (22.45%)
- 65+ (77.55%)

Race
- African American (22.54%)
- Caucasian (77.46%)

Gender
- Female (55.10%)
- Male (44.90%)

Age Statistics
- Oldest Patient: 99
- Average Age: 70
- Youngest Patient: 22
Data and Demographics

Insurance Breakdown

- Medicare (60.47%)
- Medicaid (13.57%)
- BC/BS (11.21%)
- United Healthcare (2.65%)
- Aetna (2.36%)
- AARP (4.72%)
- Priority Partners (2.06%)
- Tricare (1.47%)
- Omaha (1.18%)
- Cigna (0.29%)
Data and Demographics

Education Status

- HS Diploma or Equivalent (42.47%)
- Associate's Degree (1.37%)
- Bachelor's Degree (15.75%)
- Master's Degree (2.05%)
- Less Than HS (23.29%)
- Some College, No Degree (15.07%)

Employment Status

- Unable to Work (15.75%)
- Unemployed (4.11%)
- Retired (73.97%)
- Employed (6.16%)
Data and Demographics

Top 10 Existing Diagnosis

- HTN
- High Cholesterol
- Injuries From Falls
- Esophageal Reflux
- Atrial Fibrillation
- CHF
- Diabetes
- Anxiety
- Depression
- Chronic Pain

Avg. Number of Diagnoses/Patient

5.89
Data and Demographics

Results From Rx Inventories

- No Problems Identified (72.98%)
- Problems Identified (27.02%)

Avg. Number of Medications/Patient: 9.99
**Data and Demographics**

**Top 10 Linked Services**

- **Safety**: 500
- **Health Education**: 400
- **Case Mgmt Needs**: 300
- **Home Care/Home Health**: 200
- **Transportation**: 100
- **Energy Assistance**: 100
- **Substance Abuse**: 100
- **Behavioral Health**: 100
- **Nutrition Assistance**: 100
- **Housing/Shelter Assistance**: 100

**Total Services Linked to Patient:** 1480

**Avg. Linked Services/Patient:** 6.55
**Data and Demographics**

**PEAT Score Results**

- **Healthy (55.75%)**
- **Less than Optimal (31.86%)**
- **Referral Assistance (12.39%)**

**Safety Hazards**

- Unmarked prescription pill bottles
- Space heaters next to curtains
- Complete lack of smoke detectors
- A light plugged into an outlet and dangling over the bath tub
- Soft floors and sagging ceilings
- Multiple layers of throw rugs
- Extension cords running across rooms from wall to wall
# Data and Demographics

## 911 Transport Data

### Mobile Integrated Community Health Program: 911 Call Reduction Analysis

The following data is based on the Queen Anne's County Mobile Integrated Community Health Program patient list as of April 20, 2018, and 911 call data from July 1, 2012-March 30, 2018.

<table>
<thead>
<tr>
<th>Pre-Enrollment Call Rates per Month*</th>
<th>Post-Enrollment Call Rates per Month**</th>
<th>% Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Calls per 12 Months Pre Enrollment</td>
<td>0.16</td>
<td>Average Calls per 12 Months Post Enrollment</td>
</tr>
<tr>
<td>Average Calls per 6 Months Pre Enrollment</td>
<td>0.23</td>
<td>Average Calls per 6 Months Post Enrollment</td>
</tr>
<tr>
<td>Average Calls per 3 Months Pre Enrollment</td>
<td>0.37</td>
<td>Average Calls per 3 Months Post Enrollment</td>
</tr>
</tbody>
</table>

*Pre-enrollment rates established as average number of 911 calls per month among all MICH participants with pre-enrollment call records.

**Post-enrollment rates established as average number of 911 calls per month among all MICH participants after enrollment. Patients were excluded if they died before the end of the reporting period.

### MICH 911 Call Reductions as of April 1, 2018

![Graph showing MICH 911 Call Reductions](chart.png)
Mobile Integrated Community Health Program: Cost Reduction Analysis

NOTE: The following data is based on the Queen Anne’s County Mobile Integrated Community Health Program patient list as of April 20, 2018, and patient cost data within the state of Maryland from July 1, 2012-March 30, 2018.

