"EMS" in the New Healthcare Environment

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About MedStar…

- Governmental agency (PUM) serving Ft. Worth and 14 Cities
  - Self-Operated
  - 980,000 residents, 421 Sq. miles
  - Exclusive provider - emergency and non emergency
- 125,000 responses annually
- 450 employees
- $37.5 million budget
  - No tax subsidy
- Fully deployed system status management
- Medical Control from 14 member Emergency Physician’s Advisory Board (EPAB)
  - Physician Medical Directors from all emergency departments in service area + 5 Tarrant County Medical Society reps

Attention Please!

- $9,695 per capita health expenditures!!
  - Due in large part to **<u>quantity-based</u>** payments

http://www.usatoday.com/story/news/nation/2015/07/28/cms-report-shows-health-spending-growth-faster-than-recent-years/30790253/

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Life expectancy in years

85
80
75
70
65

ITA, JPN, SWE, CHE, ISR, ESP, FRA, NOR, KOR, PRT, AUS, GRC, FIN, GBR, SVN, BEL, DEU, CAN, DNK, CHL, CZE, POL, EST, SVK, TUR, HUN, MEX, BRA, CHN, RUS, IND

$R^2 = 0.51$

0 | 2 000 | 4 000 | 6 000 | 8 000 | 10 000

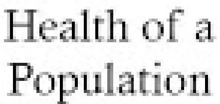
Health spending per capita (USD PPP)

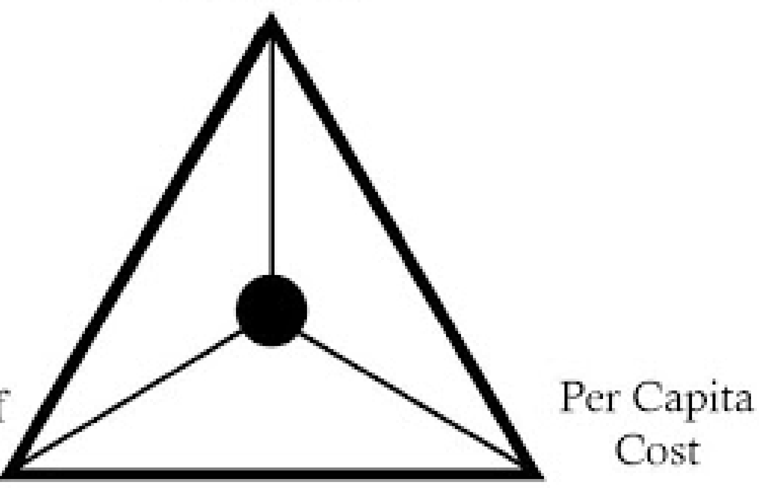
Source: OECD Health Statistics 2013, http://dx.doi.org/10.1787/health-data-en; World Bank for non-OECD countries.

StatLink http://dx.doi.org/10.1787/888932916040

IHI Triple Aim Initiative

Better Care for Individuals, Better Health for Populations, and Lower Per Capita Costs





Experience of Care

- Safe
- Effective
- Patient centered
- Efficient
- Timely
- Equitable

Per Capita Cost

The IHI TripleAim

Better care for individuals, better health for populations, lower per capita costs

Our Role?

"Emergency medical services (EMS) of the future will be ***community-based*** *health management that is* ***fully integrated*** *with the overall health care system. It will have the ability to identify and modify illness and injury risks, provide acute illness and injury care and* ***follow-up****, and contribute to the* ***treatment of chronic conditions*** *and* ***community health monitoring****. This new entity will be developed from* ***redistribution of existing health care resources*** *and will be integrated with other health care providers and public health and public safety agencies. It will* ***improve community health*** *and result in more appropriate use of acute health care resources. EMS will remain the public's emergency medical safety net."*

EMS Conundrum…

- Misaligned Incentives
  - Only paid to transport
  - “EMS” is a ***transportation*** benefit
  - NOT a *medical benefit*

