Innovation in Data for Improvement: STEMI Case Feedback

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The Problem

High quality care for patients with AMI requires engagement of healthcare professionals from across the care continuum, from emergency medical transport, to emergency department triage and STEMI identification, to in-hospital transport, to the cardiac cath lab, to the step-down unit and beyond.

For patients with ST-Elevation Myocardial Infarction, the handoffs from one level of care to the next must be especially quick and effective.

Once a patient has moved to the next step, it can be difficult to systematically circle back with providers earlier in the process to share patient outcomes or opportunities for improvement.

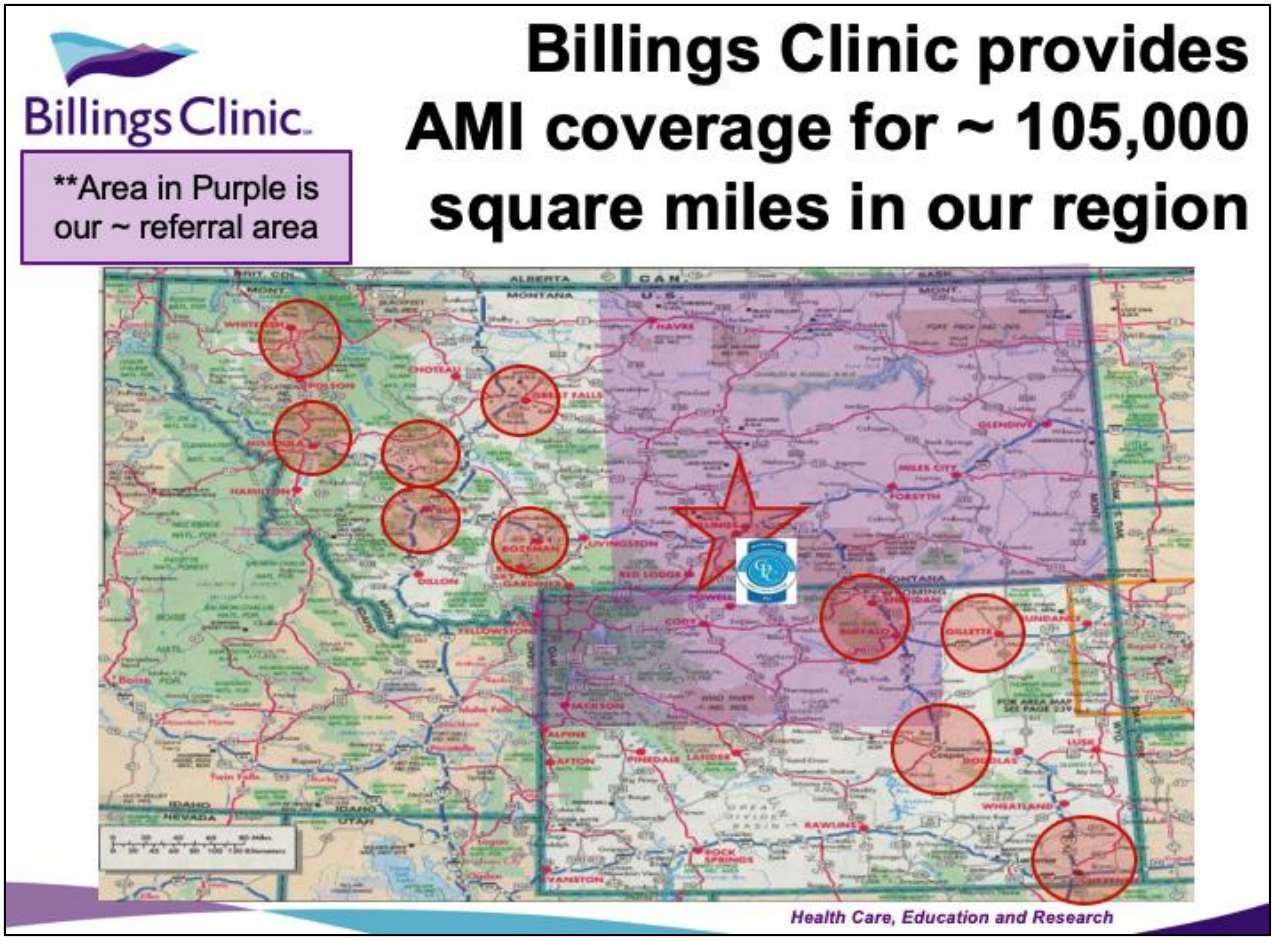
The Solution

Several LSL hospitals set out to improve the case feedback they provided to healthcare professionals across the care continuum.

