

Measuring the Value of Community Health EMS (CHEMS) *Introduction and Overview*



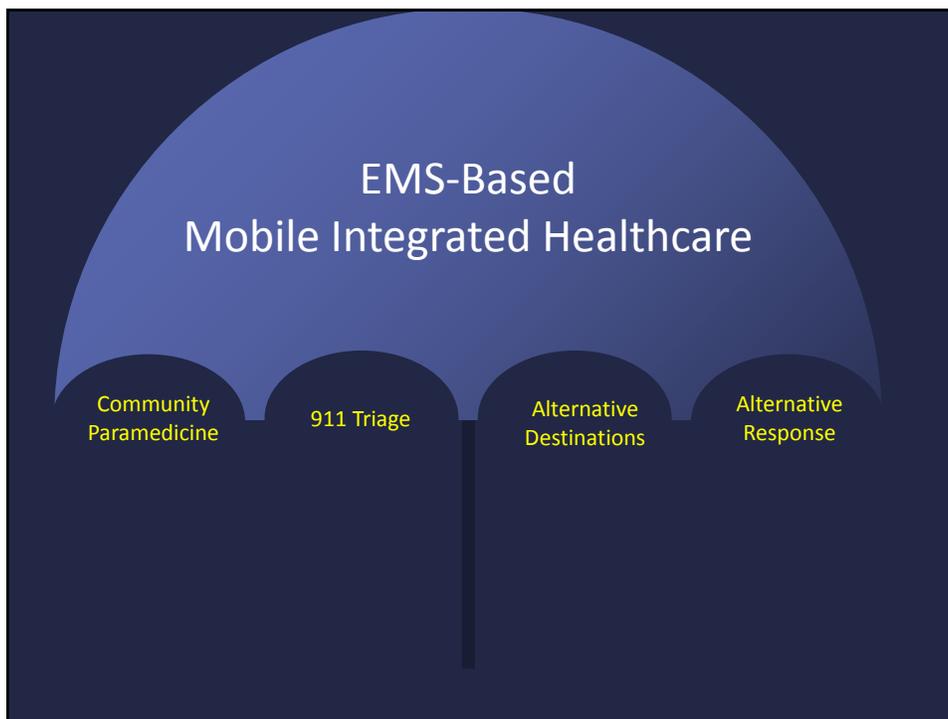
Matt Zavadsky, MS-HSA, EMT
Public Affairs Director
MedStar Mobile Healthcare



Why Outcome Measures?

- Healthcare is moving to outcome-based economic models
 - Healthcare 3.0
- “EMS” is healthcare
 - EMS 3.0
- MIH-CP moves even further into the healthcare space
- Key to sustainability is proof of value





INTUBATION RESEARCH p. 30 | APNIC OXIGENATION p. 36 | SURGICAL APPROX p. 42

JANUARY 2015 | VOL. 44, NO. 1 \$7.00

EMSWORLD

CHARTING THE FUTURE OF EMS

Visit us online at www.emsworld.com

MIH "How To"

Yearlong series outlines road map for EMS success in the mobile integrated healthcare arena p. 50

PART 1: Strategic Planning for Legal Implementation

- Home Health Care Subsites
- Rural Program Development
- MIH Program Accreditation
- MIH Practitioner Education
- The Paper Perspective
- International MIH Models
- Data Metric Designation
- Insurance Grant Updates
- MIH Practitioner Selection

Are You an Overworked Educator? p. 56

EMSWORLD 5000 2015 January 12-19, 2015 Las Vegas, NV www.emsworld.com

OUTCOME MEASURES

MIH-CP Outcome Measures

By Matt Zandberg, MD/FA, EMT, Brenda Sullivan, & Don Douglas, DPM, MBA, MEMS

Framework and Reference Sources

We started by framing up the project and articulating our goals. The team wanted to ensure focus on the 2015 improvement methodology and measurement strategy, and focus on measures that are consistent with the goals of the Triple Aim, as external stakeholders would be familiar with these goals.

It also became apparent that there are three basic types of measures:

- Program Structure** (how the program is put together to meet the goals)
- Process** (the way the intervention is carried out)
- Outcomes** (what the result is from the intervention)

Program structure measures include components like executive sponsorship, community outreach, assessment documentation, strategic plan and sustainability plan. Process measures would be things like time from referral to enrollment, patient to provider ratio and cost of the intervention. While we did that process measures were important, given such a short time frame to demonstrate the value of MIH-CP services, we decided to focus first on our core measures. Outcome measures include changes in healthcare utilization which drive cost of care, patient health status and patient experience measures.

Since many of these are the Outcome Measures Tool team has had the opportunity to not only meet extensively with external stakeholders, but also present at numerous national conferences, we are familiar with key questions being asked and attempted to address in the Tool.

- Are these programs safe for patients?
- Are these programs providing quality services as defined by external stakeholders?
- What has been the impact on the rest of the healthcare system providers, such as primary care, specialty care and behavioral health, as a result of these programs?
- Do patients like the program?
- Do providers conducting the MIH-CP services like the program?

Based on questions like these, and learning from

Intent of the Strategy

- Develop uniform measurement
 - Replication of successful programs
 - Build evidence base
 - Increased “N” for evaluation
- Origin
 - Meetings with CMS & CMMI
 - Meetings with AHRQ & NCQA
- Build consortium of MIH programs



The Process...

- **Phase 1:** First draft “Uniform MIH Measures Set”
 - June - September ‘14

Brenda Staffan
Dan Swayze
Matt Zavadsky



The Process...

- **Phase 2:** Introduce to operating programs via webinar
 - October '14
 - Feedback process starts



Brian LaCroix
Gary Wingrove
Brent Myers



The Process...

