West Baltimore Mobile Integrated Health Program

Jennifer Brown, CRNP
Olufunke M. Sokan, PharmD
Agenda

• What is Mobile Integrated Health?
• Health Definition & Social Determinants of Health
• The West Baltimore MIH Program
  • Minor Definitive Care Now (911)
  • Transitional Health Support (non-911)
• Medication Reconciliation
What is Mobile Integrated Health – Community Paramedicine?

Allows paramedics and emergency medical technicians (EMTs) to operate in expanded roles by assisting with public health and primary healthcare and preventive services to underserved populations in the community.

- An evolving model of care that emphasizes integration across disciplines
- Comprehensive approach to care coordination and reducing health disparities
What Defines Health?

- Genetics: 30%
- Health Care: 10%
- Social and Environmental Factors: 20%
- Individual Behavior: 40%
## Social Determinants of Health: Priorities and Partners

<table>
<thead>
<tr>
<th>Economic Stability</th>
<th>Neighborhood and Physical Environment</th>
<th>Education</th>
<th>Food</th>
<th>Community and Social Context</th>
<th>Health Care System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>Housing</td>
<td>Literacy</td>
<td>Hunger</td>
<td>Social integration</td>
<td>Health coverage</td>
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<tr>
<td>Income</td>
<td>Transportation</td>
<td>Language</td>
<td>Access to healthy options</td>
<td>Support systems</td>
<td>Provider availability</td>
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<td>Expenses</td>
<td>Safety</td>
<td>Early childhood education</td>
<td></td>
<td>Community engagement</td>
<td>Provider linguistic and cultural competency</td>
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<tr>
<td>Debt</td>
<td>Parks</td>
<td>Vocational training</td>
<td></td>
<td>Discrimination</td>
<td>Quality of care</td>
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<tr>
<td>Medical bills</td>
<td>Playgrounds</td>
<td>Higher education</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Support</td>
<td>Walkability</td>
<td></td>
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### Health Outcomes
- Mortality, Morbidity, Life Expectancy
- Health Care Expenditures, Health Status, Functional Limitations
A Joint Partnership for West Baltimore

- The University of Maryland Medical Center (UMMC) and the Baltimore City Fire Department (BCFD) have partnered to implement two Mobile Integrated Health-Community Paramedicine pilot programs in West Baltimore, funded by HSCRC.

- **Transitional Health Support (THS)** is designed to optimize the transition of complex patients from hospital to home.

- **Minor Definitive Care Now (MDCN)** provides low acuity 9-1-1 patients with appropriate on-scene medical care negating the need for transport to an ED.
Mobile Integrated Health – Community Paramedicine (MIH-CP)

- Community-based
- Cost effective
- Provision of healthcare using mobile resources
- Outside the walls of the hospital and beyond the doors of the ambulance

Key Components
- Patient-centered
- Collaborative
- Results in improved healthcare access
MIH Summary

MIH initially created to bridge the gap for patients living in rural areas with medical needs due to chronic medical conditions.

As healthcare has evolved, MIH is now needed in urban settings such as Baltimore City to meet the healthcare demands of citizens.

The success of any MIH-CP relies on the partnerships and support from the surrounding health and social resources.

Primary Aims of MIH-CP:

1. Hospital Readmission
2. Frequent EMS/ED users
3. Chronic disease management
4. Alternative Destination

(NAEMT, 2018)
Mark Fletcher
Deputy Chief of Emergency Medical Service
Baltimore City Fire Department

Jessica Thomas
Paramedic
BCFD

Vacant
Operations Specialist
BCFD

Raymond Bartock
Battalion Chief-
Administration
BCFD

William McCarren
Battalion Chief-
Operations
BCFD

Anita Hagley
Captain
QA/QI
BCFD

Erinn Harris
Lieutenant
QA/QI
BCFD
The West Baltimore MIH Team

- **Community Health Workers (CHWs)**
  - Daily operations
  - Enroll patients into MIH
  - Provide care coordination

- **Social Work**
  - Assist in non-medical issues
  - One-on-one counseling and mental health evaluations
  - Connect patients with community resources

- **Pharmacist**
- **Pharmacy tech**
- **Nurse Practitioners**
  - Leadership
  - THS clinical oversight
  - MDCN
The West Baltimore MIH Team

- **Healthcare Economist/Statistician**
  - Data Analysis
  - Design and Execute Research

- **Quality/Safety Director**
  - Identify best practices to ensure patient safety
  - Coordinate and integrate QI plans and processes
  - Track metrics

- **Physicians**
  - Leadership
  - THS clinical oversight
  - MDCN

- **Paramedics**
  - Help manage patients with chronic conditions
  - Provide patient education
  - Provide on the scene care with MDCN

