

Surviving MI

AN ACC QUALITY INITIATIVE

EMS Engagement
Tuesday, December 6, 2016



Quality Improvement
for Institutions

How this webinar is organized

Time	Topic
12:00pm	Welcome and Introductions
12:10pm -12:50pm	“EMS Engagement”
	St. Elizabeth Healthcare Edgewood, KY
	Sparrow Health System Lansing, MI
	Renown Medical Center Reno, NV
12:50pm	Q&A
12:57pm	Wrap-up and Next Steps



Lower 30-Day Mortality Rates with these Seven Strategies

1

Evidence -
Based Protocols
And Processes
in Place



2

Nurse AND
Physician
Champions



3

Creative
Problem
Solving Culture



4

Regular Case
Reviews with
EMS Providers



5

Cardiologist
Presence
Around the
Clock



6

Dedicated
Nursing Staff
Assigned to
Cath Lab



7

Pharmacists
Involved With
Care



Quality Improvement
for Institutions

How it all Connects

```
graph TD; A[Success Metric] --> B[Assessment]; B --> C[Tool]; C --> D[Large Downward Arrow];
```

Success Metric

Regular Case Reviews with EMS Providers

Assessment

How often does your hospital have meetings with physician and nurse champions, and ED and cardiac catheterization laboratory teams to identify lessons learned?

Tool

Strategies to foster Collaboration with EMS Providers and Hospital Staff



Quality Improvement
for Institutions



LEADERSHIP SAVES LIVES



EMS Engagement Strategies





Edgewood



Florence



Grant County



Ft. Thomas



Covington



Falmouth



Owen

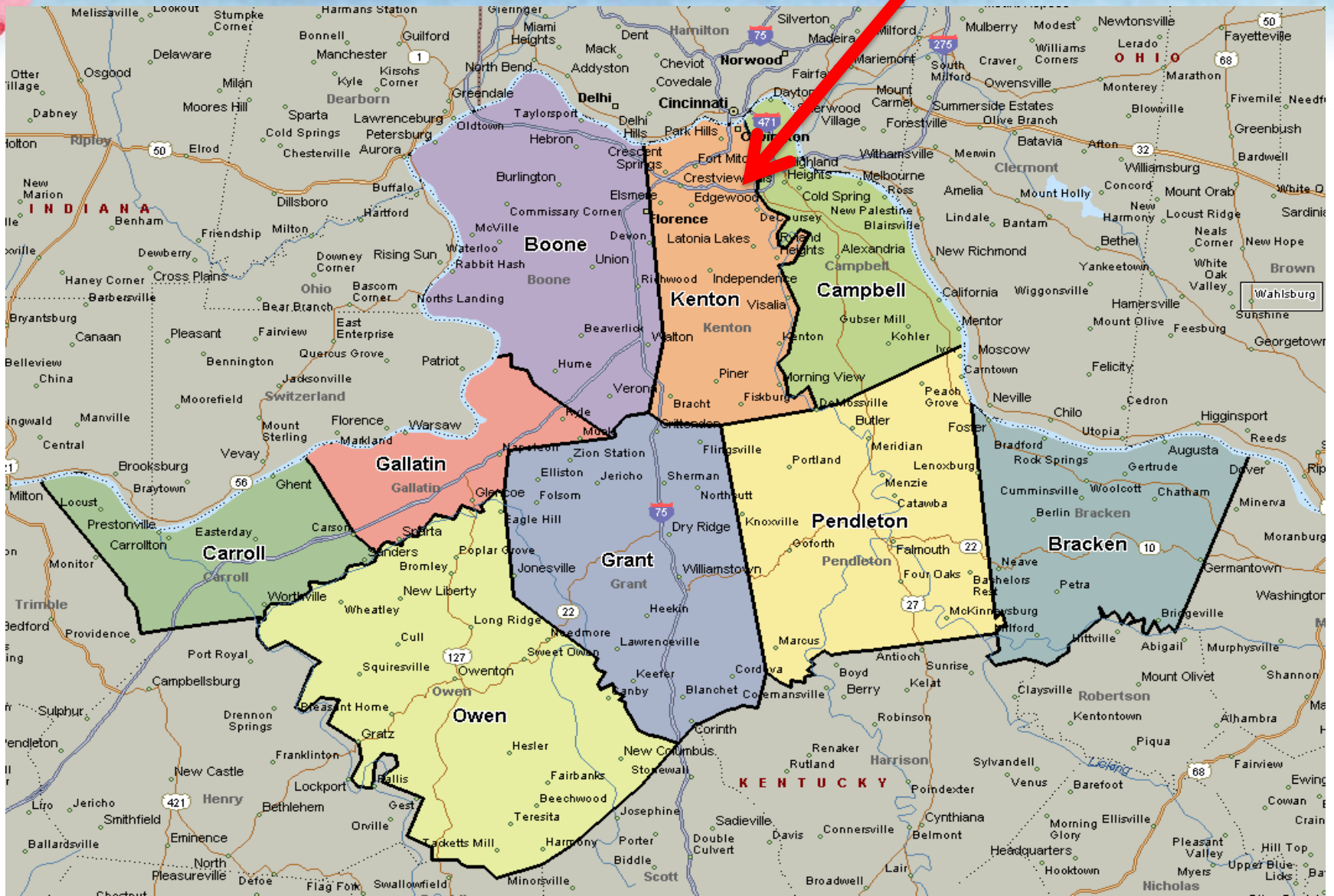
About Our Edgewood Hospital



St. Elizabeth Edgewood – 496 bed facility

Map of the study area showing the location of Otter Village and the M. line. The map includes a scale bar from 0 to 10 km and a north arrow. The M. line is indicated by a dashed line, and Otter Village is marked with a dot.

ilfor
mon
oun
rme
Fore
...
am's
hour





Mission and Vision

St. Elizabeth Healthcare Mission

As a Catholic healthcare ministry, we provide comprehensive and compassionate care that improves the health of the people we serve.

Our Vision

St. Elizabeth will lead Northern Kentucky to become one of the healthiest communities in America.



Problem and Objective

- Problem:

- EMS engagement was lacking

- ED Registered nurse Team Lead and EMS coordinator 4 hours weekly dedicated to EMS engagement
 - Edgewood facility receives EMS from approximately 50 agencies

- Objective:

- Leverage leadership and culture change to decrease mortality amongst chronic diseases

Strategies Selected



EMS awards banquet 2016

- Increase physician engagement
- Partner with EMS
- Increase community education
- Identify and implement new technology



Implementation Experience

Pre Hospital Coordination, Education and Relationship Building

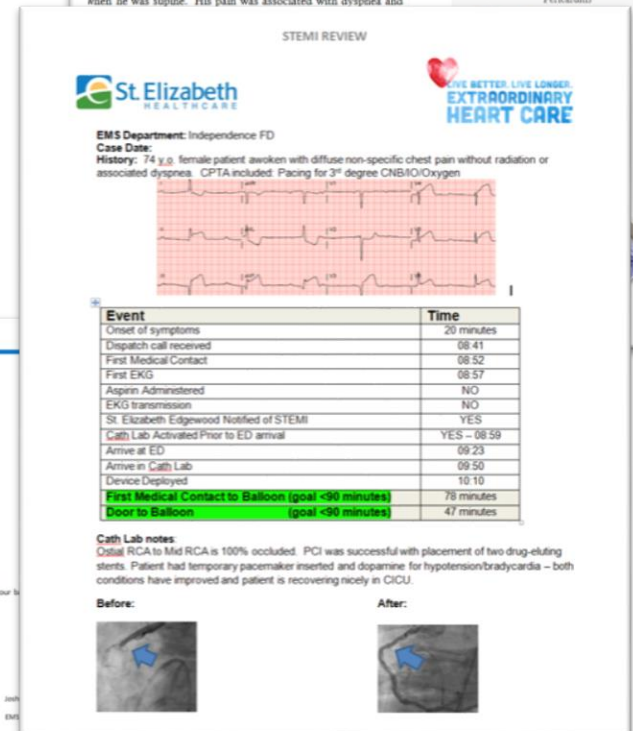
- 2 full time EMS Coordinators added to our Emergency Department
- St. Elizabeth and local EMS established mutual goals for the care of the ACS patient
- St. Elizabeth partnered with American Heart Association working towards regionalized STEMI care with the Mission Lifeline Accelerator Program



Implementation Experience

Pre Hospital Relationship Building

- EMS STEMI Report for feedback within 24 hours
- EMS quarterly newsletter
- Mobile educational simulation service
- EMS Crew of the Quarter recognition program
- Monthly EMS/Nursing Lecture Series
- St. Elizabeth EMS course



Implementation Experience

St. Elizabeth EMS Awards Banquet



Implementation Experience

St. Elizabeth Healthcare EMS 2016 FALL CONFERENCE

October 17-18, 2016

CONFERENCE SCHEDULE	MONDAY, OCTOBER 17, 2016					
	Room	Podiatric Track	EMS TRACK	CRITICAL CARE TRACK	EDUCATOR TRACK	
7:30 - 8:30 a.m.	Registration/Breakfast	Podiatric Area				
8:30 - 8:45 a.m.	Opening Ceremony	Grand Ballroom				
8:45 - 9:15 a.m.	8:30 a.m.	Presentation of the Colors	Covington PD Honor Guard			
9:15 - 9:30 a.m.	8:45 a.m.	Opening Prayer	Clayton James			
9:30 - 9:45 a.m.	9:15 a.m.	Keynote Speaker	"Can't Take it Anymore?"	Mike McVerry		
9:45 - 11:15 a.m.	9:30 - 9:45 a.m.	Break				
11:15 - 11:30 a.m.	9:45 - 11:15 a.m.	"High Tech Kids: Caring for the Complex Child"	"Human Trafficking: Situations in EMS"	"When Paramedics to Pediatric: President (EMT) Entrepreneur, Innovations and Innovations"	"Critical Care: Monitoring Data and Data"	"Leading Change in the Classroom with the Little in Mind (80 minutes)"
11:30 a.m. - 1:30 p.m.	11:15 - 11:30 a.m.	Stuart McVerry	Daniel Babbie	Lisa DelBor	Mike McVerry	Dr. Chris Nollis
1:30 - 2:15 p.m.	1:30 - 2:15 p.m.	Break				
2:15 - 3:45 p.m.	1:30 - 2:15 p.m.	"Emergency Care of Choking Kids"	"Pediatric Spinal Cord Injury: A Search of Breath Sounds"	"Emergent Burn Care"	"Signs"	"Monitoring: Hearing the Dead in our Presence (80 minutes)"
3:45 - 4:00 p.m.	2:15 - 3:45 p.m.	Scott DelBor	Stuart McVerry	Daniel Babbie	Joshua Borkowsky	Dr. Chris Nollis
4:00 - 5:30 p.m.	3:45 - 4:00 p.m.	Lunch	Grand Garden Terrace			
	4:00 - 5:30 p.m.	"Pediatric TBI and the Management of the Critical Care Patient"	"Victor: A Patient's Health Through a Critical Care Lens"	Set up	"Trauma Triage"	"Building a Team and Making it Work: A Difference"
		Dr. Erik Stalder	Daniel Babbie		Dr. Dustin Cathoun	Dr. Chris Nollis
		Break				
		"10 Hearts in a Duffel Bag - Guided Cardiac Resuscitation"	"10 Hearts in a Duffel Bag - Guided Cardiac Resuscitation"	"Acute Coronary Syndrome"	"Don't Let Progress Slip Away - Why Staying Clinically Current as an Instructor Improves Student Care"	
		Dr. Paul Barlogie	Aaron Tyson	Lisa DelBor	Dr. Kari Tarnoff	Daniel Babbie

Inaugural St. Elizabeth EMS Conference



Heidi Ho

Oct 18, 2016 at 7:05pm • 2

Thank you, **Joshua Ishmael** and St. Elizabeth hospitals for putting on a fantastic educational experience. Your instructors were on point and interesting. I've been to several conferences in the state of Kentucky and nationally and this caliber of classes was on par with all of those. Thanks again for all of your hard work and for continuing to promote EMS education and careers!