- **Phase 3:** F2F national stakeholder/advocacy group meetings
 - November '14 (EMS World/AAA Annual Conference)
 - December '14 invitations to join process

- | | |
|--|---|
| <ul style="list-style-type: none"> • AAA • NAEMSP • ACEP • IAFC • IAFF • NEMSMA • AHRQ • IHI | <ul style="list-style-type: none"> • NAEMSE • NFPA • NCQA • NRHA • IAED • IAEMSC • NASEMSO • Operating MIH/CP Programs |
|--|---|



Current Participants

AAA
ACEP
AHRQ
 ASTHO
 CAAS
 AIMHI
CMS QIO - Health Insight
 Hennepin Technical College
 IAED
 IAEMSC
 IAFC
IAFF
IHI
 NAEMSE
 NAEMSP
 NAEMT
 National Rural Health Assoc
 NASEMSO
 NCQA
 NEMSIS
 NEMSMA
 NFPA
 UCLA
 UCSF
 Zoll

Mission Health
 Acadian Ambulance
Ada County Paramedics
 Allina Health System
 Arlington (TX) Fire Department
 AMR - California
 California EMS Authority
 Carlsbad Fire
 Cataldo Ambulance
 Chandler Fire & Medical Department
 Christian Hospital EMS
 Dallas Fire Department
 Dixie Regional Medical Center
 Eagle County, CO
 Humbolt General Hospital
 Idaho EMS Bureau
 Lifeguard Ambulance Service
 Louisville, KY EMS
 McKinney, Texas Fire Department
 MEDAVEE EMS, MA
 EasCare Ambulance
 Medic Ambulance
 MedStar Mobile Healthcare
 MedEx Ambulance
 Memphis Fire Department
 Mesa Fire & Medical Department

Mt. Sinai Hospital
 Nature Coast EMS
 New York State EMS Bureau
 North Memorial
 North Shore University/LIJ
 Prosser Health District
 REMSA
 San Diego Medical Enterprise
 UPMC Community Connect
 Wake County, NC
 West Allis, WI
 Yale New Haven Hospital
 Concierge Transport Services
 Allina Health System
 New Hampshire State EMS Office
 Arizona Department of Health Services
 Henry Ford Health System - Wyandotte Hospital
 Michigan Department of Health and Human Services



The Process...

- **Phase 3.5**
 - Rank “Top 10” measures (ok, 17)
- **Phase 4: Federal partner introduction**
 - April '15 during EMS On the Hill Day
 - AHRQ, NCQA, & CMS
- **Phase 5: Promote payment policy change**
 - CMS, national payers, etc.
- **Phase 6: Outcomes for Additional Interventions**
 - Nurse Triage
 - Ambulance Transport Alternatives
- **Phase 7: Process measures for CP intervention**



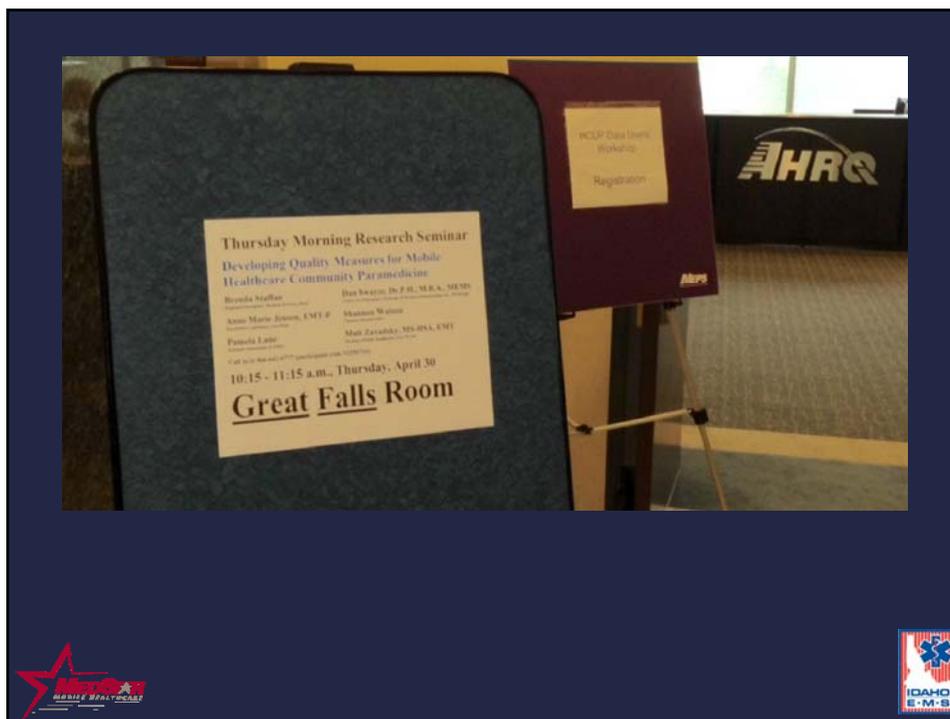


Chart Entry Part 1...

- “The patient is tearful and crying constantly. She also appears to be depressed.”
- “The patient has been depressed since she started seeing me in 1993.”
- “The patient had waffles for breakfast and anorexia for lunch.”



The Tool...

- Structure
- Layout
 - Structure & CP Intervention 1st
- Measure Domains:
 - Quality of Care & Patient Safety
 - Experience of Care
 - Utilization
 - Cost of Care/Expenditures
 - Balancing



The Tool...

- Formulas
- Measure priorities
- Feedback process
 - Structured
 - Responses



The Measures...



Mobile Integrated Healthcare Program

Measurement Strategy Overview

Aim

A clearly articulated goal statement that describes how much improvement by when and links all the specific outcome measures; what are we trying to accomplish?

Develop a uniform set of measures which leads to the optimum sustainability and utilization of patient centered, mobile resources in the out-of-hospital environment and achieves the Triple Aim[®] – improve the quality and experience of care; improve the health of populations; and reduce per capita cost.

Measures Definition:

1. **Core Measures (BOLD)**
 - a. Measures that are considered essential for program integrity, patient safety and outcome demonstration.
2. **CMMI Big Four Measures (RED)**
 - a. Measures that have been identified by the CMS Center for Medicare and Medicaid Improvement (CMMI) as the four primary outcome measures for healthcare utilization.
3. **MIH Big Four Measures (PURPLE)**
 - a. Measures that are considered mandatory to be reported in order to classify the program as a bona-fide MIH or Community Paramedic program.
4. **Top 17 Measures (highlighted)**
 - a. The 17 measures identified by operating MIH/CP programs as essential, collectable and highest priority to healthcare partners.