MICH 30-Day Cost Reductions

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>Total Services</th>
<th>Total Cost</th>
<th>Total Services</th>
<th>Total Cost</th>
<th>Visit Reduction</th>
<th>Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department Outpatient</td>
<td>83</td>
<td>$104,997</td>
<td>47</td>
<td>$38,378</td>
<td>43%</td>
<td>63%</td>
</tr>
<tr>
<td>Inpatient</td>
<td>70</td>
<td>$758,138</td>
<td>12</td>
<td>$153,166</td>
<td>83%</td>
<td>80%</td>
</tr>
<tr>
<td>Other Outpatient</td>
<td>21</td>
<td>$16,332</td>
<td>18</td>
<td>$62,461</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>Overall Total</td>
<td>174</td>
<td>$879,467</td>
<td>77</td>
<td>$254,004</td>
<td>56%</td>
<td>71%</td>
</tr>
</tbody>
</table>

MICH Patient Hospital Costs: 30 Days Pre vs Post Program Enrollment

Mobile Integrated Community Health Program: Cost Reduction Analysis
Created by Ty Turner (Research Statistician). For questions contact Ty.Turner1@Maryland.
Data and Demographics

**MICH 365-Day (1 Year) Cost Reductions**

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>Total Services</th>
<th>Total Cost</th>
<th>Total Services</th>
<th>Total Cost</th>
<th>Visit Reduction</th>
<th>Cost Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emergency Department</td>
<td>186</td>
<td>$196,259</td>
<td>33</td>
<td>$51,546</td>
<td>82%</td>
<td>74%</td>
</tr>
<tr>
<td>Outpatient</td>
<td>45</td>
<td>$411,294</td>
<td>7</td>
<td>$67,286</td>
<td>84%</td>
<td>84%</td>
</tr>
<tr>
<td>Inpatient</td>
<td>1</td>
<td>$278</td>
<td>2</td>
<td>$5,861</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Outpatient</td>
<td></td>
<td>$278</td>
<td></td>
<td>$5,861</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Total</td>
<td>232</td>
<td>$607,831</td>
<td>42</td>
<td>$124,693</td>
<td>82%</td>
<td>79%</td>
</tr>
</tbody>
</table>

*365-day pre and post enrollment statistics established as ALL emergency department services, and EMERGENCY-ONLY inpatient and other outpatient services. Non-emergency inpatient and other outpatient services are defined as routine/planned doctor visits and procedures in a hospital setting; these services are beyond the scope of MICH program interventions. Cost data as of 7/1/2018.

**MICH Patient Hospital Costs: 365 Days Pre vs Post Program Enrollment**

Mobile Integrated Community Health Program: Cost Reduction Analysis
Created by Ty Turner (Research Statistician). For questions contact Ty.Turner1@Maryland.
# Data and Demographics

**Bottom Line: MICH Program Cost Savings**

<table>
<thead>
<tr>
<th>Visit Type</th>
<th>30 Day Cost Savings</th>
<th>90 Day Cost Savings*</th>
<th>365 Day Cost Savings*</th>
<th>Total Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Emergency Department</strong></td>
<td>$66,619</td>
<td>$110,338</td>
<td>$144,713</td>
<td>$321,670</td>
</tr>
<tr>
<td><strong>Outpatient</strong></td>
<td>$604,972</td>
<td>$262,097</td>
<td>$344,008</td>
<td>$1,211,077</td>
</tr>
<tr>
<td><strong>Inpatient</strong></td>
<td>(46,128)</td>
<td>$10,620</td>
<td>(5,583)</td>
<td>(41,091)</td>
</tr>
</tbody>
</table>

**Total Cost Savings**

| $625,463              | $383,055              | $483,138               | $1,491,656          |

*90 and 365-day pre and post enrollment statistics established as ALL emergency department services, and EMERGENCY-ONLY inpatient and other outpatient services. Non-emergency inpatient and other outpatient services are defined as routine/planned doctor visits and procedures in a hospital setting; these services are beyond the scope of MICH program interventions. Cost data as of 7/1/2018.*
**Data and Demographics**

**Satisfaction Survey Results**

- **BMPH** - Better able to manage your personal health
- **IQOL** - Improved Quality of Life
- **WRA** - Were referrals appropriate/useful
- **MRH** - Medication review was helpful

Legend: 
- **Strongly Agree**
- **Agree**
- **Disagree**
- **No Opinion**
Challenges Faced

- Data Collection
- Dealing with Declinations
- Social Isolation and Mental Health
- Financial Sustainability
- Medically Complex Patients
What Does the Future Hold?

- Broadening referral sources
- Closing the loop with PCPs
- Search for financial sustainability
- Continue to investigate uses for telehealth
Questions?
MOBILE INTEGRATED HEALTHCARE of Charles County

Paving the way to a healthier community
Structure

Stakeholders

- Charles County Department of Health
- University of Maryland Charles Regional Medical Center
- Charles County Department of Emergency Services

The MIH Team

- Nurse
- Paramedic
- Community Health Worker
What is the Charles County Mobile Integrated Health?