👍 Rick Sturgeon and 19 others



Mike Maher

I heard this conference described by a national speaker as top of the line quality and one that they would attend if they were not presenting. Thanks Josh. You made us STEproud!

Tue at 7:46 PM • Like • 2 • Reply



Rob Kloeker

Amazing conference everyone, one of the best I've been to. I look forward to next year

Tue at 9:29 PM • Like • 2 • Reply

Implementation Experience

ACS Case Review



GOALS & GUIDELINES

GOALS

- Inform healthcare team members of the outcomes related to the care they provided.
- Increase communication between all team members.
- Seek opportunities to improve processes.

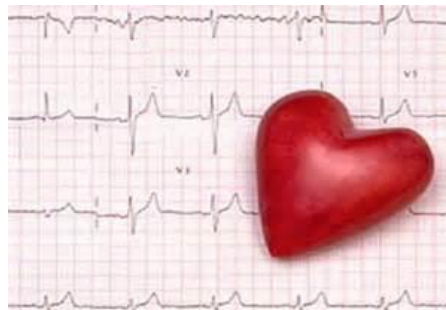
GUIDELINES

- **No blame**
- **Focus on successes and opportunities**
- **Hold to environment of collaboration and partnership**
- **All ideas are accepted**
- **Timeliness**



Outcomes

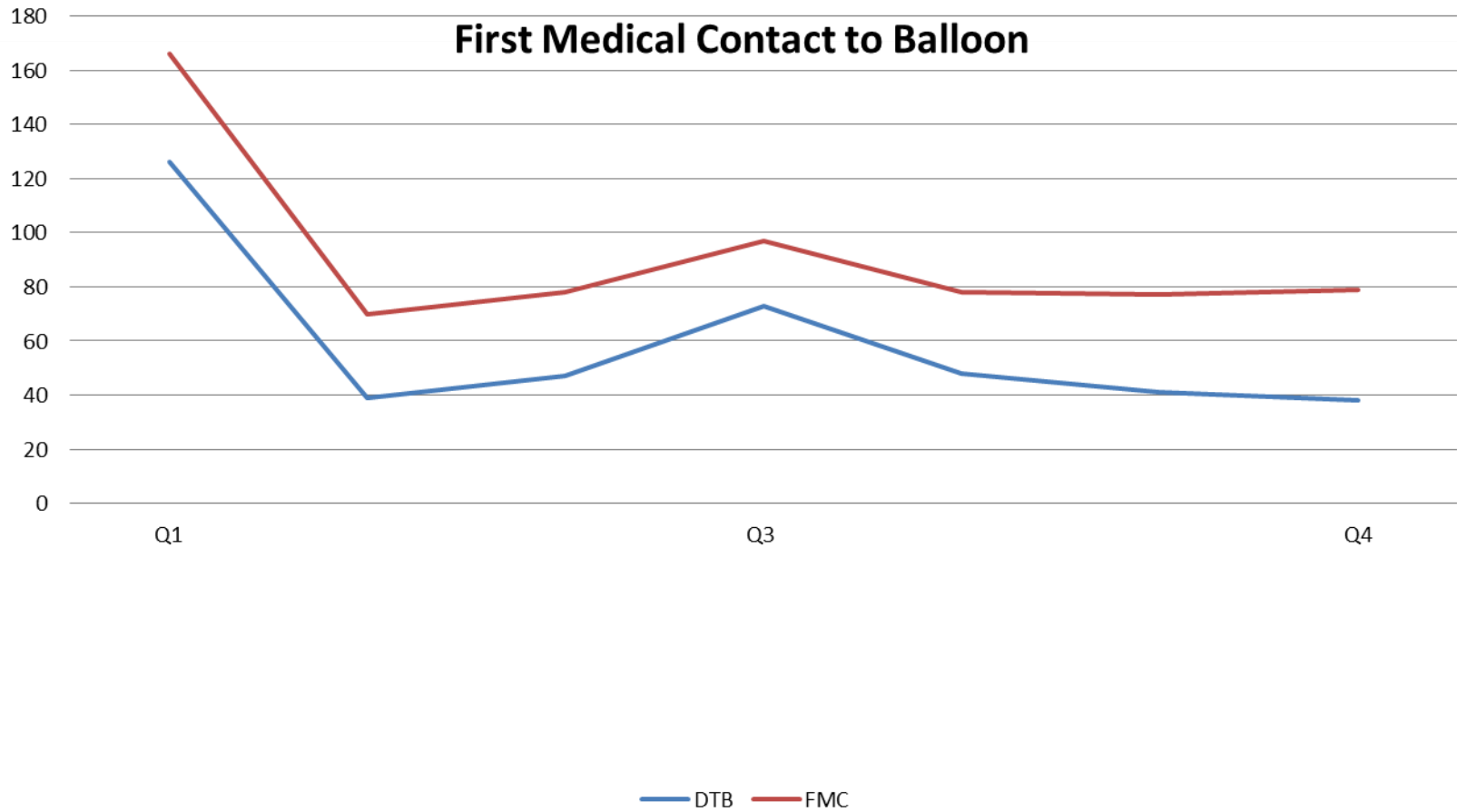
1. (1848) EDG by POV	DIDO 64 minutes	Medical manage
2. (0741) Grant by POV	DIDO 59 minutes	D2B 137minutes
3. (2033) Grant by POV	DIDO 37 minutes	D2B 96 minutes
4. (1238) Crescent Springs EMS	DIDO 5 Minutes	CABG
5. (0735) Florence by POV	DIDO 35 minutes	D2B 71 minutes
6. (0954) Hebron EMS	DIDO 14 minutes FMC 64minutes	D2B 34minutes
7. (2237) PCEMS	DIDO 65 minutes FMC 123 minutes	D2B 82minutes
8. (1552) Florence by POV		Cardiac arrest
9. (2225) Dry Ridge EMS	DIDO 47 minutes FMC 115 minutes	D2B 68 minutes
10. (2123) Dry Ridge EMS	DIDO 33 minutes FMC 107 minutes	D2B 69minutes
11. (2123) Car to EDG	DIDO 57 minutes	D2B 98minutes
12. (0426) Kenton EMS	DIDO 46minutes	D2B 84minutes
13. (0809) PCEMS	DIDO 27 minutes FMC 112 Minutes	D2B 59 minutes
14. (0752) Florence POV	DIDO 47 minutes	D2B 106minutes
15. (0437) EDG by POV	DIDO 56 minutes	D2B 77 minutes



Independence Fire and EMS



Independence Fire and EMS



MISSION: Lifeline™

➔ Improving the System of Care for STEMI Patients

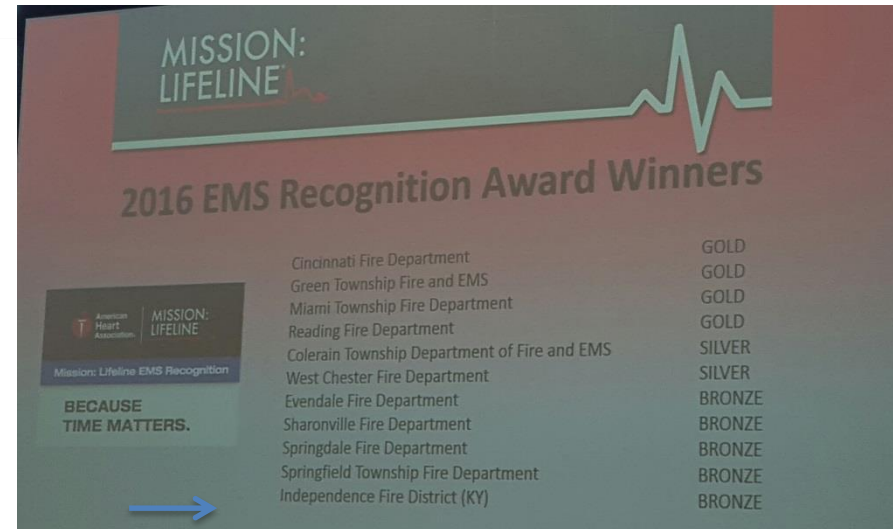


Mission Lifeline

2015

KENTUCKY

- B** Air Methods Kentucky, Georgetown, KY*
- S** Anchorage Fire-EMS, Anchorage, KY
- S** Boyd County EMS, Ashland, KY
- G** Bullitt County EMS, Shepherdsville, KY
- S** Georgetown-Scott County EMS, Georgetown, KY^T
- **S** Independence Fire District, Independence, KY
- S** Jessamine County EMS, Nicholasville, KY
- S** Louisville Metro EMS, Louisville, KY
- S** Madison County EMS, Richmond, KY
- B** Meade County EMS, Brandenburg, KY*
- S** Medical Center EMS, Bowling Green, KY
- S** Mercy Regional EMS, Paducah, KY^T
- **B** Newport Fire/EMS, Newport, KY
- G** Oldham County EMS, Lagrange, KY
- S** Shelby County EMS, Shelbyville, KY
- S** Winchester Fire-EMS, Winchester, KY



EMS can make a difference minutes after heart attack

Melissa Stewart, mstewart@communitypress.com

3:07 p.m. EDT June 5, 2015



(Photo: Melissa Stewart/The Community Recorder)

INDEPENDENCE – When chest pains come on, there’s no time to waste, according to Phil Dietz. “Time is muscle when it comes to the heart,” said Dietz, the Independence Fire District EMS coordinator. “The longer you wait to get help, the more damage to your heart. That’s why it’s so important to call us for help. “

“There’s a common misconception that all the ambulance does is pick you up and take you to the hospital. That’s not true, we do so much more,” Dietz said.