Notes:

1. All financial calculations are based on the *national average Medicare payment* for the intervention described. Providers are encouraged to also determine the *regional average Medicare payment* for the interventions described.
2. Value may also be determined by local stakeholders in different ways such as reduced opportunity cost, enhanced availability of resources. Program sponsors should develop local measures to demonstrate this value as well.



Table of Contents		Page
Structure/Program Design Measures		6
• S1: Executive Sponsorship		6
• S2: Strategic Plan		6
• S3: Healthcare Delivery System Gap Analysis		7
• S4: Community Resource Capacity Assessment		8
• S5: Integration/Program Integrity		8
• S6: Organizational Readiness Assessment – Medical Oversight		9
• S7: Organizational Readiness Assessment - Health Information Technology (HIT)		10
• S8: HIT Integration with Local/Regional Healthcare System		10
• S9: Public & Stakeholder Engagement		11
• S10: Specialized Training and Education		11
Outcome Measures for <i>Community Paramedic</i> Program Component		12
• Quality of Care & Patient Safety Metrics		
o Q1: Primary Care Utilization		12
o Q2: Medication Inventory		12
o Q3: Care Plan Developed		12
o Q4: Provider Protocol Compliance		12
o Q5: Unplanned Acute Care Utilization (e.g., emergency ambulance response, urgent ED visit)		12
o Q6: Adverse Outcomes		13
o Q7: Community Resource Referral		13
o Q8: Behavioral Health Services Referral		13
o Q9: Alternative Case Management Referral		13
• Experience of Care Metrics		
o E1: Patient Satisfaction		14
o E2: Patient Quality of Life		14
• Utilization Metrics		
o U1: Ambulance Transports		15
o U2: Hospital ED Visits		15
o U3: All-cause Hospital Admissions		15
o U4: Unplanned 30-day Hospital Readmissions		15
o U5: Length of Stay		15



	Page
• Cost of Care Metrics – Expenditure Savings	
o C1: Ambulance Transport Savings (ATS)	16
o C2: Hospital ED Visit Savings (HEDS)	16
o C3: All-cause Hospital Admission Savings (ACHAS)	16
o C4: Unplanned 30-day Hospital Readmission Savings (UHRS)	16
o C5: Unplanned Skilled Nursing (SNF) and Assisted Living Facility (ALF) Savings (USNFS)	17
o C6: Total Expenditure Savings	17
o C7: Total Cost of Care	18
• Balancing Metrics	
o B1: Provider (EMS/MIH) Satisfaction (Desirable Measure)	19
o B2: Partner Satisfaction (Desirable Measure)	19
o B3: Primary Care Provider (PCP) Use	19
o B4: Specialty Care Provider (SCP) Use	19
o B5: Behavioral Care Provider (BCP) Use	19
o B6: Social Service Provider (SSP) Use	19
o B7: System Capacity – Emergency Department Use	19
o B8: System Capacity – PCP	20
o B9: System Capacity – SCP	20
o B10: System Capacity – BCP	20
o B11: System Capacity – SSP	20
Definitions	21



Structure/Program Design Measures <i>Describes the development of system infrastructures and the acquisition of physical materials necessary to successfully execute the program</i>				
Name	Description of Goal	Components	Scoring	Evidence-base, Source of Data
Executive Sponsorship	S1: Program has <u>Executive level commitment</u> and the program manager reports directly to the Executive leadership of the organization.	The community paramedicine program plan clearly identifies organizational executive level commitment for the human, financial, capital and equipment necessary to develop, implement, and manage the community paramedicine program both clinically and administratively.	0. Not Known 1. There is no evidence of organizational executive level commitment 2. There is some evidence of limited commitment for the program. 3. There is evidence of full commitment for the program.	Documents submitted by agency demonstrating this commitment such as approved budgets, organizational chart and job descriptions
Strategic Plan	S2: The program has an executive level approved strategic plan.	The strategic plan should be based on the knowledge of improvement science and rapid cycle testing, and include the key components of a driver diagram, specific measurement strategies, implementation milestones and a <u>financial sustainability plan</u> .	0. Not Known. 1. No evidence of a strategic plan. 2. A written strategic plan, but it lacks key components. 3. A written strategic plan that includes all key components.	Institute for Healthcare Improvement



General Definitions
<ul style="list-style-type: none"> • Adverse Outcome: Death, temporary and/or permanent disability requiring intervention • All Cause Hospital Admission: Admission to an acute care hospital for any admission DRG • Average Length of Stay: The average duration, measured in days, of an in-patient admission to an acute care, long term care, or skilled nursing facility • Care Plan: A written plan that addresses the medical and psychosocial needs of an enrolled patient that has been agreed to by the patient and the patient's primary care provider • Case Management Services: Care coordination activities provided by another social service agency, health insurance payer, or other organization. • Core Measure: Required measurement for reporting on MIH-CP services • Critical Care Unit Admissions or Deaths: Admission to critical care unit within 48 hours of CP intervention; unexpected (non-hospice) patient death within 48 hours of CP visit • Desirable Metric: Optional measurement • Enrolled Patient: A patient who is enrolled with the EMS/MIH program through either; 1) a 9-1-1 or 10-digit call; or 2) a formal referral and enrollment process. • Evaluation: determination of merit using standard criteria • Financial Sustainability Plan: a document that describes the expected revenue and/or the economic model used to sustain the program. • Guideline: a statement, policy or procedure to determine course of action • Hotspotter/High Utilizers: Any patient utilizing EMS or ED services 12 times in a 12 month period, or as defined by local program goals. • Measure: dimension, quantity or capacity compared to a standard • Medication Inventory: 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.



Definitions

Specific Metric Definitions:

Expenditure: The amount **PAID** for the referenced service. Expenditures should generally be based on the national and regional amounts paid by Medicare for the covered services provided.