- Free, voluntary program
- Patient-centered
- Personalized care coordination
- Mobile resources
- Out-of-hospital environment
- Help members of the community manage their healthcare needs without frequent use of the 911 system and the Emergency Department
- A “touch” of Community Paramedicine mixed with Community Nursing
- Team includes Paramedic, Community Health Nurse, Community Health Worker
Meet our MIH Team

Pam (NREMT-P), Jenny (BSN, RN), Wanda (Community Outreach Worker)
Goals of MI Health

• Decrease the percentage of ED visits and 911 system calls among participants by *25%*

• Increase the number of participants who visit their primary care provider *twice a year* for routine care

• Increase health literacy by educating participants on *prevention/management* of their disease processes

• Make at least one *referral* per participant to a needed community, health, or social service

• Give people the tools to *self-manage* their disease processes
  - zone sheets; record sheets; scales; automatic blood pressure cuffs; daily medication organizers; File of Life
Criteria for Enrollment

**Appropriate candidates:**

- Must be:
  - 18 years of age, or older (and)
  - Charles County resident (and)
  - 1 or more chronic health condition

*ALL 3 MUST APPLY*

**High utilizers of Emergent Care:**

- 6 or more visits to the ED in 3 months or
- 6 or more calls to EMS in 3 months

**Referrals from primary care must display one (or more) of the following:**

- 2 missed appointments/no-show’s to scheduled appointments (and/or)
- Have not followed up with recommended specialists/agencies pertaining to health needs (and/or)
- Poor medication adherence
Visits

• **Goals:**
  ▫ Help reach wellness through resources and education
  ▫ To help the patient take control of their health

• **Initial visit:**
  ▫ Usually within 48 working hours of referral
  ▫ Enrollment requires consent from patient (verbal consent is ok prior to initial visit when informed consent will be received)

*Follow up visits are scheduled on an as-needed basis according to the recognized needs of the patient/client*
Initial Visits

- Medical history review
- Individual concerns regarding health conditions
- Social and Emotional Health Questionnaire
- Physical Assessment
  - Vital signs
  - Respiratory/Neuro/Integumentary/GI/GU Cardiovascular/Musculoskeletal/Pain Assessments
- Immunization history review
- Assessment of ADL’s
- Medication reconciliation
  - Ability to safely dispose of unused/unwanted medications
  - Carbon copied lists for convenience
• Thorough Home Safety Assessments
  ▫ Ability to address safety needs with little to no cost to patient
    • Smoke detectors / Carbon Monoxide detectors
• Individualized “To-Do” lists for patients
• Recognize needs for IDT discussions where applicable
• File of Life
• Personalized binders with accessible educational materials/references for clients health conditions
  ▫ Zone Sheets; BP, FSBS, weight charts
Behind the Scenes

- Make contact with appropriate resources
  - MAP line, dental, mental health
  - Schedule appointments
- Arrange transportation when necessary
  - Contact PMD’s for MA Transportation Forms to be completed
- Send “needs list” to providers offices regarding needs of patient
  - Refill requests, referrals, DME requests, etc.
- Insurance companies
  - Coverage specifications
  - Case Manager access
- Schedule for home safety modifications when applicable
Organizations We Work Closely With

- Charles County Health Department
  - AERS
- Charles County Department of Emergency Services
  - Home safety modifications
- Lifestyles of Southern Maryland
  - Homeless (shelter)
  - Utility bill assistance
  - Food Pantry/Donated clothing
  - IDT meetings
  - transportation
- Charles Regional Medical Center
  - Diabetes Education Center
  - Cardiac/Pulmonary Rehab Center
  - Community Physicians Group
  - Specialist Physicians
  - Case Managers/Social Workers
- Department of Social Services
  - FSA, TCA, etc.
- QCI Behavioral/Mental Health
  - New referrals/ mobile treatment
- Department of Community Services
  - Loan closet for DME
- Health Partners/Greater Baden
  - New referrals for primary care
- Office on Aging
  - MAP line
- Local Pharmacies
  - High Street
  - LaPlata Pharmacy
  - Home-delivery services
- Volunteer Rescue Squads
Discharge process

• First month:
  ▫ MIH is “hands-on,” doing tasks for clients/family and informing them before and after tasks are completed (i.e.- appointment scheduling, etc.)