Mobile Integrated Healthcare

- EMS Loyalty Program
- System Abusers
- 9-1-1 Nurse Triage
- CHF/High Risk Dx Readmissions
- Observational Admission Avoidance
- Hospice Revocation Avoidance
- Home Health Partnership

Patient Navigation vs. Primary Care

Mobile Integrated Healthcare Programs

- “EMS Loyalty Program” or “HUG” Patients
  - Proactive home visits
  - Educated on health care and alternate resources
  - Enrolled in available programs = PCMH
  - 10-digit access number 24/7
  - Flagged in computer-aided dispatch system
    - Co-response on 9-1-1 calls
    - Ambulance and MHP
- Non-Compliant enrollees moved to “system abuser” status
  - No home visits
  - Patient destination determined by Medical Director

EMS Loyalty Program

- **296 Patients enrolled**
  - **2013 – 2015**
- **160 *graduated*** patients with 12 month data pre and post enrollment as of June 30, 2015…
  - ***During enrollment (30 – 90 days)***
    - 39.6% reduction in 9-1-1 to ED use
  - ***Post Graduation***
    - 56.2% reduction in 9-1-1 to ED use
    - 85.2% in reduction for "System Abusers"

Expenditure Savings Analysis (1) High Utilizer Program - THR and JPS Combined

Based on Medicare Rates

Analysis Dates: **October 1, 2011 - June 30, 2015**

Number of Patients Enrolled (2): **142**

Category	Base	Avoided	Savings
	Utilization Changes		
ED Payments (4)	$969	-2240	($2,170,560)
Admission Payments (5)	$10,500	-574	($6,027,000)
Hospital Expenditure Savings			**($8,197,560)**
Ambulance Payments	$419	-2841	($1,190,379)

Total Expenditure Savings	**($7,007,181)**
Per Patient Enrolled	**HUG**
Payment Avoidance	**($49,346)**

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. *Average Medicare payment from Medicare Utilization Tables*
4. *http://www.cdc.gov/nchs/data/hus/hus12.pdf*
5. *http://www.hcup-us.ahrq.gov/reports/projections/2013-01.pdf*

The ***Real*** Benefits:

Antoine Hall, MIH/CHP Patient
Enrolled 11/20 – 12/29/13

"Before I started this program I was sick every day; I was going to the emergency room nearly every day."

"I have learned more in the last three months from John and you than I have ever learned from the doctors, the hospitals, or the emergency rooms."

"Since this program, I have not had any pain medicines and have not been to the emergency room. I am keeping up with my doctor's appointment and my MHMR appointments."

Used by special permission from Antoine Hall

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)**

IMPARTING KNOWLEDGE & RESTORING HOPE

How MedStar's mobile integrated healthcare program helped frequent flyer Antoine Hall live again

By Matt Zavadsky, MS-HSA, EMT

Mobile integrated healthcare (MIH)—sometimes referred to as community paramedicine—programs have demonstrated improvements in patient outcomes and reduced costs of care with their ability to educate patients and connect them to resources that help them better manage their healthcare. But one voice that you may not have heard from is that of the patient.

Antoine Hall is a patient who graduated from MedStar's MIH program in 49 days. Antoine lives in the Fort Worth, Texas, MedStar service area and was referred to the program by a caring case manager at one of the local hospitals. He suffers from gastroparesis as a result of his diabetes. For the 90 days prior to enrollment into MedStar's MIH program, Antoine had eight ED visits from eight 9-1-1 ambulance responses. Of the ED visits, two resulted in an inpatient admission. During Antoine's 31-day MIH enrollment, his ambulance utilization reduced to three, and his visits to the ED reduced to four. Since graduating from the MIH program, and as of March 31, Antoine hasn't called 9-1-1, hasn't visited the ED and hasn't been admitted to any hospital.

In addition to the dramatic improvement in his overall health, the change in Antoine's health status has saved the healthcare system nearly $123,000 in charges, returned over 72 bed hours to local EDs and freed up an additional 11 unit hours to the Fort Worth EMS system. (See Table 1.) Imagine the impact these programs can have to 10 similar types of patients—what about 100, or 1,000?