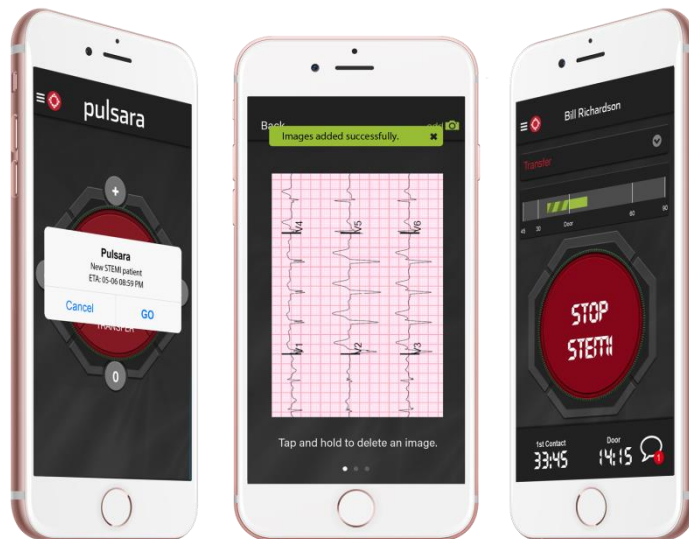
EMS

Calling for the ambulance can mean the difference between life and death.

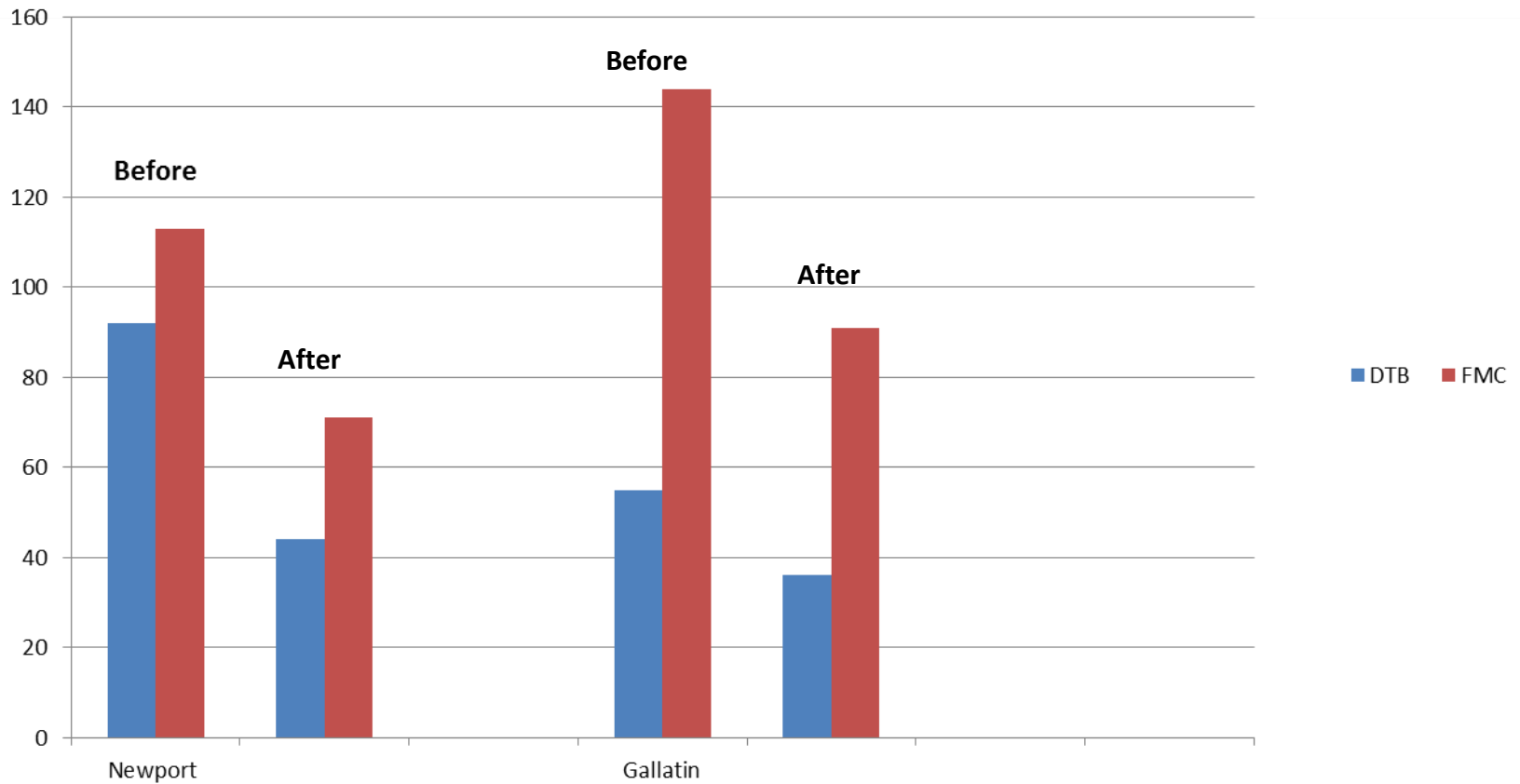
Implementation Experience

Pulsara - New technology

- Provides one standardized communication
- A Cloud-based platform
- Provides access to telecommunications services via smart device
- Early secured EKG transmission
- Early activation of Cath Lab



Pulsara Implementation



Implementation Experience

- St. Elizabeth Sponsored implementation of Pulse Point
 - Bystander CPR activation application
 - Active on over 4000 phones in this region
- Hands only CPR community training
 - 1085 trained in 2015
 - 2916 trained YTD 2016



PulsePoint



St. Elizabeth Healthcare Partners with Air Evac Lifeteam



- An Air Evac Lifeteam crew, which includes a registered nurse, paramedic and pilot, is on call 24 hours a day, seven days a week
- Ensure even more residents in the region will have access to life-saving medical care.

Implementation Experience

- Simulation Lab over 23,000 square feet



Implementation Experience

Simulation Lab in Action



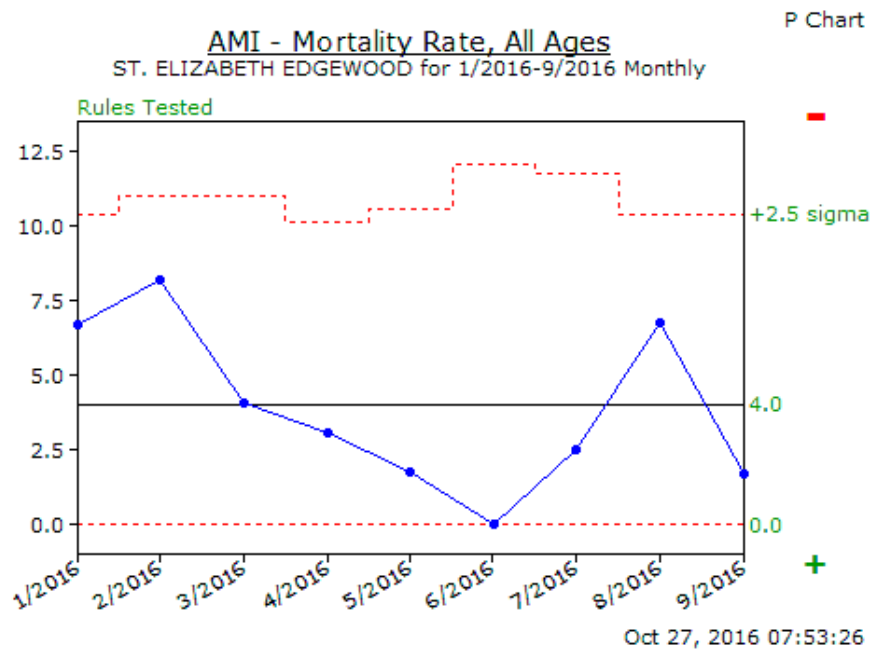
Future Implementation

Pre Hospital Initiatives in Development

- Community para-medicine program in development
- ESO Health Data Exchange EPIC interface for continuum of care
- HeartSafe Community
- Marketing campaign
 - Don't Drive. Don't Delay. Call 911 Right Away



Measuring Progress



Period	Numerator	Denominator	Rate
Jan-16	4	60	6.7
Feb-16	4	49	8.2
Mar-16	2	49	4.1
Apr-16	2	65	3.1
May-16	1	56	1.8
Jun-16	0	37	0
Jul-16	1	40	2.5
Aug-16	4	59	6.8
Sep-16	1	59	1.7