• Second month:
  ▫ Clients/family are encouraged to take initiative in completing necessary tasks to manage healthcare needs, reflecting level of involvement from MIH in first month

• Third month - onward:
  ▫ MIH monitors ability of client/family to manage healthcare needs independently and provides assistance/guidance when needed
  ▫ Discharge (successful/unsuccessful)
    • Self-manages, or remains non-compliant
Success Story
Success Story
Looking at 3 month pre and post MIH data for the first 50 participants:

- ED utilization dropped by **60%**
- Inpatient admissions dropped **57%** from a total of 37 inpatient admissions 3 months prior to MIH to 16 inpatient admissions.
- 30 day readmissions dropped by **86%**.
- There was a **48%** reduction in EMS utilization among participants.
- **63%** of participants reduced their EMS utilization after MIH enrollment
- **68%** with hypertension and **38%** with diabetes saw improvement after MIH enrollment
Demographics of MIH Participants:

- Average Age: 60 years
- Average Number of Prescriptions: 8
- Average Number of Chronic Conditions: 5
- Prevalence of Mental Health Disorder: 44%
- Gender: 46% Male, 54% Female
- Race/Ethnicity: 54% African American, 42% White, 4% Hispanic
- Payer Source: 46% Medicaid, 52% Medicare, 27% Private, 9% Self Pay
Contact Information

Feel free to contact us if you have questions, or need any additional information!

- Phone: 301-609-5748
- Email: amber.starn@maryland.gov
Salisbury/Wicomico Integrated Firstcare Team (SWIFT)

Maryland Rural Health Association
October 22, 2018
Lori Brewster, MS, APRN/BC, LCADC
Health Officer
Project Description

- Partnership with Salisbury Fire Department EMS and Peninsula Regional Medical Center and Wicomico County Health Department.
- Identify high utilizers of 911 and provide EMT-P, NP and RN to provide welfare check, case management, safety planning and to provide referrals for frequent utilizers of 911 EMS services and ED services for non-medical emergency reasons.
- Expand access to 10+ preventive care services and chronic disease management.
**Metrics Being Collected**

- Reduce the total number of annual, non-emergency Salisbury Fire Dept EMS transport calls by 15%;
- By end of 2\textsuperscript{nd} fiscal year, reduce the previous fiscal year’s non-emergency calls of enrolled patients by 15%;
- By the end of the 2\textsuperscript{nd} fiscal year, have avoided a total of 450 unnecessary ED admissions;
- Over the course of the 1\textsuperscript{st} two years, enroll a total of 150 patients in the SWIFT;
- By the end of the 2\textsuperscript{nd} fiscal year, work to allow for reimbursement for the services, such as supporting legislation for reimbursement.
Year 1

- Funded by Care First
- Services began October 1, 2017
- During initial visit client meets with PRMC NP, PRMC RN and a Salisbury FD Paramedic, the following activities are conducted:
  - Overall health questionnaire
  - Fall risk assessment
  - Mental health assessment
  - Substance abuse assessment
  - Vital sign data collected
  - Medication inventory
  - Referrals for specialty care
Outcomes and Program Performance Measures

- **46 individuals** enrolled since beginning of program.
- For the **32 individuals** on program for minimum of 6 months:
  - **31% reduction** in 911 calls:
    - 190 911 calls pre-enrollment
    - 131 911 calls during enrollment
  - **18% reduction** in ED visits:
    - 195 visits pre-enrollment
    - 160 during enrollment
Challenges

● Overwhelming need for mental health-related services for enrolled clients;
  ○ Identified existing partners for referrals

● Lack of transportation for the identified clients;
  ○ Allocation of funding for transportation/ cab vouchers

● Need for additional equipment;
  ○ Medical equipment for the clients
  ○ AED for the SWIFT vehicle

● Number of individuals enrolled with a PCP at the time of acceptance into the program was very low;

● Safety related interventions were needed to help maintain individuals in the community exceeded expectations.
Years 2 and 3

- Funding received from the Maryland Community Health Resources Commission;
- PRMC providing significant in kind staffing to support the program;
- Working on sustainability plans:
  - Demonstration of cost savings may allow for a waiver to be submitted to DMS;
  - Examine revenue/billing fee for home visits through health insurance carriers;
  - Support legislation to make this a billable service;
  - Work with Medicaid and CMMS to develop a system for payment for services rendered through SWIFT;
  - Reduction in EMT-P costs for city related to and in utilization will eventually save money in FTE costs.
Questions?

Lori Brewster, Health Officer
Wicomico County Health Department
lori.brewster@maryland.gov
(410) 543-6930