Examples:

Service	Cost to Provide the Service by the Provider	Amount Charged (billed) by the Provider	Average Amount Paid by Medicare
Ambulance Transport	\$350	\$1,500	\$420
ED Visit	\$500	\$2,000	\$969
PCP Office Visit	\$85	\$199	\$218

National CMS Expenditure by Service Type:

Service	Average Expenditure	Source
Emergency Ambulance Transport	\$419	Medicare Tables from CY 2012 as published
ED Visit	\$969	http://www.cdc.gov/nchs/data/hus/hus12.pdf
PCP Office Visit	\$218	http://meps.ahrq.gov/data_files/publications/st381/stat381.pdf
Hospital Admission	\$10,500	http://www.hcup-us.ahrq.gov/reports/projections/2013-01.pdf




Name	Description of Goal	Components	Scoring	Evidence-base, Source of Data
Public & Stakeholder Engagement	S9: Care Coordination Advisory Committee	Community paramedicine program, in concert with a multidisciplinary, multi-agency advisory committee meets regularly and advises the program on strategies for improving care coordination.	0. Not Known 1. There is no care coordination advisory committee. 2. There is an established care coordination advisory committee, but it is missing key stakeholders. 3. There is an established care coordination advisory committee and all key stakeholders are represented.	Adapted from HRSA Community Paramedic Evaluation Tool
Specialized Training & Education	S10: Specialized original and continuing education for community paramedic practitioners	A specialized educational program has been used to provide foundational knowledge for community paramedic practitioners based on a nationally recognized or state approved curriculum.	0. Not known 1. There is no specialized education offered. 2. There is specialized education offered, but it lacks key elements of instruction. 3. There is specialized education offered meeting or exceeding a nationally recognized or state approved curriculum.	North Central EMS Institute Community Paramedic Curriculum or equivalent.




Outcome Measures for <u>Community Paramedic Program Component</u> <i>Describes how the system impacts the values of patients, their health and well-being</i>						
Domain	Name	Description of Goal	Value 1	Value 2	Formula	Evidence-base, Source of Data
Quality of Care & Patient Safety Metrics	Q1: Primary Care Utilization	Increase the number and percent of patients utilizing a Primary Care Provider (if none upon enrollment)	Number of <u>enrolled patients</u> with an established PCP relationship upon graduation	Number of enrolled patients without an established PCP relationship upon enrollment	Value 1 Value 1/Value 2	Agency records
	Q2: Medication Inventory	Increase the number and percent of medication inventories conducted with issues identified and communicated to PCP	Number of medication inventories with issues identified and communicated to PCP	Number of medication inventories completed	Value 1 Value 1/Value 2	Agency records
	Q3: Care Plan Developed	Increase the number and percent of patients who have an identified and documented plan of care with outcome goals	Number of patients with a plan of care communicated with the patient's PCP	All enrolled patients	Value 1 Value 1/Value 2	Agency records






Chart Entry Part 2...

- “The skin was moist and dry.”
- “The patient was alert and unresponsive.”
- “I saw your patient today, who is still under our car for physical therapy.”
- “Skin: Somewhat pale, but present.”
- “The patient has two teenage children, but no other abnormalities.”



Domain	Name	Description of Goal	Value 1	Value 2	Formula	Evidence-base, Source of Data
Experience of Care Metrics	E1: Patient Satisfaction	Optimize patient satisfaction scores by intervention.	To be determined based on tools developed	To be determined based on tools developed		Recommend an externally administered and nationally adopted tool, such as, HCAPHS; Home Healthcare CAPHS (HHCAPHS)
	E2: Patient Quality of Life	Improve patient self-reported quality of life scores.	To be determined based on tools developed	To be determined based on tools developed		Recommended tools (EuroQol EQ-5D-5L, CDC HRQoL, University of Nevada-Reno)




Domain	Name	Description of Goal	Value 1	Value 2	Formula	Notes
Utilization Metrics	U1: Ambulance Transports	Reduce rate of unplanned ambulance transports to an ED by enrolled patients	Number of <i>unplanned</i> ambulance transports up to 12 months post-graduation	Number of <i>unplanned</i> ambulance transports up to 12 months pre-enrollment	(Value 1 - Value 2)/Value 2	Monthly run chart reporting and/or pre-post intervention comparison
	U2: Hospital ED Visits	Reduce rate of ED visits by enrolled patients by intervention	ED visits up to 12 months post-graduation OR Number of ED Visits avoided in CP Intervention patient	ED visits up to 12 months pre-enrollment	(Value 1 - Value 2)/Value 2 Value 1	Monthly run chart reporting and/or pre-post intervention comparison
	U3: All-cause Hospital Admissions	Reduce rate of all-cause hospital admissions by enrolled patients by intervention	Number of hospital admissions up to 12 months post-graduation	Number of hospital admissions up to 12 months pre-enrollment	(Value 1 - Value 2)/Value 2	Monthly run chart reporting and/or pre-post intervention comparison




Domain	Name	Description of Goal	Value 1	Value 2	Formula	Evidence-base, Source of Data
Balancing Metrics	B1: Practitioner (EMS/MIH) Satisfaction **Desirable Measure**	Optimize practitioner satisfaction scores.	To be determined based on tools developed			Recommend externally administered
	B2: Partner Satisfaction **Desirable Measure**	Optimize partner (healthcare, behavior health, public safety, community) satisfaction scores	To be determined based on tools developed			Recommend externally administered
	B3: Primary Care Provider (PCP) Use	Optimize Number of PCP visits resulting from program referrals during enrollment	Number of PCP visits during enrollment		Value 1	Network provider or patient reported