Leadership Saves Lives Recognition STAR Award





THANK YOU



Culture change in action





Collaboration with EMS in AMI Care

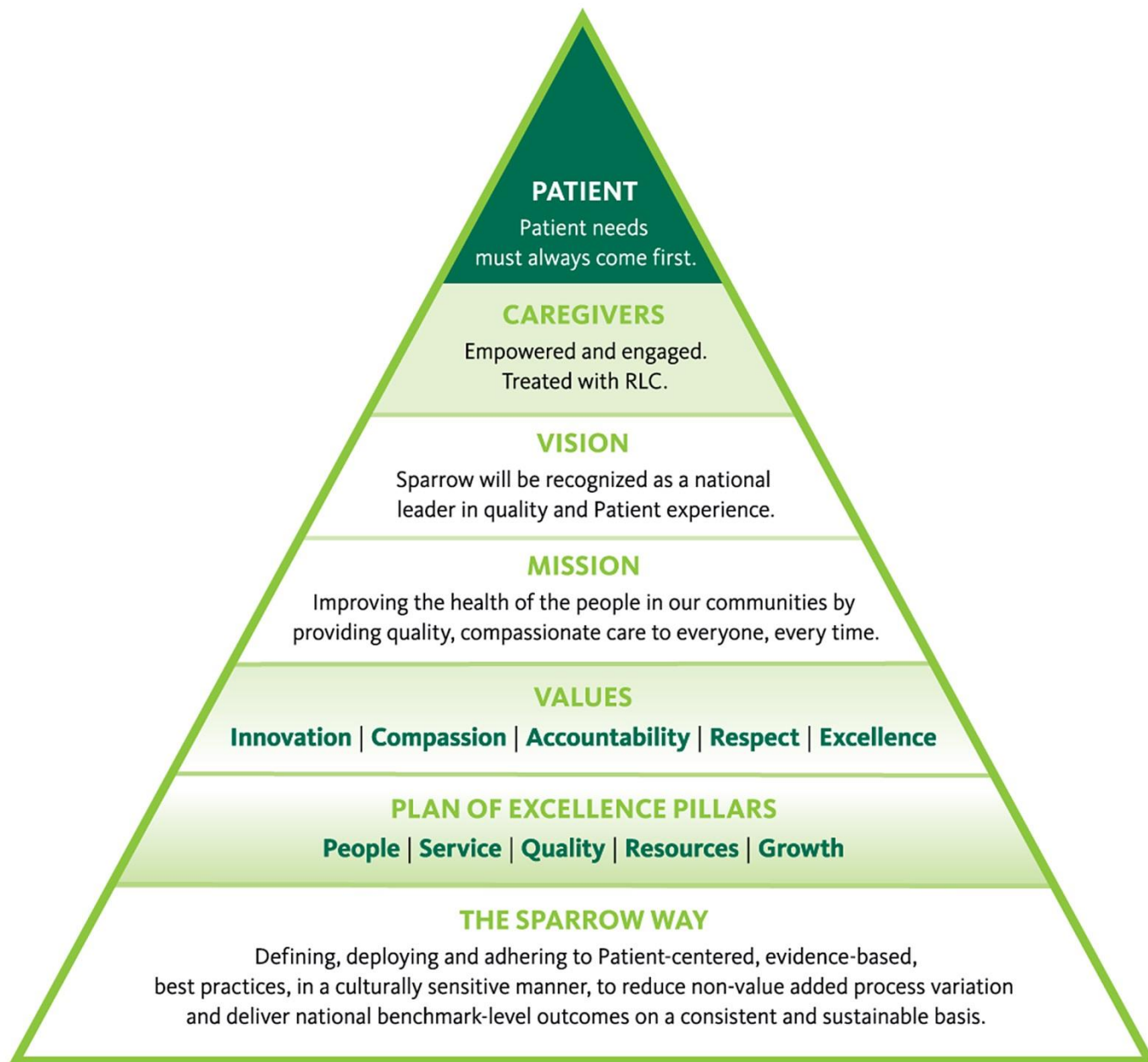


Lansing, Michigan

Presented By

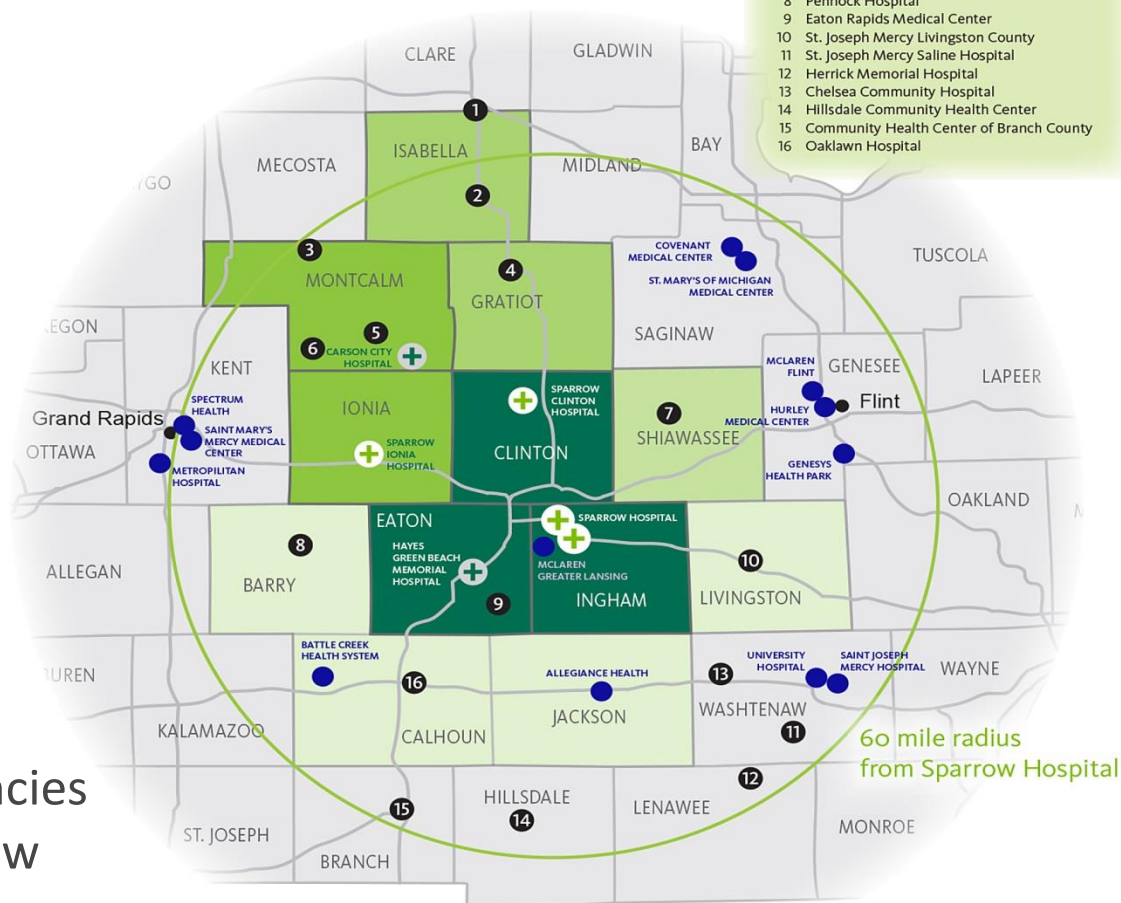
John Dery, DO, FACOEP, FACEP, FAWM

Jennifer Katafiasz, RN, MSN



Sparrow Service Area

System and Competitor Hospital Locations



Over 22 EMS agencies
service the Sparrow
service area

Where We Started

- » Culture difference between pre-hospital and in hospital cardiology care
- » Lack of interaction between EMS and specialists
- » ECG interpretation differences
- » Technology gap
- » Lack of communication between separate groups
- » No feedback loop

Needs Analysis

- » Consistent early identification of cardiac events
- » Standardized treatment
- » Reliable ECG interpretation
- » Early notification of cardiology
- » Closure of feedback loop
- » Education



Integration of Technology

- » Implemented LifeNet
 - » ECG transmission system
 - » Standardizing across all EMS agencies
- » Purchase of equipment
 - » Maintaining wireless contract
- » Standardized education

LIFENET[®] System



Empowering EMS

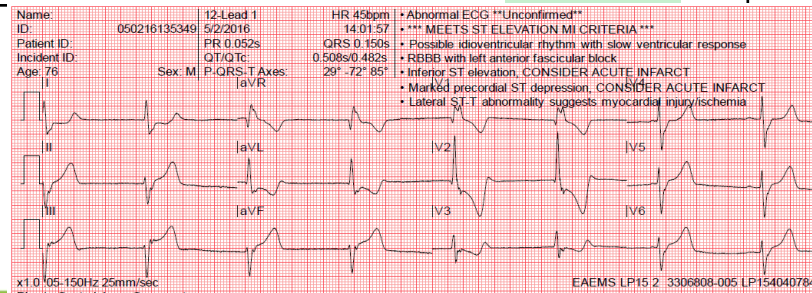
- » Allowed to call STEMI alert from the field with or without transmission
- » Medical Control Follow up
 - » Any misses or non-transmissions are discussed with EMS and feedback is given to the whole D2B team

EMS-Hospital Collaboration

- » EMS invited to Leadership Saving Lives (LSL) and Door to Balloon Meeting (D2B)
- » Sparrow representatives attended bi-monthly EMS directors meeting
 - » Door to Balloon update
 - » Open forum
 - » Successes and opportunities

Cardiac Alert Feedback Form

D2B STEMI Alert Patient Feedback					
Patient Name:					
Mode of Transportation to ED: EMS					
EMS: Eaton Area					
EMS DATA					
Time EMS Received Call:	5/2/2016	13:35			
Time of EMS at patient:		13:52			
Time of first ECG:		14:01			
Was ECG Transmitted?	Yes	14:16			
Alert called from EMS?	Yes				
Arrival Time to Hospital:		14:39			
EMS arrival to first ECG:		9 min			
First Medical Contact to balloon		81 min			
Hospital Data					
ED Attending:	Gollapali				
ED Resident:					
Interventional Cardiologist:	D'Haem				
	Date	Time			D2B Goals
Arrival to Sparrow:	5/2/2016	14:41			
ECG		EMS	Door to EKG:		5
STEMI Activation:		14:18	EKG to Alert:		5
Cath lab "table time":		14:57	Alert to Lab:		30
Lido		14:59	Door to Lab:	16	
Intervention		15:13	Lab to Lido:	2	10
			Lido to Intervention:	14	10
TOTAL D2B TIME:			32		90



Cardiac Alert Feedback Form

D2B STEMI Alert Patient Feedback

Patient Name:

Mode of Transportation to ED:

EMS

EMS:

Eaton Area

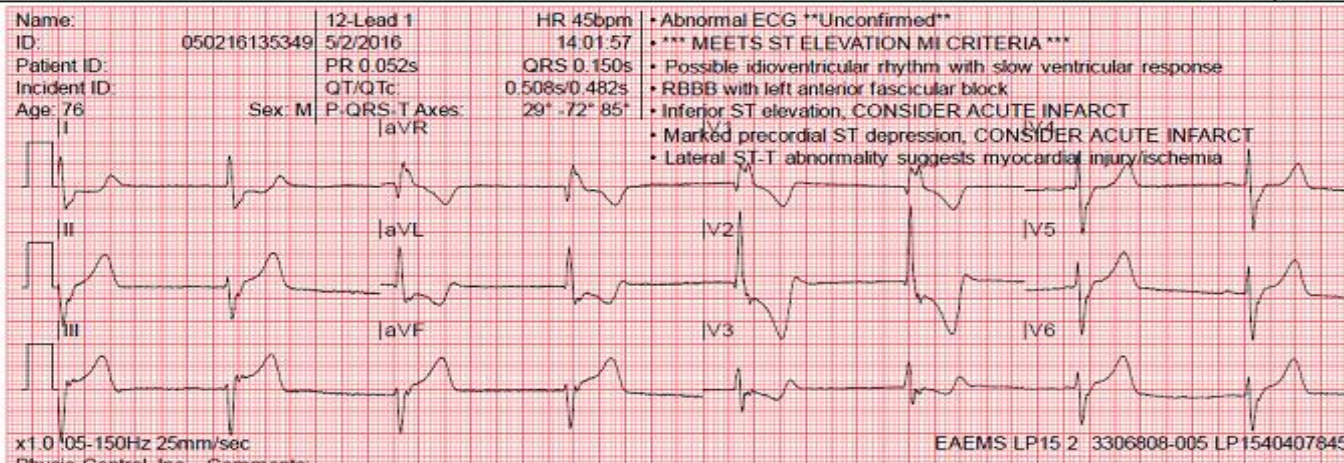
EMS DATA

Time EMS Received Call:	5/2/2016	13:35	
Time of EMS at patient:		13:52	
Time of first ECG:		14:01	
Was ECG Transmitted?	Yes	14:16	
Alert called from EMS?	Yes		
Arrival Time to Hospital:		14:39	
EMS arrival to first ECG:		9 min	
First Medical Contact to balloon		81 min	