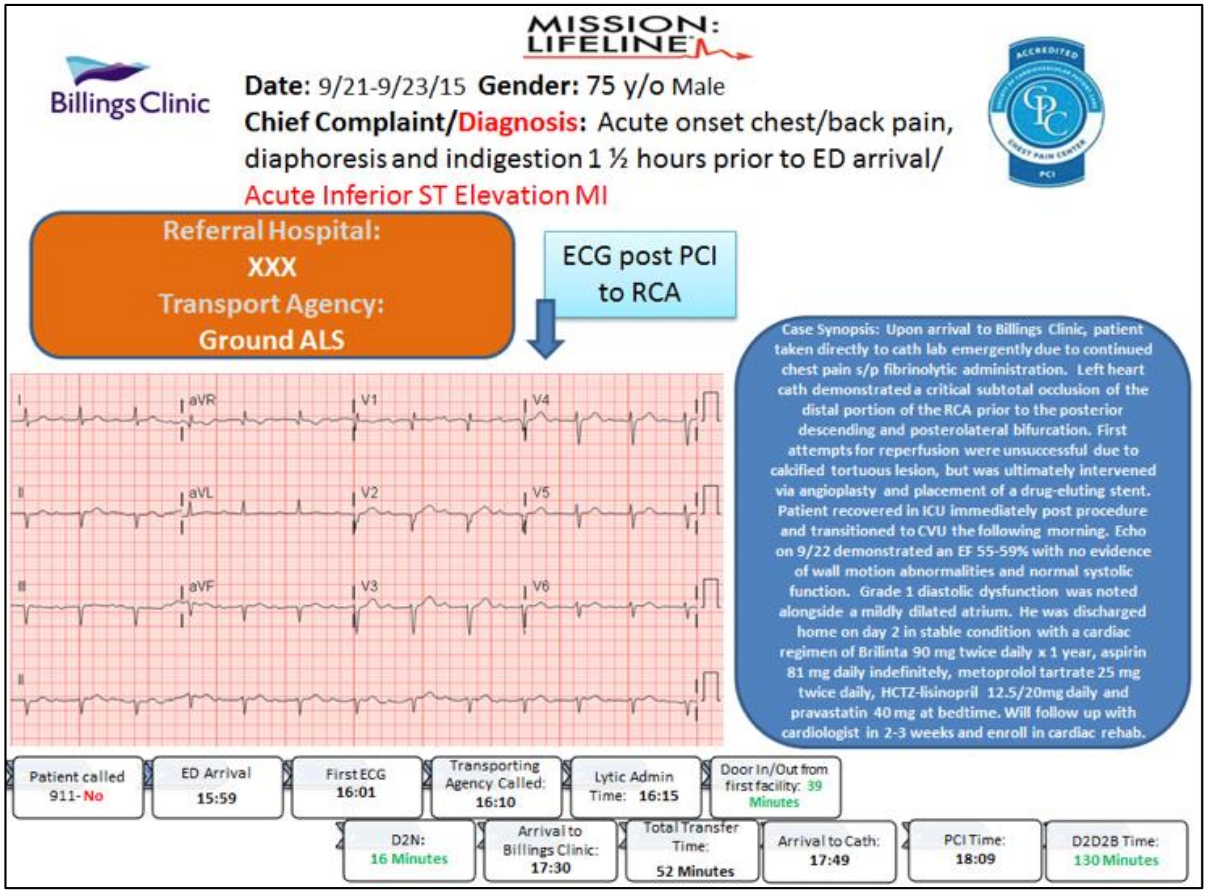
For the Billings Clinic and St. Elizabeth Healthcare, this included more complete case feedback on STEMIs transferred in, as well as more comprehensive review and education with all ACS Care Providers.

System-Wide Feedback

For hospitals with very large referral areas, like the Billings Clinic, improving pre-hospital treatment and transfer practices was a priority.