Measures Template

MMI Outcome Measures Worksheet - Community Paramedicine Intervention

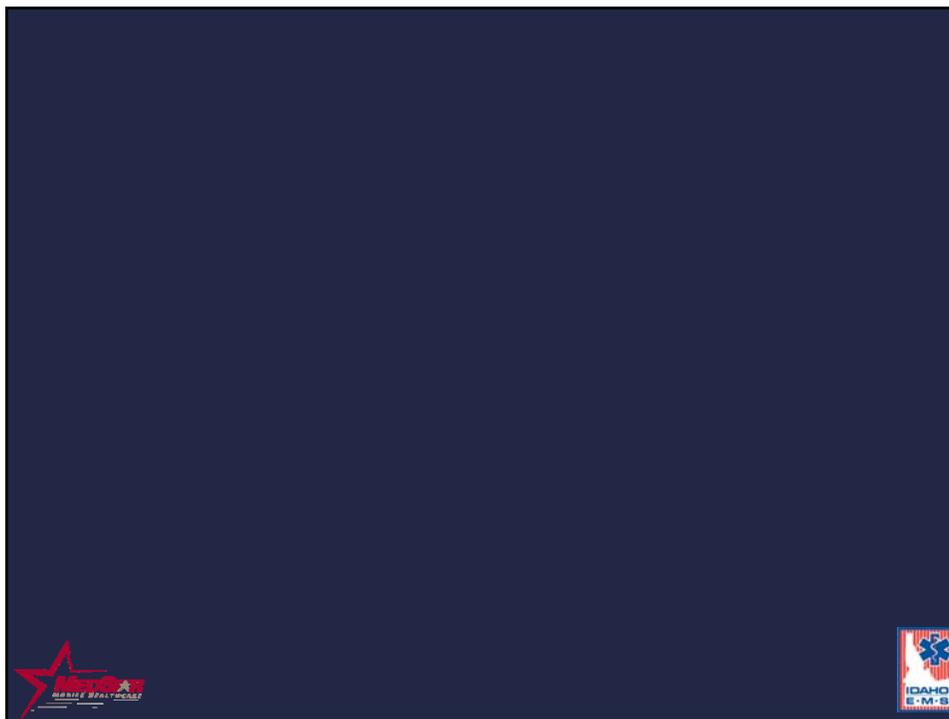
Measure	Description	Input	Value	Goal	Output	Result	U	S
Q1 Primary Care Utilization	Number of enrolled patients with an established PCP relationship upon graduation			Increase the number and percent of patients utilizing a Primary Care Provider (from upon enrollment). Higher Values Desirable		BCFWS	SS	1
	Number of enrolled patients without an established PCP relationship upon enrollment							
Q2 Medication Inventory	Number of medication inventories with issues identified and communicated to PCP			Increase the number and percent of medication inventories conducted with issues identified and communicated to PCP. Higher Values Desirable		BCFWS	SS	1
	Number of medication inventories completed							
Q3 Unplanned Acute Care Utilization (e.g. emergency ambulance responses, urgent ED visits)	Number of patients who require unplanned acute care related to the CP care plan within 8 hours after a CP intervention			Minimize rate of patients who require unplanned acute care related to the CP care plan within 8 hours after a CP intervention. Lower Values Desirable		BCFWS	SS	
	All CP visits in which a referral to Acute Care was NOT recommended							



MHI Outcome Measures Worksheet - Community Paramedicine Intervention								
Agency: MedStar Mobile Healthcare			Agency entered information field					
Location: Fort Worth, TX			Hard coded field					
Number of enrolled patients: 95			No entry required					
ID	Measure	Description	Input	Value	Goal	Output	Result	
Q1	Primary Care Utilization	Number of enrolled patients with an established PCP relationship upon graduation		59				
		Number of enrolled patients without an established PCP relationship upon enrollment		77			76.3%	10
Q2	Medication Inventory	Number of medication inventories with issues identified and communicated to PCP		160				
		Number of medication inventories completed		100			92.5%	160
Q3	Unplanned Acute Care Utilization (e.g. emergency ambulance response, urgent ED visit)	Number of patients who require unplanned acute care related to the CP care plan within 6 hours after a CP intervention		2				
		All CP visits in which a referral to acute care was NOT recommended		153			0.1%	0
Q4	Adverse Outcomes	Number of deaths from a cause related to CP intervention		0				
		All patient encounters/interventions		153			0.00%	0

	Q7: Acute Care Use	Minimize occurrence of nurse triage calls that result in an acute care referral for a medical complaint related to the complaint handled by the triage nurse.	Number of calls with an alternate disposition in which an emergency ambulance response was generated within 6 hours for a medical need related to the one referred to the triage nurse.	Total number of calls with an alternate disposition.	Value 1/Value 2.	Procedure description to attain this goal...
	Q6: Adverse Outcome	Minimize occurrence of adverse outcomes.	Number of calls with an alternate disposition in which the <u>Enrolled Patient</u> died, or had an intensive care hospital admission within 6 hours for a medical condition related to the one referred to the triage nurse.	Total number of calls with an alternate disposition.	Value 1/Value 2.	Procedure description to attain this goal...

Name	Affiliation
Matt Zavadsky, Chair	MedStar Mobile Healthcare
Steve Myers	Mobile Medical Resources
Mark Rector	IAED
Jonathan Washko	North Shore/LIJ Health System
Laurie Blom	North Shore/LIJ Health System
Sara Tracy	Kaiser Permanente
Cheryl Patterson	Evergreen Health
Neal Richmond, MD	Emergency Physicians Advisory Board
Wen Dombrowski, MD	North Shore/LIJ Health System
Gigi Marshall	Priority Solutions



Feedback...

MIH Measurement Strategy Feedback Form

Submitted by: Kevin Munjal Representing: NY Mobile Integrated Healthcare Association / Mount Sinai Date: 12/15/2014
 Name Agency/Association

Measure # and Title	Recommendation for Change	Rationale
S1 Executive Sponsorship	Scoring of "There is no evidence ..." should be changed to 0 or perhaps be equivalent to "Not Known"	No evidence of organizational executive level commitment could potentially mean there is a lack of interest and support and perhaps even resistance or other barriers to success coming from inside the organization. This is potentially worse than being "Not Known" perhaps because key conversations have not yet occurred.
S2 Strategic Plan	Overlap with S1. Scores 0 and 1 should be combined.	S2 seems dependent on S1. Full commitment of executive leadership is a pre-requisite to having a strategic plan approved. Should these really be separate measures or should a Strategic Plan be the required evidence in measure S1. Depending on how the scores are being used, it may be unfairly weighting the same element. Perhaps the scale for S1 should be able to go up to 5 or 6. Again, scores 0 and 1 are equivalent.
S3 Healthcare Delivery System Gap Analysis	Should be down weighted. Maybe no more than 2 points. Add expiration date.	This is obviously outside the scope of the EMS agency. If they are fortunate that one has been performed, they are not all created equal. When does a GAP analysis expire? 5 years? 10 years?
S4 Community Resource Capacity Assessment	Overlap with S3.	Better phrasing overall. Seems to be more achievable by individual agency. No specific change but would shift emphasis from S3 to S4.
S8 HIT Integration with Local / Regional Healthcare System	Make data exchange bi-directional	It seems that this measure is only assessing the information from the CP encounter being available to administrators (and at level 3) to primary care and others. Either in this measure or in a separate measure, CP / EMS providers should receive meaningful and relevant information from the healthcare system prior to / during their encounter.