Hospital Data

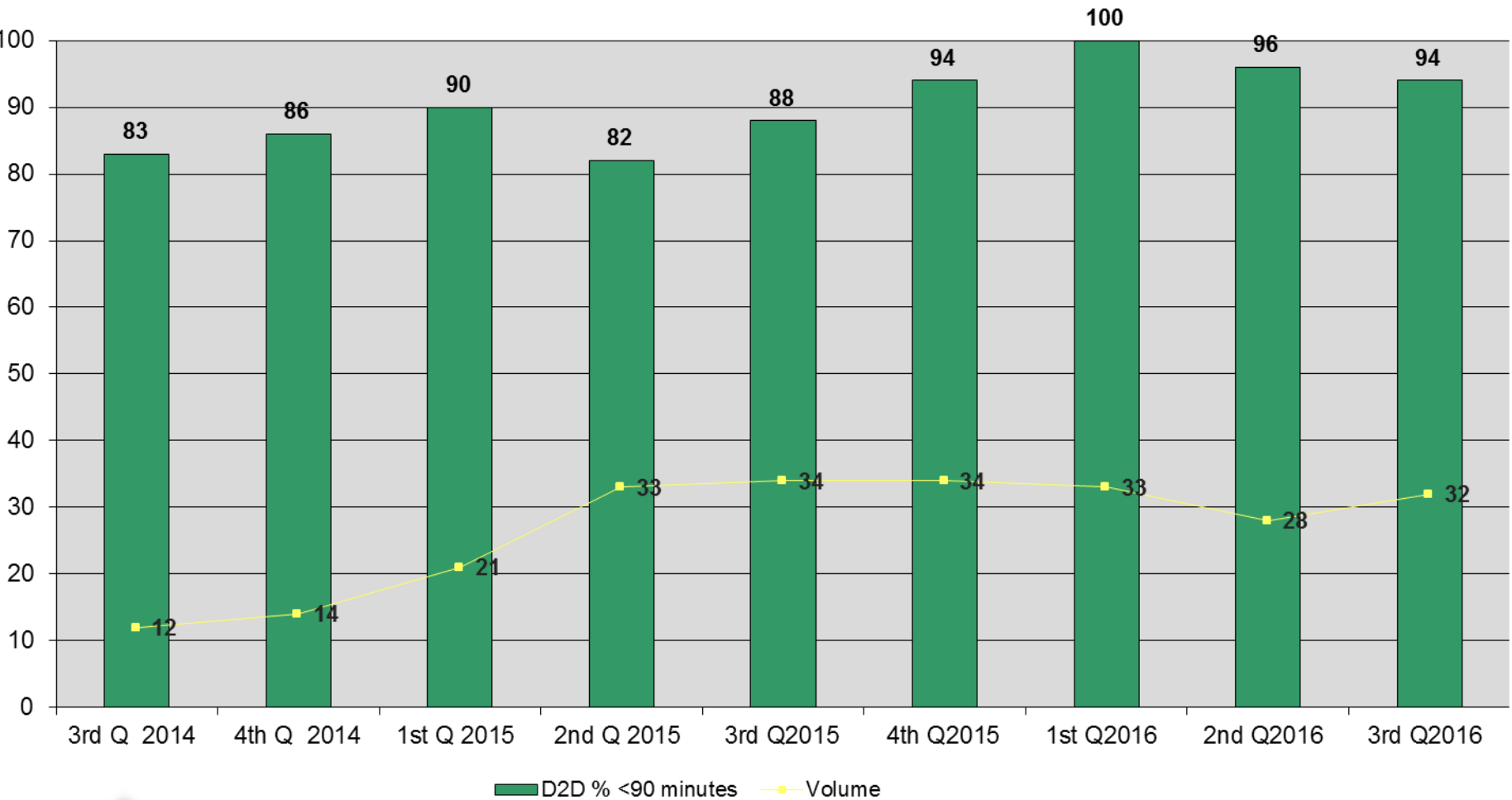
Cardiac Alert Feedback Form

Hospital Data					
ED Attending:	Gollapali				
ED Resident:					
Interventional Cardiologist:	D'Haem				
	Date	Time			D2B Goals
Arrival to Sparrow:	5/2/2016	14:41			
ECG		EMS	Door to EKG:		5
STEMI Activation:		14:18	EKG to Alert:		5
Cath lab "table time":		14:57	Alert to Lab:		30
Lido		14:59	Door to Lab:	16	
Intervention		15:13	Lab to Lido:	2	10
			Lido to Intervention:	14	10
TOTAL D2B TIME:			32		90



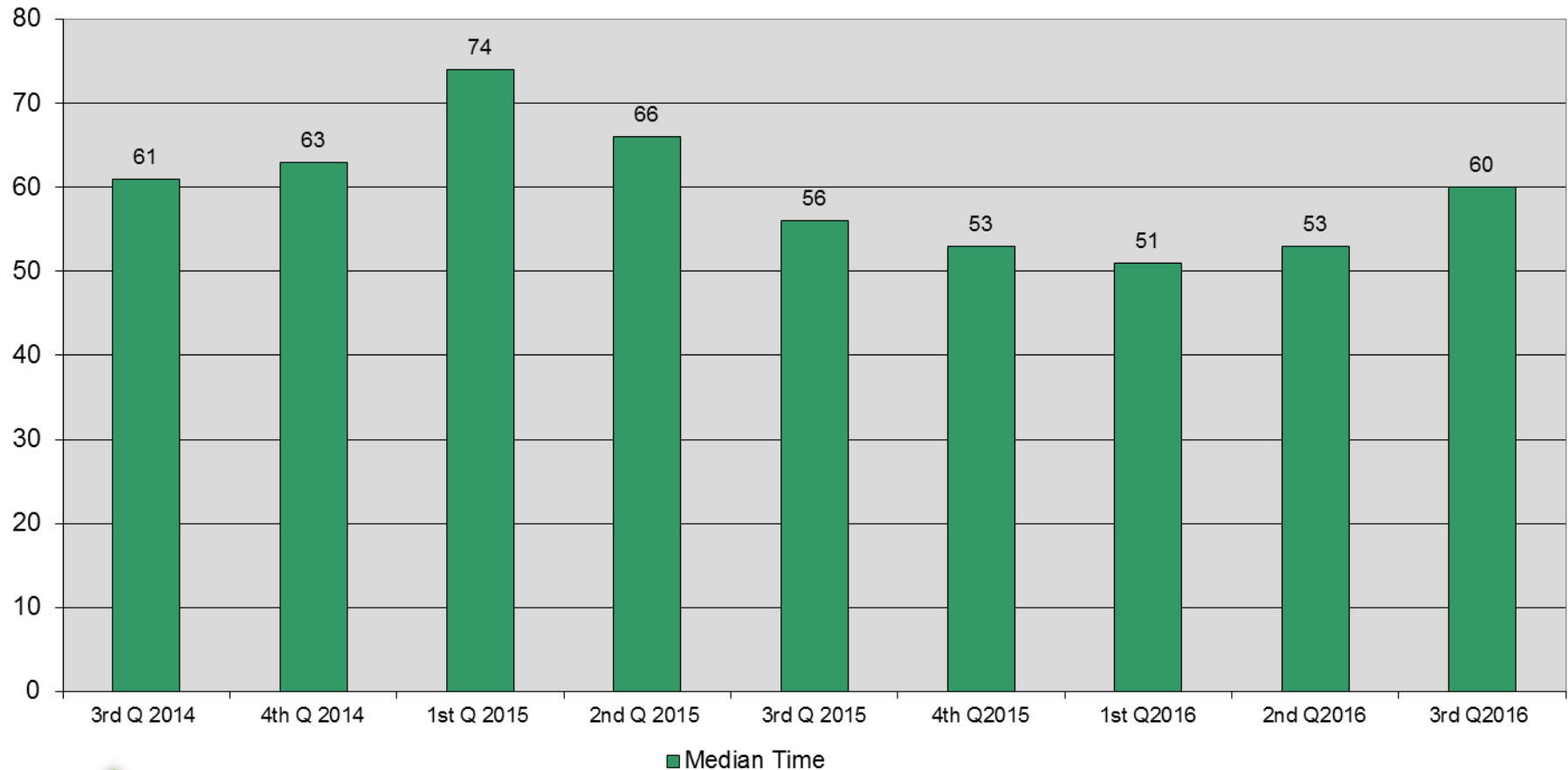
Results

Door-to-Balloon Percent < 90 Minutes
July 2014 - September 2016



Median D2B Times

Door-to-Balloon Median Times
July 2014 - September 2016



Next Steps

- » EMS Feedback
 - » Timely bidirectional communication
- » Common Mission
- » Opportunities
 - » More frequent and focused meetings
 - » Education opportunities



Hospital to Home: Partnering to Meet the Needs of Vulnerable Populations

December 6, 2016

Renown[®]
HEALTH

Renown Regional Medical Center Reno, Nevada

- 802 bed flagship of a locally owned and governed, not-for-profit health network
- Serving an 80,000 square mile catchment area
- Receiving patients from 29 rural referring hospitals
- Rural Nevadans comprise 40% of our patient population