More complete review

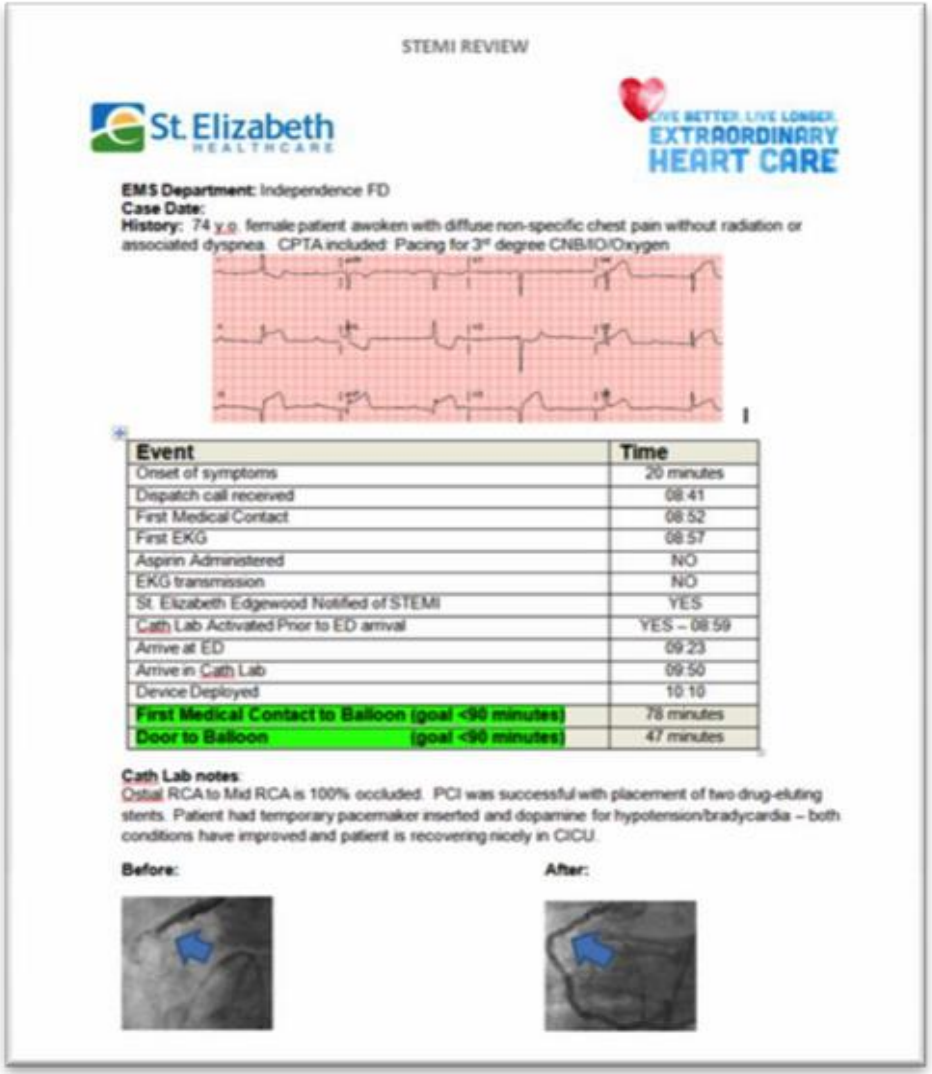


The team developed a more complete case review that included:

1. Presentation and diagnosis
2. Care partners
3. EKG
4. Treatment and outcomes
5. Timing of key intervals

Other layouts

Another LSL hospital included images from the reperfusion to give pre-hospital providers a complete picture of care in a standard template that was shared within 24 hours of the case.



STEMI REVIEW

St. Elizabeth HEALTHCARE

LIVE BETTER. LIVE LONGER. EXTRAORDINARY HEART CARE

EMS Department: Independence FD
Case Date:
History: 74 y.o. female patient awoken with diffuse non-specific chest pain without radiation or associated dyspnea. CPTA included: Pacing for 3rd degree CNB/IO/Oxygen

Event	Time
Onset of symptoms	20 minutes
Dispatch call received	08:41
First Medical Contact	08:52
First EKG	08:57
Aspirin Administered	NO
EKG transmission	NO
St. Elizabeth Edgewood Notified of STEMI	YES
Cath Lab Activated Prior to ED arrival	YES – 08:59
Arrive at ED	09:23
Arrive in Cath Lab	09:50
Device Deployed	10:10
First Medical Contact to Balloon (goal <90 minutes)	78 minutes
Door to Balloon (goal <90 minutes)	47 minutes

Cath Lab notes:
Ostial RCA to Mid RCA is 100% occluded. PCI was successful with placement of two drug-eluting stents. Patient had temporary pacemaker inserted and dopamine for hypotension/bradycardia – both conditions have improved and patient is recovering nicely in CICU.