Antoine's story helps demonstrate the true benefit of MIH. He wanted to share his experience, so we sat down and I let him tell his story.

Above: Mobile integrated healthcare programs educate and connect patients to resources to help them better manage their healthcare. Photos courtesy MedStar Mobile Healthcare

MEDSTAR: TELL US ABOUT YOUR LIFE BEFORE THIS PROGRAM.

Antoine: Before I became sick, my life was a very active and spiritual one. I worked out daily, and worked a full-time job. I attended church and bible studies on a regular basis, played the guitar, played with my children every day, laughed and lived life to the fullest. After becoming sick, life took a huge slam on the brakes. The disease left me

70 JEMS | JULY 2014

9-1-1 Nurse Triage

- Navigate low-acuity 9-1-1 calls to most appropriate resource
- Low acuity 9-1-1 calls (ALPHA & OMEGA)
  - Warm handoff to specially trained in-house RN
- Uses RN education and experience
  - With Clinical Decision Support software
- Referral eligibility determined by:
  - IAED Physician Board
  - Local Medical Control Authority

Expenditure Savings Analysis **9-1-1 Nurse Triage Program**

Based on Medicare Rates

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

Number of Calls Referred: **3,589**

% of Calls with Alternate Response **37.5%**

% of Calls with Alternate Destination **31.2%**

Category	Base	Avoided (4)	Savings
Ambulance Expenditure (1)	$419	1,346	$563,974
ED Expenditure (2)	$969	1,119	$1,084,311
ED Bed Hours (3)	6	1,119	6,714
Total Payment Avoidance			**$1,648,285**

Per Patient Enrolled	**ECNS**
Payment Avoidance	**$1,225**

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*

Readmission Avoidance

- At-Risk for readmission
  - Referred by cardiac case managers
  - Routine home visits
    - ***In-home education!***
    - Overall assessment, vital signs, weights, 'environment' check, baseline 12L ECG, diet compliance, med compliance
    - ***Feedback to primary care physician (PCP)***
  - Non-emergency access number for episodic care
  - Decompensating?
    - Refer to PCP early
    - In-home diuresis

MEDSTAR MOBILE HEALTHCARE

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 MOBILE HEALTHCARE

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Patient Self-Assessment of Health Status (1)

As of: 9/30/2015

	High Utilizer Group			Readmission Avoidance		
	Enrollment	**Graduation**	**Change**	**Enrollment**	**Graduation**	**Change**
Sample Size	**147**	**72**		**73**	**59**	
Mobility (2)	2.32	2.46	6.0%	2.31	2.47	7.0%
Self-Care (2)	2.62	2.75	5.0%	2.54	2.77	8.8%
Perform Usual Activities (2)	2.28	2.62	14.8%	**2.23**	**2.58**	**15.6%**
Pain and Discomfort (2)	**1.99**	**2.46**	**23.5%**	2.40	2.66	10.6%
Axiety/Depression (2)	**2.07**	**2.47**	**19.4%**	**2.32**	**2.60**	**11.9%**
Overall Health Status (3)	**4.93**	**6.71**	**36.0%**	**4.72**	**6.78**	**43.7%**

Notes:

1. Average scores of pre and post enrollment data from EuroQol EQ-5D-3L Assessment Questionaire

2. Score 1 - 3 with 3 most favorable

3. Score 1 - 10 with 10 most favorable

Mobile Healthcare Programs

Patient Experience Summary

Through September 30, 2015

	Program		
	HUG (N=58)	CHF (N=64)	Overall Avg
Medic Listened?	4.95	4.88	4.91
Time to answer your questions?	4.95	4.88	4.91
Overall amount of time spent with you?	4.96	4.88	4.92
Explain things in a way you could understand?	4.96	4.91	4.93
Instructions regarding medication/follow-up care?	4.98	4.82	4.90
Thoroughness of the examination?	4.95	4.86	4.90
Advice to stay healthy?	4.95	4.91	4.93
Quality of the medical care/evaluation?	4.96	4.85	4.91
Level of Compassion	4.96	4.88	4.92
Overall satisfaction	4.93	4.85	4.89
Recommend the service to others?	**97.8%**	**100.0%**	**98.9%**

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!"