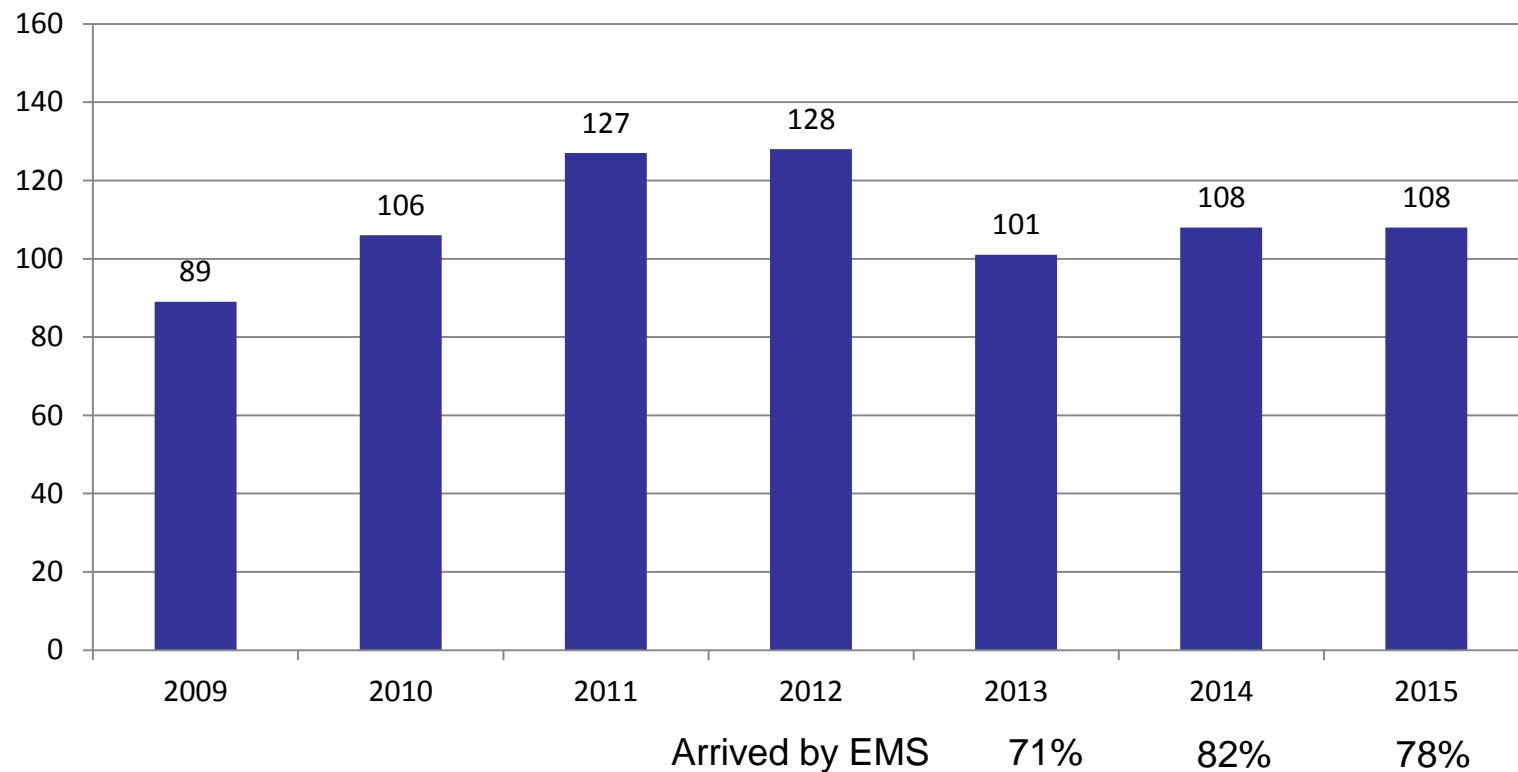


A REGION-WIDE NETWORK OF HEART CARE

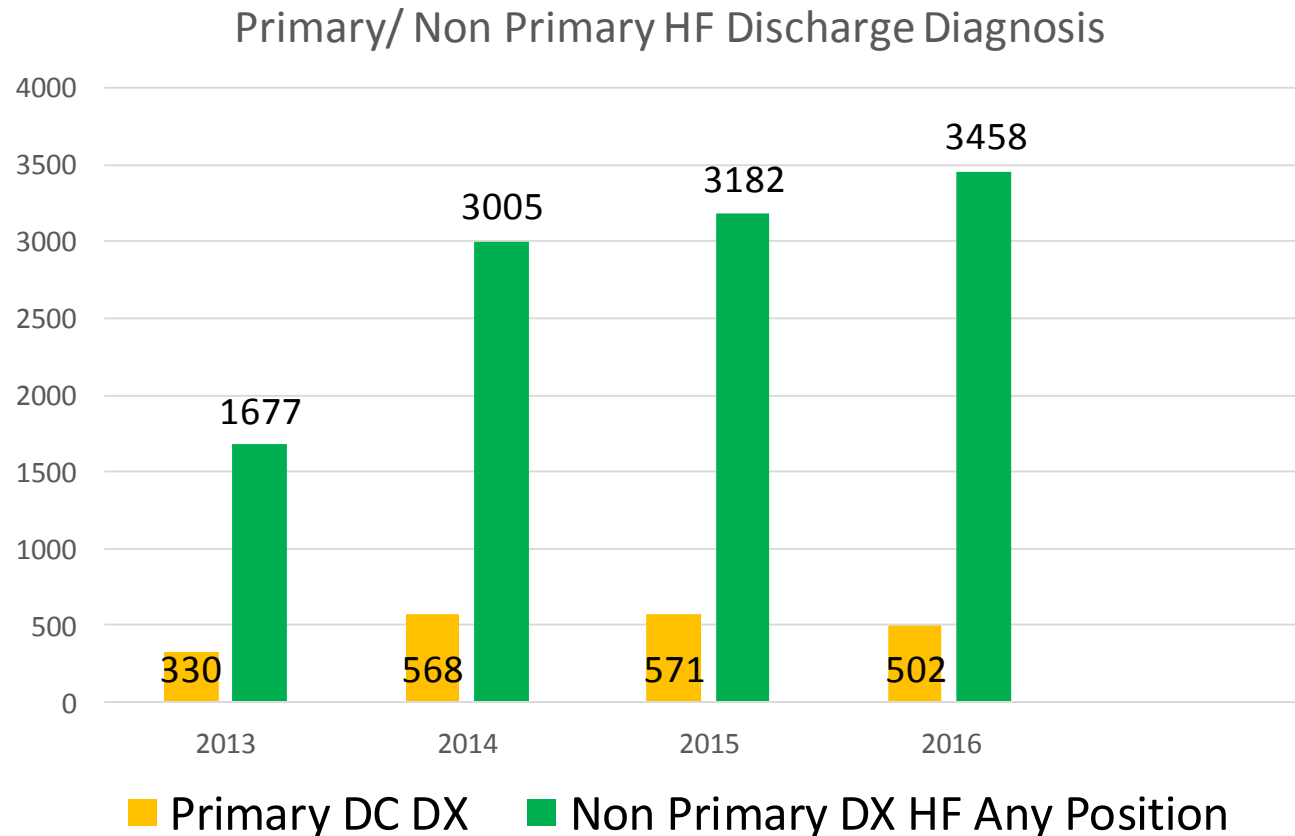
THROUGH 20 BOARD
CERTIFIED
CARDIOLOGISTS



Total Primary PCI Cases



Renown Regional Heart Failure Population



Source:

REMSA

Regional Emergency Medical Services Authority

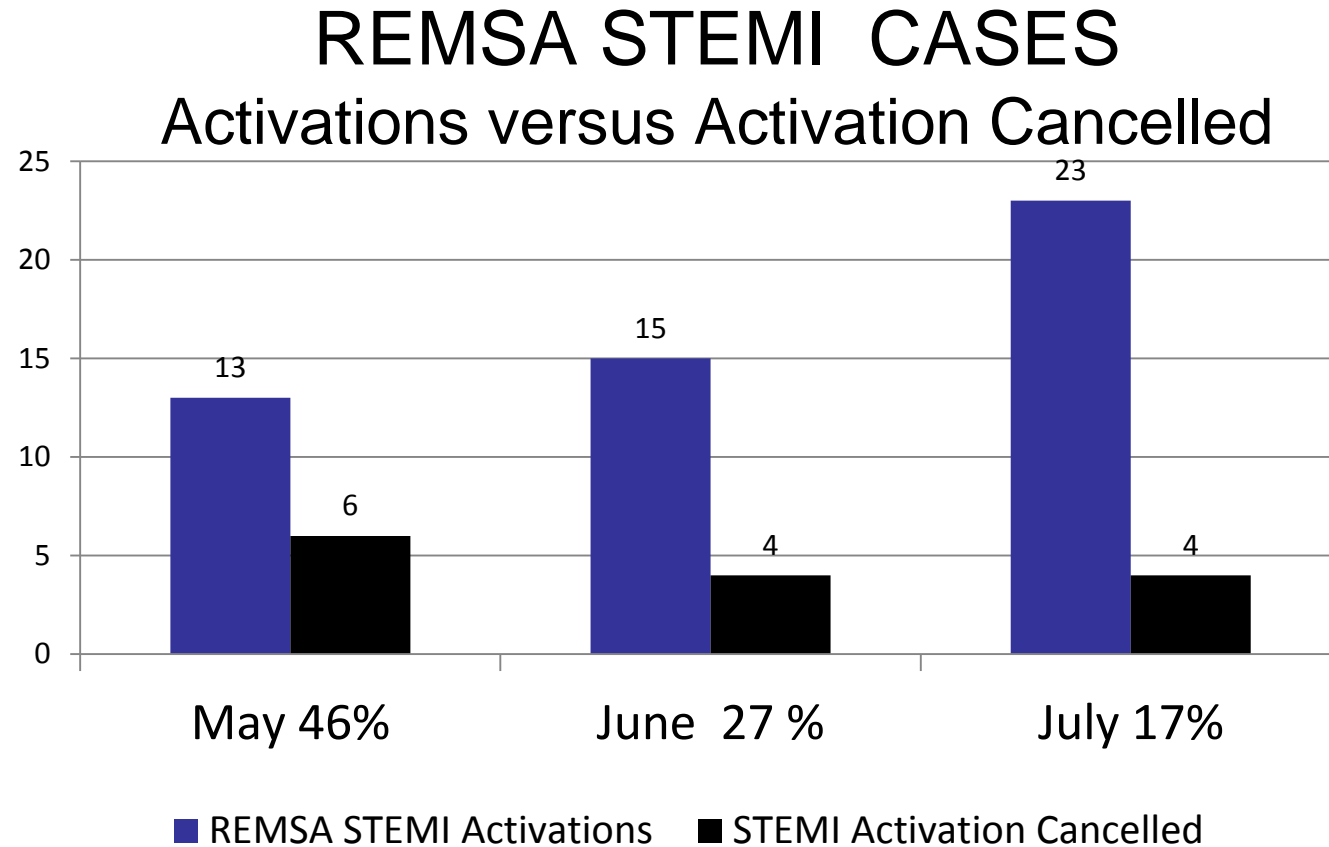
- REMSA Paramedic Ambulance Service
 - 42 ambulances & 400 employees serving 6,000 square miles
 - Nationally accredited (EMD ACE, ECNS ACE, COAEMSP, CAAMTS, CAAS), regional medical disaster coordination center, special events coverage
- Care Flight Medical Helicopter Service
 - Four aircraft serving 40,000 square miles
- Extensive Investment in Community Service Programs
 - Largest community & professional medical training center in NV
 - Specialized TEMS team supporting 3 local SWAT agencies
- Private non-profit serving Northern Nevada for 30 years
 - Nationally acclaimed for high performance, quality, innovation



History of Collaboration

- 2010 started STEMI activation from the field
- EMS to perform 12-lead and activate within 10 min of arrival
- Lab draw – hand off to lab tech/obtain replacement bag with tubes
- Lessons learned
 - ✓ Hospital shares cancelled activations with EMS educator to share with medic
 - ✓ Discontinued including monitor interpretation of acute MI in criteria
 - ✓ Discontinued LBBB as a criteria for activation
- Sustaining collaboration
 - ✓ ED board with most recent STEMI times
 - ✓ Binder in ED with follow up for each STEMI
 - ✓ EMS representative attends case review quarterly