Before:

After:

Perspectives from the front line

"We also started doing a feedback loop. We were giving them information back on how their patients did, where their times actually were, so they could gauge and maybe work towards improvements. Sometimes I think you're just not quite aware of exactly where your timelines were for door to needle, door in your facility, door out your facility. And then, also, how their patients did. Saying, "This went really well and your patient did really well."'

--- Guiding Coalition Member

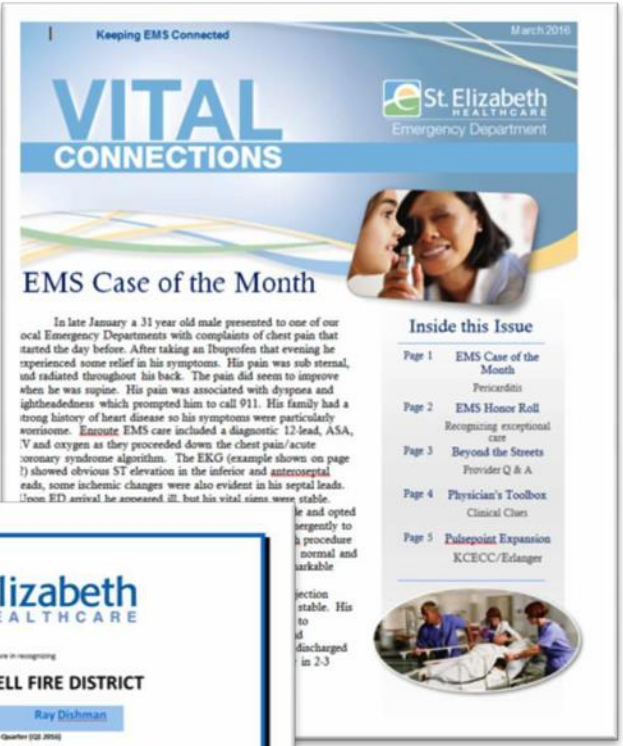
Implementation experience

- Implementation of the STEMI feedback forms were well received across hospital settings.
- In some sites, providing structured feedback helped to reinforce state and receiving hospital processes and protocols.
- Due to increases in number of transfer cases, some sites found it difficult keep up with their goal of sending feedback reports within 24 hours of the case.

More Pre-Hospital Feedback

St. Elizabeth Healthcare expanded their pre-hospital feedback to include:

- EMS Case of the Month and Crew of the Quarter recognition programs
- Responsive educational offerings (Monthly EMS/Nursing Lecture Series, Mobile educational simulation service, St. Elizabeth EMS course)


Keeping EMS Connected

March 2016

VITAL CONNECTIONS

St. Elizabeth HEALTHCARE Emergency Department

EMS Case of the Month

In late January a 31 year old male presented to one of our ocal Emergency Departments with complaints of chest pain that tarted the day before. After taking an Ibuprofen that evening he xperienced some relief in his symptoms. His pain was sub sternal, nd radiated throughout his back. The pain did seem to improve hen he was supine. His pain was associated with dyspnea and ightheadedness which prompted him to call 911. His family had a trong history of heart disease so his symptoms were particularly orrisome. Enroute EMS care included a diagnostic 12-lead, ASA, V and oxygen as they proceeded down the chest pain/acute oronary syndrome algorithm. The EKG (example shown on page) showed obvious ST elevation in the inferior and anteroseptal eads, some ischemic changes were also evident in his septal leads. Upon ED arrival he appeared ill, but his vital signs were stable.