"yall 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."

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Hospice Revocation Avoidance

- Enroll patients "at risk" for revocation
- Visit at home
  - Counsel – instruct – 10 digit access
  - "Register" patient in CAD
    - Co-respond with a "9-1-1" call
    - Help family through process
      - ***While awaiting hospice RN***

Hospice Program Summary

Sept. 2013 through Sept. 2015

	#	%
Referrals (1)	249	
Enrolled (2)	**168**	
Deceased	116	69.0%
Active	28	16.7%
Improved	2	1.2%
Revoked (3)	**24**	**14.3%**

Activity:		
EMS Calls	57	
Transports	20	**35.1%**

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 voluntary disenrolled, or had their hospice status revoked.

Project Objective: JPS, in partnership with Med
preventable readmissions, to more appropriate se
utilize the healthcare system, provides home eval
convenience of their home.

Program Overviews

911 Nurse Triage

- Intervention of low acuity 911 calls to direct care to right setting in the right timing

CHF In-Home Management

- 30 day program to assist CHF patients post discharge with accessing appropriate care

High Utilization Group (HUG)

- 90 day program to train high ED utilizer patients how to access care in the appropriate settings

Key Facts @ JPS

- Patients with 4 or more visits to the ED or inpatient have 54% inappropriate utilization of the emergency department*
- Patients with a primary diagnosis of congestive 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

Expenditure Savings: $14,400

- HUG Group results

Home Health Issues

- Instantly penalized for readmissions
  - No more hospital referrals
  - CMS Penalties for home health coming
- High cost of night/weekend demand services
- Don't know when their patients call 911
  - Consult to < admission

Note:

AOSTF 28 yo male sitting on couch. He states that he is SOB, his abdomen is distended and his legs are swollen all of this since 2000 this evening. He also reports his pump was alarming starting at 2100 and he shut it off.

Pt. requires Milrinone continuous infusion and the pump was reading a high pressure alarm. Pt. also reports a cough this evening. *In reviewing his HX he has CHF with an EF of 20-25% and CKD*. He reports he feels like he always does when he gets fluid overloaded. *Pt. also reports a 4 lb. weight gain in the last 24 hrs. Upon exam noted pt. in mild -moderate resp. distress with SPO2 in the 80's off his O2.* ***In reviewing some old notes he does not like to wear his O2****. Pt. is A&OX4, PPTE, MAE. Pt. is mildly tachycardic, BS clear upper and crackles in bases. ST on 12-lead W/O elevation.*

Abdomen appears distended though I have never seen this pt. in the past. Pt. has 3+ edema in lower ext. PICC line port being used for Milrinone infusion was occluded. PICC was flushed and infusion resumed. *Chem 8 was obtained. NA 133, K+ 3.7, Cl 97, CA 1.19, Tco2 36, Glucose 143, BUN 38, Cre 1.3, Hct 40, Hgb 13.6A Gap 5*. ***Pt. was given Lasix 80mg SIVP and advised to double his morning potassium dose. The importance of wearing his O2 was again stressed. I discussed the plan with pt. to ensure he felt capable of staying at home and that was his preference***.