- **Program Analyst**
  - Program assessment
  - Protocol development
  - Prepare quarterly and business reports

- **Program Manager**
  - Oversee NP’s, CHWs, Social work
  - Strategic planning
  - Budget development
Building a Successful MIH Program

- **Interdisciplinary Team**
  - BCFD Providers
  - UMB School of Medicine
  - UMB School of Social Work
  - UMB School of Pharmacy

- **Epic Documentation**

- **Telemedicine**

- **Operational Model**
  - 48hr initial visit follow-up
Minor Definitive Care Now (MDCN)
Model of Minor Definitive Care Now (MDCN)

- MDCN augments the routine Baltimore City 911 service and provides an option for low acuity 9-1-1 patients to avoid EMS transport and ED evaluation, mitigating ED overcrowding.

- The Community Paramedicine Team responds to low acuity 911 calls within a defined catchment area.

- If appropriate, patients are offered on scene definitive evaluation and treatment thereby negating the need for EMS transport to a local emergency department.
Minor Definitive Care Now - Outcomes

For Patients Treated by MDCN Team:

**Overall Patient Satisfaction Score 9.5 out of 10**

MDCN Patient Quotes:

“This is great; I do not want to go to the ED.”

“I can’t get an appointment with my doctor until next week; thank you so much.”

**Types of Complaints Evaluated by MDCN Team**

<table>
<thead>
<tr>
<th>Types of Complaints</th>
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<tbody>
<tr>
<td>Ear, Nose, Mouth, and Throat Concerns</td>
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<tr>
<td>Digestive System Issues</td>
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<tr>
<td>Musculoskeletal Pains/injuries</td>
</tr>
<tr>
<td>Rashes</td>
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</tbody>
</table>

- No safety related issues
- 97% of patients that were definitively treated by MDCN did not present to an Emergency Department within 72 hours after MDCN treatment.
MDCN Program Analysis

- Potential Benefits
  - **Direct**
    - Potential cost savings per patient definitively treated by MDCN is approx: $1500
    - Time Savings of EMS resource utilization: 44 minutes
  - **Indirect**
    - Decreased ED wait times
    - Decreased LWBS

![MDCN Patient Diagnoses](image)
MDCN Program Accomplishments

- Provider Referral
- Received approval for modification and expansion of MDCN program’s catchment area
- Began utilizing Lyft service to transport patients to urgent care instead of emergency department as clinically appropriate
- Implemented 24-hour follow-up phone call to patients who received definitive treatment on scene with MDCN
Transitional Health Support (THS)
Multidisciplinary Operational Model of THS

- The THS program is anchored on 3 tenants: **Seamless, Coordinated and Comprehensive**
- THS focuses on improving health at less cost for medically and socially complex individuals in West Baltimore for 30-days after hospital discharge.

*THS providers assessing a patient and the robust multidisciplinary support provided to the team coordinated through the UMMC Operations Center*
## THS Demographics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N=172</th>
</tr>
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<tbody>
<tr>
<td>Age in years, average (range)</td>
<td>62 (25-97)</td>
</tr>
<tr>
<td>Female</td>
<td>108 (63%)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>152 (88%)</td>
</tr>
<tr>
<td>White</td>
<td>20 (12%)</td>
</tr>
<tr>
<td>Inpatient (vs observation)</td>
<td>114 (66%)</td>
</tr>
<tr>
<td>Mode of transport to hospital</td>
<td></td>
</tr>
<tr>
<td>Ambulance</td>
<td>82 (48%)</td>
</tr>
<tr>
<td>Car</td>
<td>76 (44%)</td>
</tr>
<tr>
<td>Walking</td>
<td>14 (8%)</td>
</tr>
<tr>
<td>Primary diagnosis</td>
<td></td>
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<tr>
<td>Diseases and Disorders of the Circulatory System</td>
<td>46 (27%)</td>
</tr>
<tr>
<td>Diseases and Disorders of the Digestive System</td>
<td>18 (10%)</td>
</tr>
<tr>
<td>Disease and Disorders of the Respiratory System</td>
<td>41 (24%)</td>
</tr>
<tr>
<td>Diseases and Disorders of the Kidney and Urinary Tract</td>
<td>14 (8%)</td>
</tr>
<tr>
<td>Other</td>
<td>53 (31%)</td>
</tr>
<tr>
<td>Payer</td>
<td></td>
</tr>
<tr>
<td>Medicaid</td>
<td>64 (37%)</td>
</tr>
<tr>
<td>Medicare</td>
<td>101 (59%)</td>
</tr>
<tr>
<td>Commercial</td>
<td>7 (4%)</td>
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</tbody>
</table>
THS Program Patient Challenges

Percent of Enrollees with Substance Abuse Issues

Average Distribution of Needs Identified per THS Enrollee
Risk-Adjusted Readmission Rates

- The overall risk-adjusted readmission rate for the program’s first operational year was 14.8%.
- The THS monthly risk-adjusted readmission rate shows a downward trend, while the non-THS cohort remains relatively stable.
NAVIGATING THE WORLD OF MEDICATION SAFETY VIA MOBILE INTEGRATED HEALTH
Why Medication Reconciliation?