Feedback...

- Comments during AHRQ, NCQA and CMMI meetings week of April 26 – 30, 2015
 - “You don’t need randomized control studies to prove that parachutes save lives.”
 - NCQA referencing our obsession with NQF and evidence-based outcome measures
 - “Wow, 44 measures – That’s A LOT.”
 - CMMI on the number of measures
 - “44 is really good, 4 is better.”
 - AHRQ council on performance measures



Limited Effects of Care Management for High Utilizers on Total Healthcare Costs

Brent C. Williams, MD, MPH

May 7, 2015



Estimates of total cost savings from care management in randomized trials are consistently low or none, in contrast to many current explicit or implied claims to the contrary.

Therefore, it can be observed that: ***Much of the current literature and promotional materials based on nonrandomized studies dramatically overestimates total cost savings from care management for high-utilizing patients.***

Interest and investment in care management for high utilizers has exploded in recent years, with large demonstration trials by Medicare, CMS Innovations, and the Robert Wood Johnson Foundation.

Care management programs whose objectives include lowering total costs should adopt practices of demonstrated effectiveness from randomized trials when available.

Funders and researchers should promote randomized trials of care management for high-cost patients.

<http://www.ajmc.com/journals/issue/2015/2015-vol21-n4/Limited-Effects-of-Care-Management-for-High-Utilizers-on-Total-Healthcare-Costs>



Critical examination of the reports reveals, however, that the vast majority of studies describing substantial cost savings are not randomized trials; most often, they compare the costs of a single cohort before and after entering care management, or compare the costs of an intervention group with an arguably similar contemporaneous group.

Among randomized trials, the picture is significantly different, with the effects of care management for high-utilizing patients on total costs demonstrated as limited or nonexistent.

Discussions and reports describing nonrandomized trials should be placed in the context of the results, strengths, and limitations of randomized trials, as with any other medical intervention. This should lead to explicit analyses of how, and by how much, the reported trial may overestimate effects on total costs.

Care management models implemented by health systems, providers, and payers should be better informed by the last 20 years of evidence related to care management and less driven by uninformed promises of quick savings and simple solutions. As they do so, effects on total healthcare costs should be expected to be modest. By keeping this fact in mind, care management can be most effectively implemented, and its effects measured, to improve health, avoid decline, and limit avoidable costs among our most vulnerable patients.



Practical Application...



EMS Loyalty Program

- 296 Patients enrolled
 - 2013 – 2015
- 207 **graduated** patients with 12 month data pre and post enrollment as of October 31, 2015...
 - **During enrollment (30 – 90 days)**
 - 42.1% reduction in 9-1-1 to ED use
 - **Post Graduation**
 - 50.7% reduction in 9-1-1 to ED use
 - 83.9% in reduction for “System Abusers”



Expenditure Savings Analysis (1) High Utilizer Program – All Referral Sources

Based on Medicare Rates

Analysis Dates: **October 1, 2010 - October 31, 2015**

Number of Patients Enrolled (2, 3): **207**

Category	Utilization Changes		
	Base	Avoided	Savings
Ambulance Payment (4)	\$419	2,901	(\$1,215,519)
ED Visits (5)	\$969	1,917	(\$1,857,573)
Admissions (6)	\$10,500	462	(\$4,851,000)
Total Expenditure Savings			(\$7,924,092)
Per Patient Enrolled			HUG
Expenditure Savings			(\$38,281)

Notes:

1. Comparison for enrolled patients based on use for 12 months prior to enrollment vs. 12 months **post program graduation**.
2. Patients with data 12 months pre and 12 months post graduation
3. Includes High Utilizer and Designated System Abusers
4. Medicare Tables from CY 2012 as published
5. <http://www.cdc.gov/nchs/data/abus/abus12.pdf>
6. <http://www.hcup-us.ahrq.gov/reports/projections/2013-01.pdf>



Patient Self-Assessment of Health Status (1)

As of: 10/31/15

	High Utilizer Group			Readmission Avoidance		
	Enrollment	Graduation	Change	Enrollment	Graduation	Change
Sample Size	153	77		77	63	
Mobility (2)	2.36	2.48	5.3%	2.29	2.47	8.0%
Self-Care (2)	2.61	2.77	6.2%	2.59	2.79	7.8%
Perform Usual Activity (2)	2.28	2.63	15.1%	2.25	2.62	16.1%
Pain and Discomfort (2)	1.93	2.42	25.1%	2.40	2.67	11.2%
Anxiety/Depression (2)	2.05	2.47	20.1%	2.37	2.63	10.9%
Overall Health Status (3)	4.90	6.78	38.3%	4.99	6.74	35.2%



Antoine Analysis

	Before	After	Change	Avg. Payment	Expenditure Savings
Ambulance Transports	11	0	-11	\$427	(\$4,697)
ED Visits	12	0	-12	\$774	(\$9,288)
Inpatient Admissions	4	0	-4	\$9,203	(\$36,812)
MIH Visits					22
MIH Visit Expenditure per Contact					\$75
MIH System Costs					\$1,650
Healthcare System Savings					(\$49,147)



9-1-1 Nurse Triage Patient Satisfaction

Through October 31, 2015

Please rate (2) the following: (N=279)	Score
The 9-1-1 call taking process	4.94
How the nurse handled call	4.94
If you feel the nurse understood your medical Issue	5.00
The alternate transportation provided	4.61

Did Your Medical Issue... (N=277)