Pt. stated he had a urinal and was advised to use it and write down all of his output between now and when he sees the nurse. He was advised to call back for any issues or worsening of condition. *I also spoke with Sean at Klarus and he is good with plan. Klarus will follow up tomorrow with client. Pt. declined transport and AMA was signed.*

Utilization Outcome Summary — **As of: Sep-15**

Home Health Partnership

	#	%
Enrollments by Home Health Agency	**804**	**100.0%**
9-1-1 calls by Enrolled Patients	*537*	*66.8%*
9-1-1 Calls by Enrolled Patients with a CCP on-scene	245	45.6%
ED Transports when CCP on Scene	***93***	***38.0%***
Home Visits Requested by Agency	187	23.3%
ED Transports from home visits requested by Agency	9	4.8%

Service Delivery Innovation Profile

Trained Paramedics Provide Ongoing Support to Frequent 911 Callers, Reducing Use of Ambulance and Emergency Department Services

Snapshot

Summary

The Area Metropolitan Ambulance Authority (more commonly known as MedStar), an emergency medical service provider serving the Fort Worth, TX, area, uses community health paramedics to provide in-home and telephone-based support to patients who frequently call 911 and to other patient populations who are at risk for potentially preventable admissions or readmissions. Working as part of MedStar's Mobile Integrated Healthcare Practice, these paramedics conduct an indepth medical assessment, develop a customized care plan based on that assessment, and periodically visit or telephone the patient and family to support them in following the plan. Support generally continues until they can manage on their own. Three additional similar programs serve individuals with congestive heart failure, patients who can be managed transitionally at home versus an overnight observational admission in the hospital, and in-home hospice patients who are at risk for hospice revocation. These programs have significantly reduced the number of 911 calls, the number of potentially preventable emergency department visits and hospital admissions, the number of overnight observational admissions, and the number of hospice revocations, leading to declines in emergency medical services and emergency department charges and costs, and freeing up capacity in area emergency departments.

See the Description section for an update on programs, identification of eligible individuals, patient assessment, and special protocols for patients with congestive heart failure; the Patient Population section for a description of patients served; the References section for two new resources; the Results section for updated data on the decline in ambulance and emergency department usage, charges, and costs, as well as results related to congestive heart failure and hospice patient admissions; the Planning and Development section for information about a hospice patient pilot test; the Resources section for updated staffing and cost data; the Funding section for updated information about program funders; and the Use by Other Organizations section for updated data on program adopters (updated January 2013).

Evidence Rating (What is this?)

Moderate: The evidence consists of pre- and post-implementation comparisons of 911 calls from program participants, along with estimates of the cost savings generated and emergency department capacity freed up as a result of the reduction in calls.

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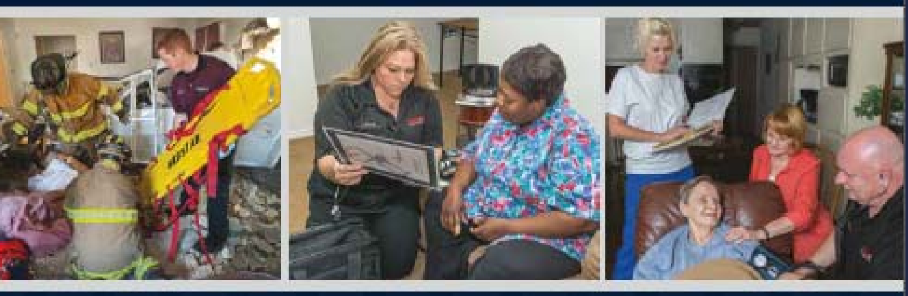
MOBILE INTEGRATED HEALTHCARE

Approach to Implementation



MOBILE INTEGRATED HEALTHCARE Approach to Implementation MedStar Mobile Healthcare