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St. Elizabeth HEALTHCARE

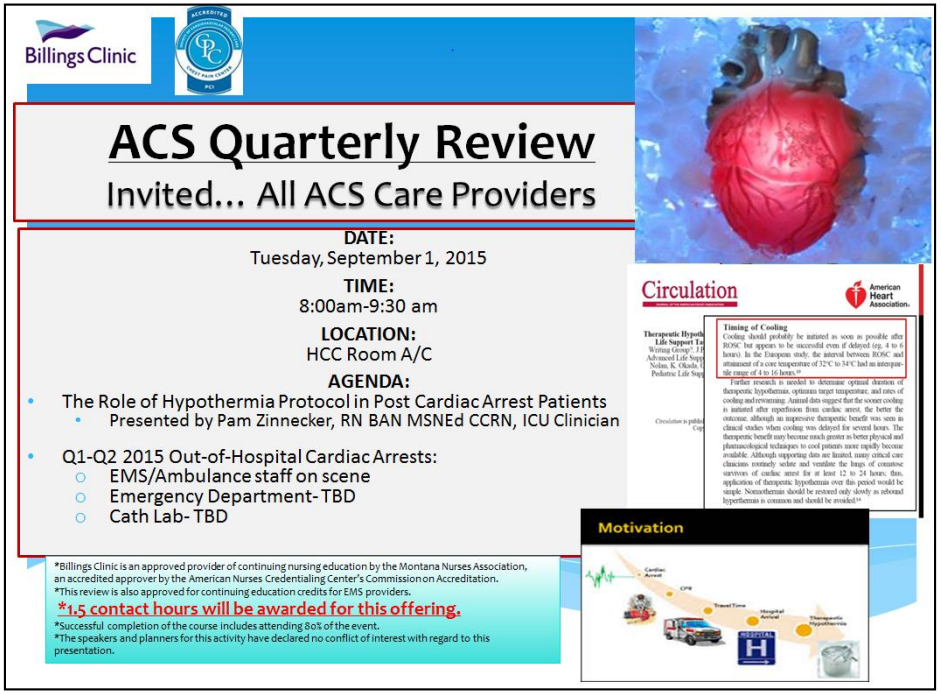
CENTRAL CAMPBELL FIRE DISTRICT

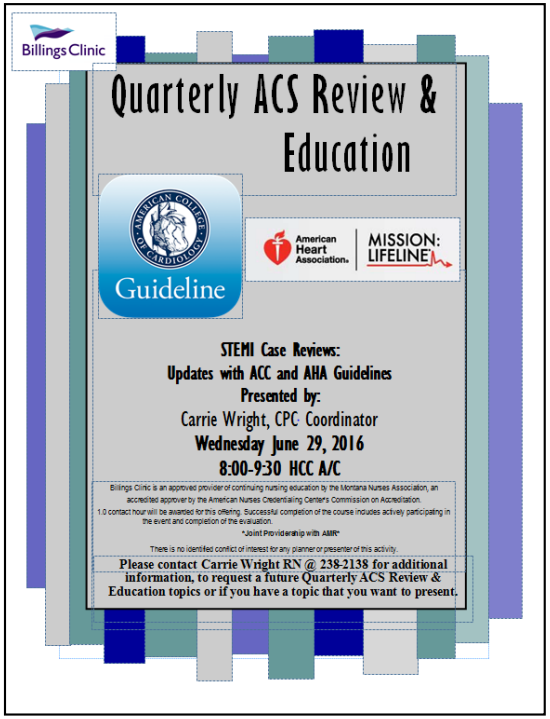
Dave Weghorn Ray Dishman

Real-Time Communication

St. Elizabeth also invested in equipping providers both within and beyond their healthcare system with Pulsara, new technology for standardized communication via smartphone, including secure EKG transmission and one-touch activation of the Cath Lab.

Quarterly Case Review





At the Billings Clinic, quarterly case review, open to all ACS providers across the care continuum, provided an opportunity for learning, reflection, and development of relationships. Continuing education credit helped reinforce participation.

Perspectives from the front line

“A lot of our guys don't get to see what happens in the hospital. Once the patient is discharged, we'll get a 911 call. They'll say, "I just got discharged from the hospital for a heart attack." Then we just bring them back. But now we see how they discharge their patients, how they do follow up with their patients. That was an interesting thing to learn.”

“They go over every patient that month, and I think those are really good. I learn a lot. It's interesting to see how well they all flow together, because most of the EMSs now are doing EKG's on scene, and they are radioing ahead. If they're a STEMI, they're bypassing the ER altogether and going straight to the cath lab, which I think is wonderful.”

“They’re coming out with Pulsara. They want to continue with working with the EMS to find out if there’s departments that have issues in the transmission of EKG. They want to assist them whether it’s finding funding for them for equipment or getting them equipment.”

“We start off with an education type seminar… we offered [EMS] the opportunity to come through the cath lab so they could see real-time events unfold, and what happens to the patient once they get here, so they know what to expect when they do bring a patient. We'd got feedback that that was not the best situation, so we opened the channels of feedback so they feel very comforted to call us with questionable EKG's so we can help answer those scenarios.“

--- Guiding Coalition Members

Disclaimer

The examples and templates in this Practice Brief were generously shared by the Billings Clinic and St. Elizabeth Healthcare.

They are intended to serve as a starting point for conversations about how to improve use of data to improve care for patients with AMI, and should not be interpreted as an endorsed clinical guideline.

We encourage hospital teams to adapt these approaches to their own needs and local context.