Get Better	84.5%
Stay the Same	11.9%
Get Worse	3.6%

Did Speaking with the Nurse Help? (N=273)

Yes	93.4%
No	6.6%

Did Disposition Save Time and Money? (N=246)

Yes	94.7%
No	5.3%

Should Your Call Have Been Handled Differently? (N=293)

No	94.7%
Yes	15.0%




Expenditure Savings Analysis

Based on Medicare Rates

9-1-1 Nurse Triage Program

Analysis Dates: **June 1, 2012 - October 31, 2015**

Number of Calls Referred:	4,123		
% of Calls with Alternate Response	36.6%		
% of Calls with Alternate Destination	31.2%		

Category	Base	Avoided (4)	Savings
Ambulance Expenditure (1)	\$419	1,511	\$633,109
ED Expenditure (2)	\$969	1,226	\$1,187,994
ED Bed Hours (3)	6	1,226	7,356

Total Payment Avoidance \$1,821,103

Per Patient Enrolled	ECNS
Payment Avoidance	\$1,205

Notes:

1. From Medicare Payment Tables
2. <http://www.cdc.gov/nchs/data/hus/hus12.pdf>
3. Provided by John Peter Smith Health Network
4. Result of EPAB approved change to allow locus of care to include ED visit by alternate transportation




Readmit Program Analysis

June 2012 - June 2015 JPS & THR Combined
Patient Enrollments (1, 3) **119**

	30 Day ED Visits	30 Day Admissions
Count	43	33
Rate	36.1%	27.7%
Rate Reduction (2)	63.9%	72.3%
Expenditure per Admission (4)		\$ 10,500
Admissions Avoided		86
Expenditure Savings		\$ (903,000)
Admission Savings Per Patient		\$ (7,588)

Notes:

1. Patient enrollment criteria **requires a prior 30-day readmission** and the referral source **expects the patient to have a 30-day readmission**
2. **Compared to the anticipated 100% readmission rate**
3. Enrollment Period at least 30 days and less than 90 days
4. <http://www.hcup-us.ahrq.gov/reports/projections/2013-01.pdf>




MedStar MIH Healthcare Expenditure Savings Analysis:

June 2012 – October 2015

	Ambulance Transports			ED Visits			Hospital Admissions		
	Avoided	Expenditure	Savings	Avoided	Expenditure	Savings	Avoided	Expenditure	Savings
9-1-1 Nurse Triage	1511	\$ 419	\$ 633,109	1226	\$ 969	\$ 1,187,994			
High Utilizer Program	2901	\$ 419	\$ 1,215,519	1917	\$ 969	\$ 1,857,573	462	\$ 10,500	\$ 4,851,000
Readmission Prevention	81	\$ 419	\$ 33,939	78	\$ 969	\$ 75,582	91	\$ 10,500	\$ 955,500
Sub-Total			\$ 1,882,567			\$ 3,121,149			\$ 5,806,500

Total Expenditure Savings	\$ 10,810,216
----------------------------------	----------------------




Expenditure Savings Analysis NTSP Obs Admission Avoidance Program
 Analysis
 Dates: **August 1, 2012 - February 28, 2015**

Referred: 190
Enrolled: 128

Obs Admits Avoided

Category	Base	Avoided	Gross Savings	Enrollment Fees	Net Savings
Average Obs Admit Expense (1)	\$ 8,046	125	\$ 1,005,750	\$ 25,000	\$ 980,750
ED Bed Hours	23	125			2,875

Per Patient Enrolled	Obs Admit
Payment Avoidance	\$ 7,846

Notes:
 1. From North Texas Specialty Physician Records




Hospice Program Summary
 Sept. 2013 - October 2015

	#	%
Referrals (1)	256	
Enrolled (2)	175	
Deceased	121	69.1%
Active	28	16.0%
Improved	2	1.1%
Revoked (3)	25	14.3%

Activity:

	#	%
EMS Calls	77	
MHP on Scene	37	48.1%
Transports	46	59.7%
MHP O/S Transports	14	18.2%
Hospice Related	26	33.8%
Direct Admits	7	15.2%
ED visits	19	41.3%

Notes:
 (1) Patients referred who are identified as at high risk for voluntary disenrollment, or involuntary revocation.
 (2) Difference results from referrals outside the MedStar service area, or patients who declined program enrollment.
 (3) Patients who either voluntarily disenrolled, or had their hospice status revoked.




Patient Experience Summary
Through October 31, 2015

	Program			
	HUG	CHF	Admit Prevention	Overall Avg
Medic Listened?	4.98	4.92	4.95	4.95
Time to answer your questions?	4.96	4.92	4.86	4.94
Overall amount of time spent with you?	4.98	4.92	4.91	4.95
Explain things in a way you could understand?	4.98	4.92	5.00	4.95
Instructions regarding medication/follow-up care?	4.98	4.87	4.73	4.93
Thoroughness of the examination?	4.96	4.89	4.91	4.93
Advice to stay healthy?	4.96	4.92	4.91	4.94
Quality of the medical care/evaluation?	4.98	4.90	4.86	4.94
Level of Compassion	4.98	4.92	4.91	4.95
Overall satisfaction	4.92	4.90	4.95	4.91
Recommend the service to others?	98.0%	100.0%	100.0%	99.0%

Select Comments:
 Client states "You care more about my health than I do."
 "Keep the same compassionate, excellent people you have working for you now and your service will continue to be great! Everything was perfect, a 10!"
 "y'all have been off the charts helpful" "no complaints" "glad the hospital got it going for me"
 "Thank you very much! We couldnt have done this without you!"
 "The medics spent lots of time with me and provided very useful information. I really loved the program. They were very friendly and did an awesome job."
 "I love y'all, wonderful, Y'all 2 have been really big help and great with patience with me even though I'm a hard headed lil ol lady."