According to the Institute for Healthcare Improvement, poor communication of medical information at transition points is responsible for as many as 50% of all medication errors and up to 20% of adverse drug events in hospitals. This is precisely why the Joint Commission has focused the nation’s attention on reducing the risk of errors during these transition points through medication reconciliation.¹

Definition: Medication Reconciliation

Medication reconciliation is the process of creating the most accurate list possible of all medications a patient is taking — including drug name, dosage, frequency, and route — and comparing that list against the physician’s admission, transfer, and/or discharge orders, with the goal of providing correct medications to the patient at all transition points within the hospital\(^1\).

Medication reconciliation involves a three-step process: verification (collecting an accurate medication history); clarification (ensuring that the medications and doses are appropriate); and reconciliation (documenting every single change and making sure it “squares” with all the other medication information).

\(^1\)http://www.ihi.org/Topics/ADEsMedicationReconciliation/Pages/default.aspx#targetText=Medication%20reconciliation%20is%20the%20process,transition%20points%20within%20the%20hospital. Last Accessed on 10/01/2019.
MIH-CP Med Rec Process
CPhT Role and Responsibilities (DURING HOME VISIT)

- **Collaborate with the MIH PharmD to:**
  - Identify Med Rec discrepancies between After Visit Summary (AVS) vs Medications in home
  - Assess adherence by identifying medication stock piling and late refills based on last refill date and approximate amount of pills left in the medication bottle
  - Check expiration dates on medications
  - Check insulin devices for storage and expiration
  - Facilitate telehealth visits with MIH PharmD
  - Verify directions on prescription labels with patient
  - Perform any additional request as needed by MIH PharmD
  - Document any discrepancies and adherence issues in EPIC form
MIH-CP Med Rec Process

CPhT Role and Responsibilities (AFTER HOME VISIT)

- Calling prescribers to transmit prescriptions for missing meds to patients’ local pharmacy
- Calling local pharmacies to assist patients with refilling medications
- Working with local pharmacies to resolve insurance issues
- Refer patients to local pharmacies able to provide patient centered solutions to patients needs (home delivery, bubble packaging, waived Medicaid copay etc.)
- Coordinate prescription transfer from one pharmacy to another with patient’s consent
- Coordinate medication home delivery when necessary
MIH-CP Med Rec Process

MIH PharmD Role and Responsibilities

- Review medications in patient’s chart, discharge summary and prescriptions claims data
- Identify and resolve discrepancies in medications, dosing, and directions
- Identify and resolve missing medications from pts home or from discharge summary or any other medication errors including omissions, duplications, interactions or adverse effects
- Provide patient and/or caregiver education on disease process, medications and complications
- Consult with patient’s retail pharmacy to resolve any medication problems identified
- Consult with patient’s PCP or discharging provider to follow up on any medication discrepancies
Medication Related Problems

Frequency of Medication Related Problems
01/2019 to 06/2019

Medication Related Problem Category
**Examples of specific interventions and problems solved by MIH Pharmacist**

<table>
<thead>
<tr>
<th>Interventions</th>
<th>Examples</th>
</tr>
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</table>
| Missing Medication      | • Furosemide not restarted in heart failure patient at discharge. Added medication to discharge  
                           • Patient discharged on basal-bolus insulin but no prescription was sent for Novo log. Reached out to discharging provider, new prescriptions written. |
| Dose Adjustment         | • Patient started on Xarelto 20mg daily at discharge with CrCl of 35ml/min. Dose adjusted for renal function and lowered to 15mg daily.                                                                 |
| Duplicate therapy       | • Patient prescribed both home bisoprolol and metoprolol at discharge. Home bisoprolol resumed at discharge.                                                                                      |
| Drug Interaction        | • Home simvastatin 40mg daily restarted in patient recently started on amlodipine for blood pressure. Simvastatin changed to atorvastatin.                                                         |
| Omissions               | • Restarting home medications omitted at discharge                                                                                                                                                    |
Mobile Integrated Health - Community Paramedicine Program

Supporting individuals’ health by providing the **right care** at the **right time** and in the **right place**.
Thank You