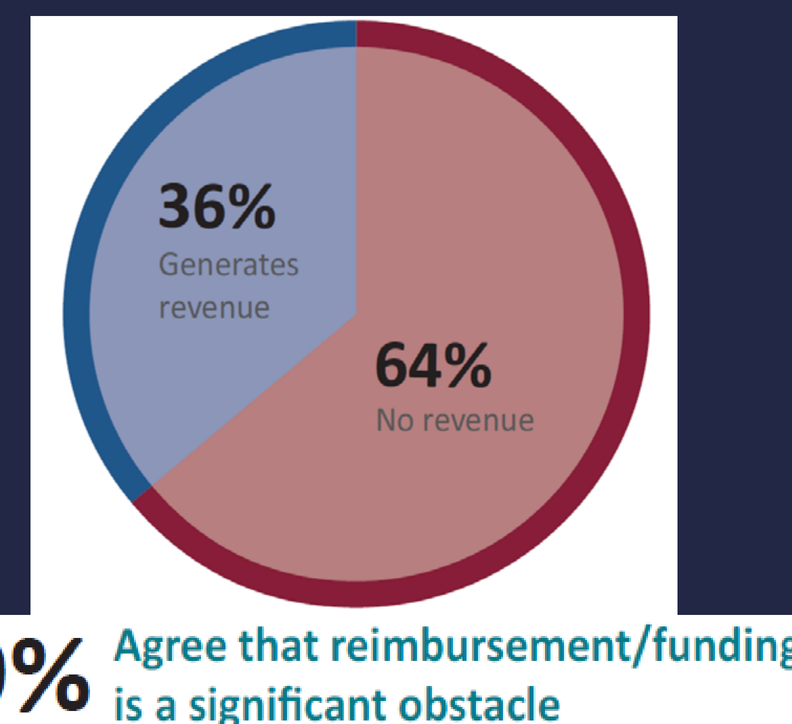
"***Mobile Integrated Healthcare is an innovative and patient-centered approach to meeting the needs of patients and their families***. *The model does require you to "flip" your thinking about almost everything – from roles for health care providers, to what an EMT or paramedic might do to care for a patient in their home, to how we will get paid for care in the future.*

The authors teach us how to flip our thinking about using home visits to assess safety and health. They encourage us to segment patients and design new ways to relate to and support these patients. ***And they urge us to use all of the assets in a community to get to better care***. *This is our shared professional challenge, and it will take new models, new relationships, and new skills."*

Maureen Bisognano
President and CEO
Institute for Healthcare Improvement

Start-Up Funding Issues

- NAEMT Survey
  - 160 MIH-CP Programs (up from 4 in 2009)



Why…?

Santa Fe, NM Example

Proposed city paramedics program would bring health care to homes

December 3, 2014
By Daniel J. Chacón
The New Mexican

A proposal unveiled Wednesday that would enable paramedics to provide preventive care to people who repeatedly call 911 could help change the landscape of health care in Santa Fe, city officials said.

Under the Community Protection Initiative, paramedics in the city's fire department would schedule home visits with frequent 911 callers and conduct health care assessments in an effort to reduce their need for emergency care.

The fire department initiative would complement a program at Christus St. Vincent Regional Medical Center aimed at reducing the number of repeat visitors to the hospital's emergency room, and it is modeled after similar efforts across the country. It was proposed by Fire Chief Erik Litzenberg, who gave ***firefighter paramedic Andres Mercado credit for taking it to another level***.

"In terms of initiatives that I've seen come from the fire department, come from the city, this one clearly is a no-brainer," Litzenberg said. "There's no question in my mind that there will be huge benefit to the community and to us as people. Clearly, it's transformative to those who we've touched already."

http://www.santafenewmexican.com/news/health_and_science/proposed-city-paramedics-program-would-bring-health-care-to-homes/article_3065dabe-9db2-55e8-8f50-aad5dbbd6238.html

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A Brief Look at Santa Fe in Context

- 0.3% of census population = 18% of 911 EMS calls,
- Financial Incentives Aligned with Better Care,
- Financial Drivers and Complicity
- Patient, Community, Organization Needs

How to Pay for Change

- Community “Skin in the Game”
  - City of Santa Fe
  - Christus St. Vincent
  - St. Vincent Hospital Support
  - Southwest Care Center
  - Santa Fe Community Foundation
- Reimbursement
  - CHW
  - Standardized Outcome Measurement Around IHI’s Triple Aim
- Taking This Home
  - Matching Capital to Expertise in YOUR Community

Grantor Call to Action…

- These programs **WORK**
- **LOCAL** proof of concept is key
- Funding for pilots is crucial
  - Generate outcomes
- **YOU** are the answer to patient cries for help

But no pressure….

Q&A

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