DSRIP/1115a Waiver Program

- Partnership with John Peter Smith Health Network to expand:
 - 9-1-1 Nurse Triage
 - High Utilizer Group
 - Obs Admit Avoidance
 - CHF



**Centered in Care
Powered by Pride**




Regional Healthcare Partnership		Region 10	
Summary of Categories 1-2 Projects			
Project Title	Brief Project Description	Related Category 3 Outcome Measure	Estimated Incentive Amount (DSRIP) for DYs 2-5
126675104.2.8 MedStar patient navigation JPS Hospital 126675104	Expand 911 Nurse Triage program and MedStar CHF program	126675104.3.29 IT-3.2 Reduction CHF readmission -126675104.3.52 IT-2.11 Ambulatory care sensitive conditions admission rate	\$4,814,232
Year 2 (10/1/2012 – 9/30/2013) Process Milestone 1: (P-1): Conduct a needs assessment to identify the patient population(s) to be targeted with the Patient Navigator program. (Including frequency and costs of episodic care for traditional care model.) Metric 1 (P-1): Provide report identifying the following: • Targeted patient population characteristics (e.g., patients with no PCP or medical home, frequent ED utilization, homelessness, insurance status, low health literacy). • Gaps in services and service needs.	Year 3 (10/1/2013 – 9/30/2014) Process Milestone 2: (P-3): Provide care management/navigation services to targeted patients. (Targeted patients include low acuity 911 callers, patients that are candidates for observation only admissions, frequent ED/EMS users and CHF patients at risk for 30-day readmissions.) Metric 1 [P-3]: Increase in the number or percent of targeted patients enrolled in the program Baseline/Goal: 911 Nurse Triage – Enroll 1500 in the program. Data Source: MedStar 911 Records	Year 4 (10/1/2014 – 9/30/2015) Milestone - 4: (I-S): -Reduction in ED use by identified ED frequent users receiving navigation services. Metric 1: I-S.1: 911 Nurse Triage: Reduce ED visits (pre and post navigation services) by 35% for the 911 Nurse Triage Program. Goal: 630 patients (35% of the 1,800 DY-4 enrollees) will be navigated away from the ED. Enroll 1800 new patients into the program. Data Source: MedStar 911 Records	Year 5 (10/1/2015 – 9/30/2016) Milestone - 5: (I-S): -Reduction in ED use by identified ED frequent users receiving navigation services. Metric 1: I-S.1: 911 Nurse Triage: Reduce ED visits (pre and post navigation services) by 40% for the 911 Nurse Triage Program. Goal: 840 patients (40% of the 2,100 DY-5 enrollees) will be navigated away from the ED. Enroll 2,100 new patients into the program. Data Source: MedStar 911 Records



Patient Navigation



Project Objective: JPS, in partnership with the health care system, to reduce preventable readmissions, to reduce the cost of care, and to improve the convenience of their home.

Program Overviews

- 911 Nurse Triage**
 - Intervention of low acuity 911 direct care to right setting in home setting
- CHF In-Home Management**
 - 30 day program to assist CHF discharge with accessing appropriate settings
- High Utilization Group (HUG)**
 - 90 day program to train high risk patients how to access care in appropriate settings

Key Facts @ JPS

- Patients with 4 or more visits to the emergency department have 54% inappropriate use of the emergency department*
- Patients with a primary diagnosis of heart failure (CHF) have one of the highest readmission rates @ 22%

*Per the NYU Algorithm

911 Nurse Triage Results:

911 calls directed to alternate treatment	518
% of calls redirected from ED	33%

Expenditure Savings: \$762,412

Readmission Results:

For 51 graduated patients at 100% risk for readmission 16 readmissions = 34.1 % readmissions

Expenditure Savings: \$367,500

High Utilization Group (HUG) Results:

For 95 graduated patients

- Reduction of 596 ED visits (46% reduction)
- Reduction of 115 admissions (40% reduction)

Expenditure Savings: \$1.8 million

Total DY 3 Project Expenditure Savings:

\$2.9 million

Since enrollment:

- No ED Visits or Admissions

Expenditure Savings: \$14,400

Patients at-risk for readmission on how to best manage - all from the home

Results:

- alternate treatment 518
- from ED 33%
- \$: \$762,412

Results:

- Patients at 100% risk for readmission 4.1 % readmissions
- \$: \$367,500

Group (HUG) Results:

- Patients 95
- ED visits (46% reduction)
- Admissions (40% reduction)
- \$: \$1.8 million

Project Expenditure Savings: \$2.9 million

Savings in FY 16

Patients to be served through MedStar patient navigation program interventions

Readmission Program – assist those at most risk of readmission with support for 30 days in the home setting

- HUG Group results

Utilization Outcome Summary As of: **Oct-15**

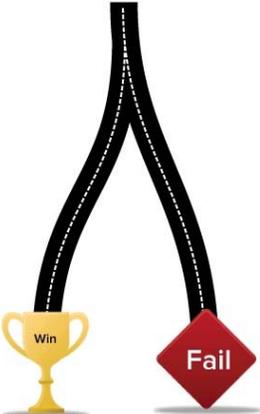
Home Health Partnership

	#	%
Enrollments by Home Health Agency	825	100.0%
9-1-1 calls by Enrolled Patients	568	68.8%
9-1-1 Calls by Enrolled Patients with an MHP on-scene	266	46.8%
ED Transports when MHP on Scene	166	62.4%
Home Visits Requested by Agency	192	23.3%
ED Transports from home visits requested by Agency	11	5.7%

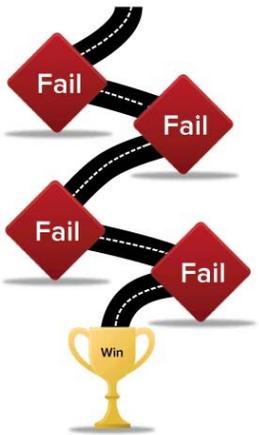



- ### Chart Entry Part 3...
- “The patient was to have a bowel resection, but took a job as a stock broker instead.”
 - “On the second day, the knee was better, on the third day, it was gone.”
 - “She is numb from her toes down.”
 - “The patient has no previous history of suicides.”
 - “The patient refused autopsy.”
 - “Discharge status: Alive, but without my permission.”
- 
- 

What Most People Think



What Successful People Know



@douglaskarr



Thank YOU for this Privilege!

Scan here for a copy
Of the Presentation