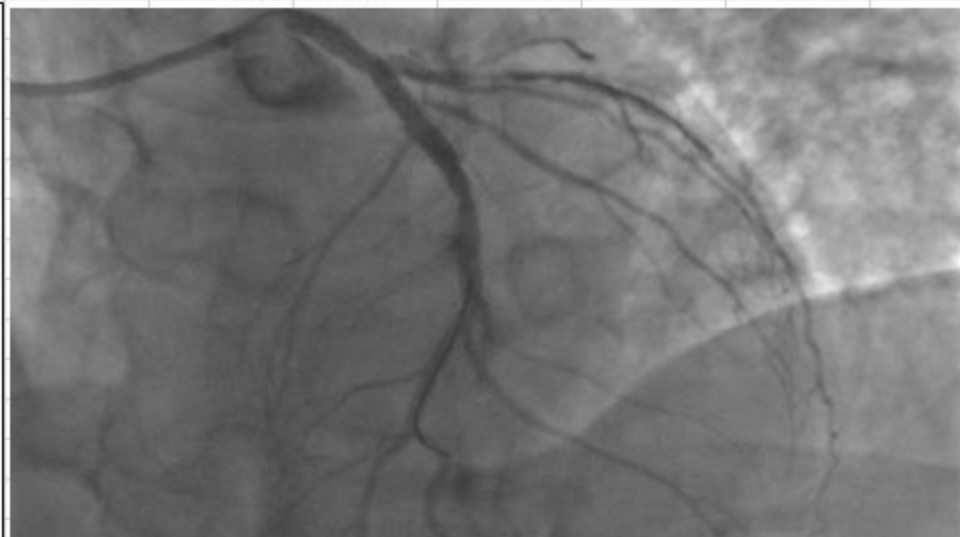
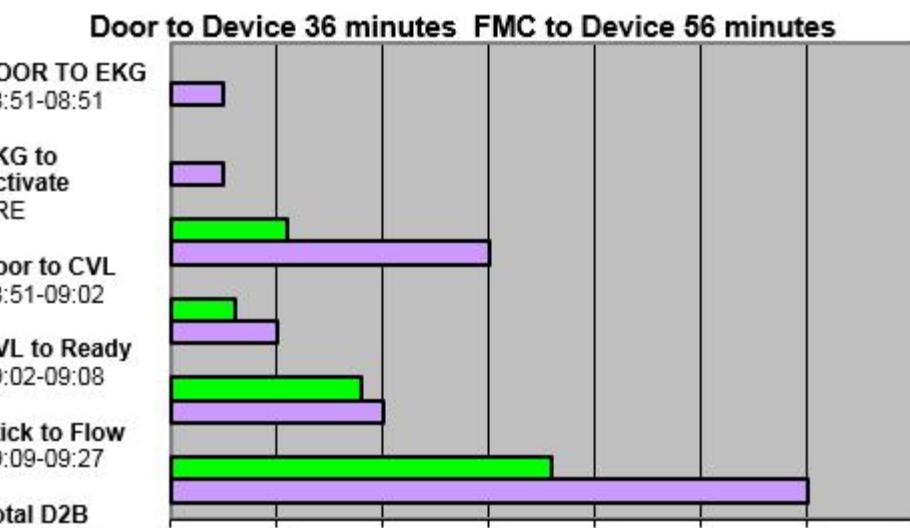
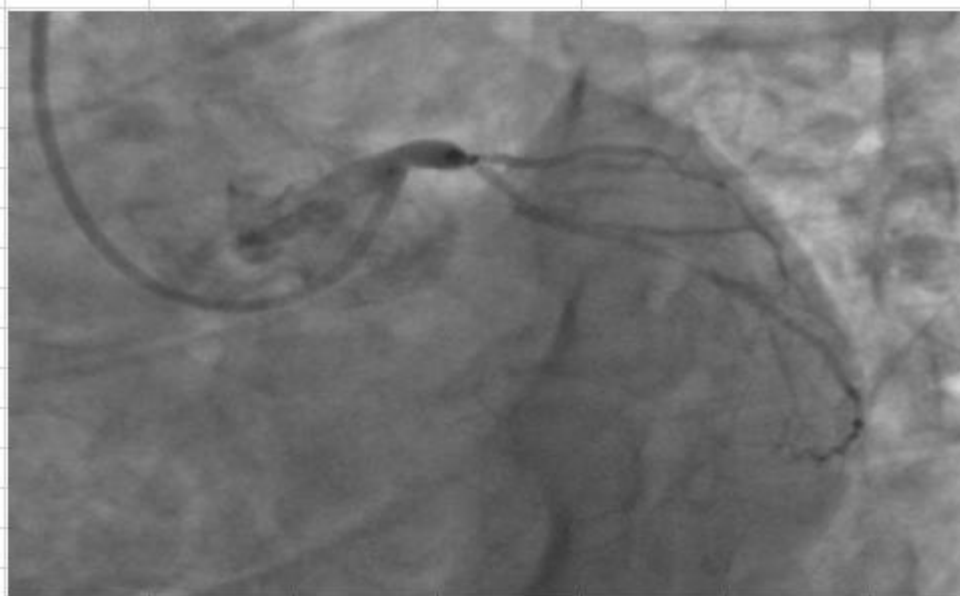
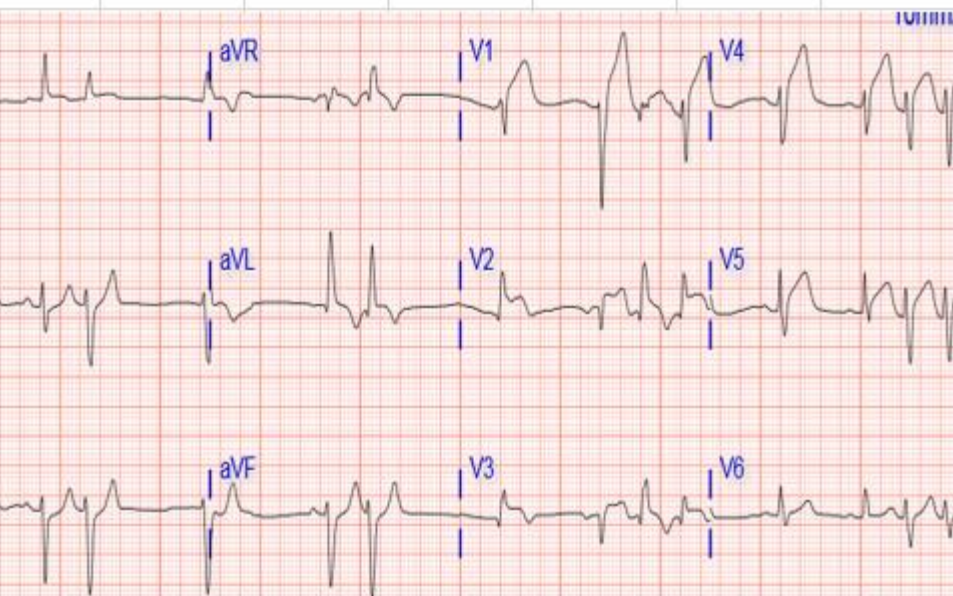
EMS Collaboration



Date

Mode of arrival; EMS crew names ; hospital team names

7 male with little medical history. At airport waiting to leave for on a flight. REMSA activated for c/o increasing chest pain. REMSA reports him to be screaming in pain when they arrive. Pale, cool, and diaphoretic. Rates pain, which is non-radiating at 10/10, appears anxious and short of breath. Intervention to LAD and later may need intervention to circumflex



COMMUNITY PARAMEDICINE

- Launched April 2013
- CMS Innovation Award Grant
- Specially-trained Community Health Paramedics provide in-home services to improve the transition from hospital to home, including:
 - Medical care plan adherence
 - Medication reconciliation
 - Point of care lab tests
 - Personal health literacy
 - Protocols: CHF, COPD, MI, Cardiac Surgery

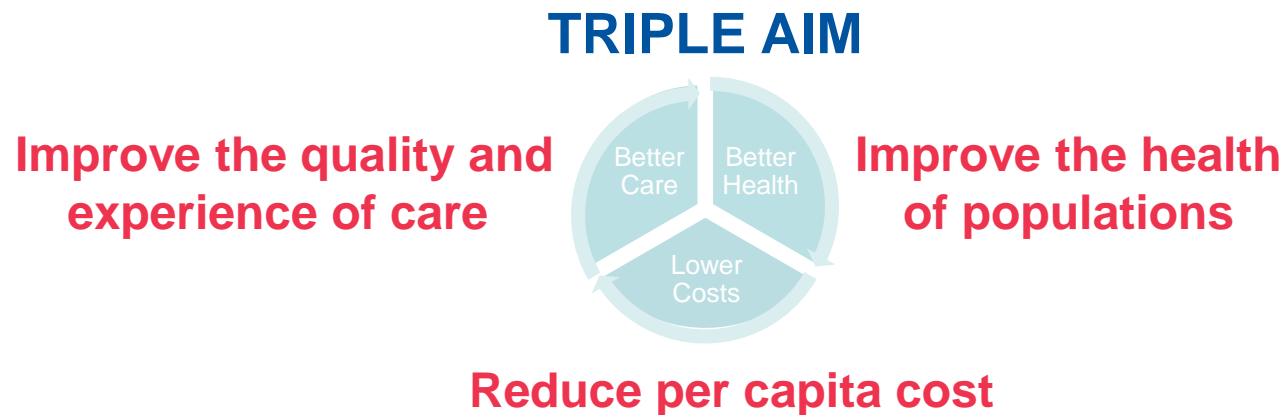


Hospital Admission/Readmission Avoidance Program

This program is in place to help patients through the transition from Hospital to Home.

The patients who get referred to this program have either and primary or secondary diagnosis of CHF, or COPD. Or are Post MI or Post Open Heart surgery.

This program is built to deliver better care, improve the patients health, and do so at a low cost.



Source: Berwick, DM, et al; *The Triple Aim: Care, Health & Cost*; May/June 2008; Health Affairs

WHAT DO THE COMMUNITY PARAMEDICS DO?

- Hospital Admission/Readmission Avoidance - The Community Paramedics work with hospitals, PCPs, Cardiologist, Pulmonologists, and Open Heart surgeons to safely avoid unneeded Admissions or re-admissions to the hospital.
- Hotspotter - Work with “Hotspotters” and redirect there use of the 911 system to more appreciate resources. (Urgent Cares, clinics, PCPs, Ect.).
- Evaluate/Refer - This program is in place to avoid initial hospital admissions by intervening with a Patient before their condition requires hospitalization.

Evaluate/Refer

- This program is in place to avoid initial hospital admissions by intervening with a Patient before their condition requires hospitalization.
- Typically a patient's doctor will contact the CP's requesting us to evaluate and treat at patient who they are unable to see and/or if the patient is unable to come to them.
- At these appointments we evaluate the patient, report findings to the referring Dr, and treat as appropriate. The referring Drs office is sent a copy of the chart and contacted to schedule the pt for a follow up visit.

Partnership with Acute Care

- Began as a grant funded program with no limitations related to payer source
- Assessment by inpatient nurse navigator, social services, bedside nurse, provider
- Referral to Community Paramedic
- Consent
- Paramedic meets with patient prior to discharge

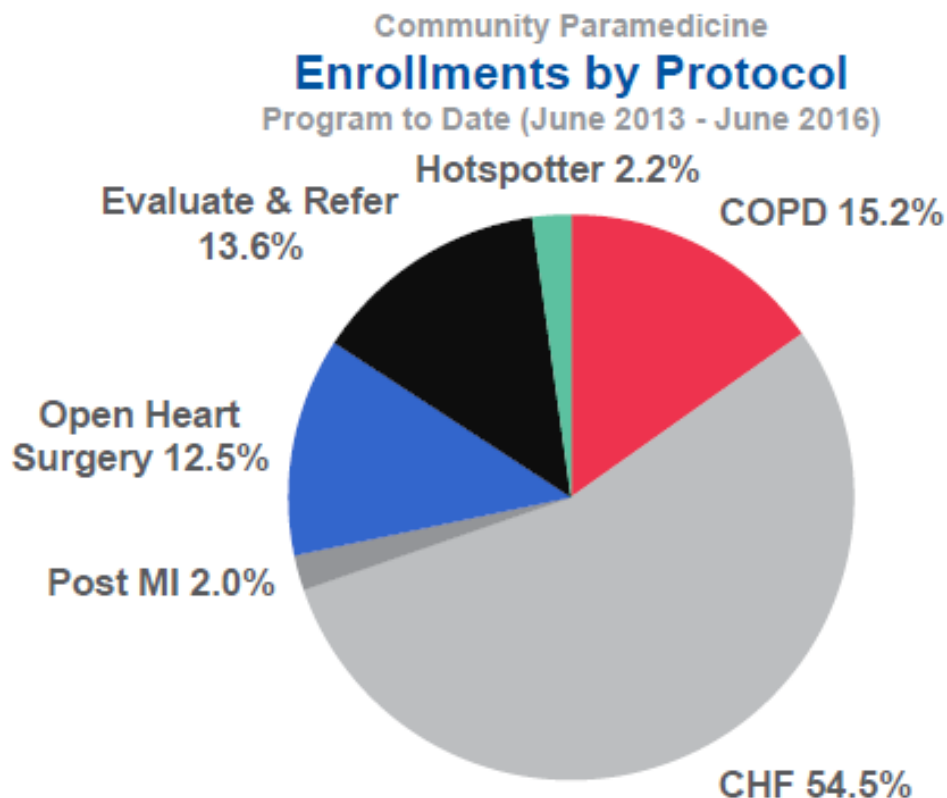


What Happens in the Home?

- Point of care lab work
(BMP, H&H, Blood glucose, Blood alcohol, clean catch UA, INR)
- Home Blood Draws
- 12 Lead ECGs
- IV Diuresis and Hydration
- Measure Peak Flow Rates
- Medications
 - ✓Lasix PO or IV
 - ✓Toradol
 - ✓Prednisone
 - ✓Potassium
- Collaboration with Cardiology Office

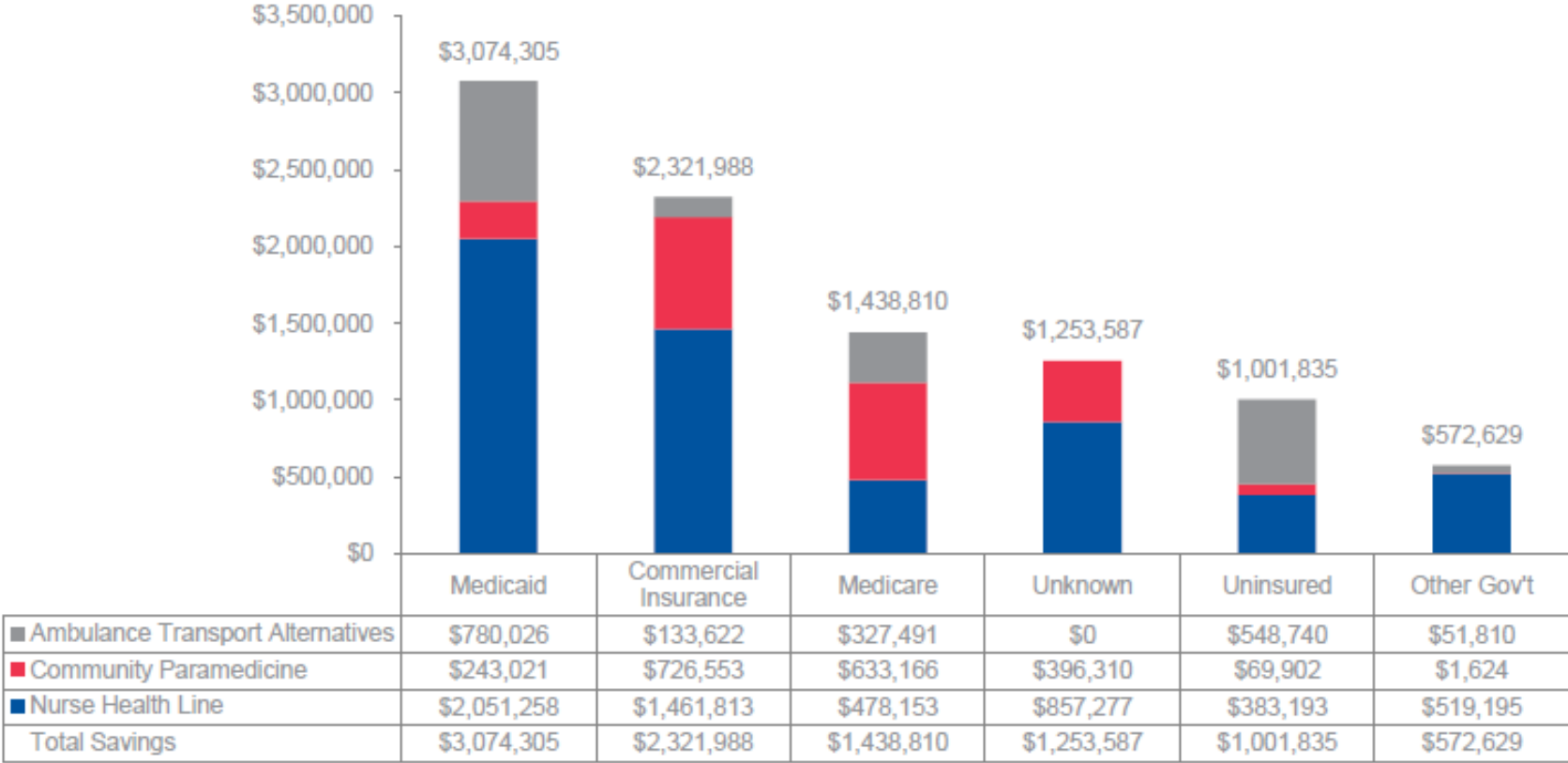


Ratio of enrollments by protocol is: 54.5% Congestive Heart Failure (CHF), 15.2% Chronic Obstructive Pulmonary Disease (COPD), 12.5% Open Heart Surgery, 2.0% Post Myocardial Infarction, 13.6% Evaluate & Refer, 2.2% Hotspotter (Figure 30: Enrollments by Protocol).



Program Savings by Payer
Patients insured by Nevada Medicaid generated the largest share of total program savings at 31.8% (Figure 12: Program Savings by Payer).

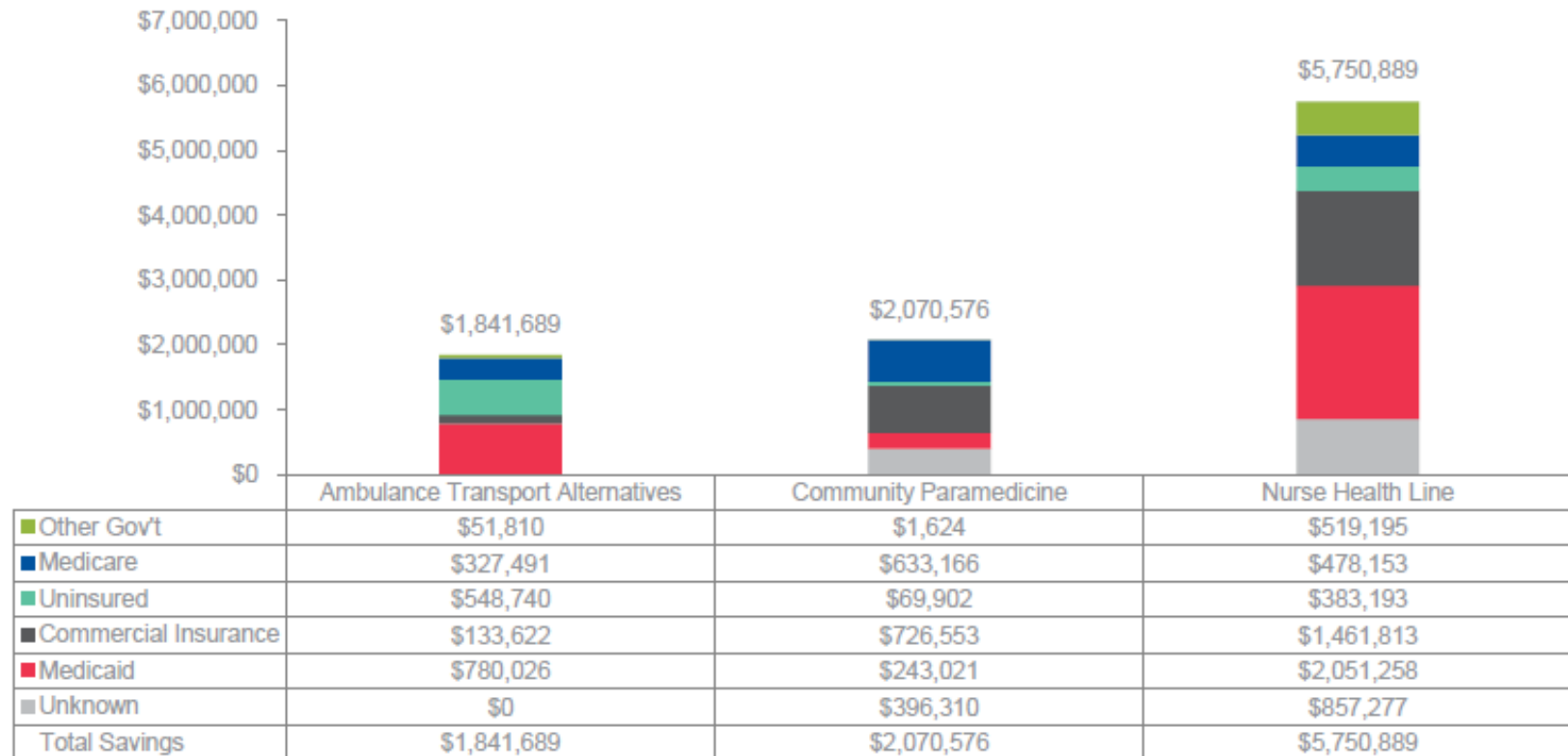
Community Health Programs
Program Savings by Payer
Program-to-Date (Jan 2013 - June 2016)



Program Savings by Intervention

The Nurse Health Line generated 60% of total program savings (Figure 10: Savings Generated by Intervention). Below is a breakdown of program savings by intervention (Figure 11: Program Savings by Intervention)

Community Health Programs Program Savings by Intervention Program-to-Date (Jan 2013 - June 2016)



Evolution of the Partnership

- Grant ended ☹️
- Successful outcomes
 - ✓ Medicaid approved by CMS for reimbursement
 - ✓ Extended grant period
- Exploring options of sustainability
- Path forward with populations “at risk” in the Health Network
- Formalizing a partnership

Thank You

Surviving MI

AN ACC QUALITY INITIATIVE

Please submit your questions for the moderated question and answer session.

SurvivingMI@acc.org
CVQuality.ACC.org/SurvivingMI



Quality Improvement
for Institutions



Quality Improvement for Institutions

The Quality Improvement for Institutions program combines the ACC's NCDR data registries with toolkits and proven hospital-based quality improvement initiatives like Hospital to Home, the D2B Alliance and Surviving MI.

Simple Solutions. Big Impact. [CVQuality.ACC.org](https://www.cvquality.acc.org).



Quality Improvement
for Institutions