**National Processes/ Mission LifeLine Initiatives**

Standardized protocols for care across 10 county area currently encompassing Regional Advisory Council (RAC). Mission Lifeline is a national initiative to advance the systems of care for patients with ST segment elevation MI (STEMI) and all AMI patients. St Davids Georgetown Hospital supports this representation through participation on the Cardiac Care Workgroup. Other existing members include representation from all area EMS providers and hospitals. Meetings for each subgroup are held monthly with quarterly meetings for all groups to communicate recommendations for care improvements of our STEMI/ ACS patients.

**Collaborative Approach to Care**

St Davids Georgetown Hospital supports EMS integration into our plan of care for ACS patients through the Williamson County HealthCare Coalition which was established in 2005 between St Davids HealthCare and Williamson County EMS. St Davids Georgetown Hospital joined this Coalition in 2006. The purpose of the Coalition is to review processes for potential improvement opportunities. Cases involving cardiac/ acute coronary syndromes are included in reviews. Reviews are inclusive of first responder treatment through recovery phase of patients.

The Williamson County Coalition is comprised of a multidisciplinary team of physicians, nurses, administrators, paramedics, and Quality Management staff from various sources such as Emergency, Cardiology, Cath Lab, Quality and EMS.

During the Williamson County Coalition meetings, all transfers from St Davids Georgetown Hospital to St Davids Round Rock Medical Center and from our Emergency Department door to St Davids Round Rock Medical Center balloon inflation time are tracked and reviewed for improvements in flow of patient. Current core measures are indicative of the monitoring and success of quality improvements that have been put into place.

Based on the reviews to quality data and measurements, we have implemented changes in our program such as streamlining order sets, revising process of anticoagulant administration, and initiating education opportunities for inpatient nursing staff.

Staff participation in staff meetings and during process changes occurs frequently. The hospital maintains open forums and open discussion opportunities to improve patient care. Please refer to work sheets from ED staff and paramedics regarding Acute Coronary Syndrome education processes in the Emergency Department.

St Davids HealthCare has initiated a One Call program to assure a one step transfer from each facility to a higher level of care. One Call staff make all transfer arrangements outside of the currently established St Davids Georgetown Hospital to St Davids Round Rock / Williamson County Coalition agreement. One Call assures contact with receiving cardiologist as well as administrative approval and support for transfers.
Benchmark Times
St Davids Georgetown Hospital arrival to St Davids Round Rock Medical Center transfer times continue to meet national standards at an average of 36 minutes, with overall Time of Arrival at primary facility to time of balloon inflation at less than 90 minutes. Door to EKG at 4 minutes at initial facility have decreased due to the Implementation of field EKG tracing interpretation by ED Physicians. All patients presenting with symptoms of ACS are immediately placed in an examination room, have an EKG performed by ED staff and interpreted by an ED physician credentialed in EKG Interpretation within 10 minutes of arrival. Our Expedited Intake process is utilized with all other ED patients regardless of presenting chief complaint. Our current arrival to bed time for all ED patients presenting to triage is averaging 11 minutes. Our goal for arrival to transfer for STEMI patients has been established at 30 minutes.

Physician Support
Collaboration of the Chest Pain order sets began in 2006 as we initially introduced and prepared this staff for accreditation as a Chest Pain Center. There is ongoing dialogue between physicians in Section meetings and forums outside of formal meetings. The Williamson County Coalition provides a forum for St Davids Round Rock Medical Center Interventional cardiologists to discuss and assist in the revision of Chest Pain protocols and order sets that are utilized throughout the 5 facility HealthCare partnership.

Reverse STEMI Process
Internal agreements are utilized for the 6 area St Davids HealthCare facilities. All facilities utilize standard protocols for inter facility transfers based on needed level of care for patient and services provided at each facility.

Reverse STEMI is the classification “code name” that is given to our ACS/ STEMI patients requiring a transfer from non-PCI facility to PCI facility. Any patient identified as a “STEMI” or “NSTEMI” requiring immediate intervention is coded throughout the continuum as a ‘Reverse STEMI Alert”. SDGH ED calls a medical alert initiating our response team in the Emergency Department to stabilize the patient and make ready for transport. EMS is notified of a “Reverse STEMI” transport and arrives to the sending facility within 5 minutes (Williamson County utilizes a CODE 3, full lights and siren transport). The patient is the transferred to the receiving facility as a Code 3 ALS transport.

Administrative Support
Administration has played a key role in the oversight and approval of initiatives through mechanisms such as Department Section Meetings and Medical Executive Committee. Fiscal support has offered us the opportunity to provide patients with up to date cardiac monitoring equipment, internet based communication feedback to EMS, and education opportunities for all nursing and technical staff within the facility.
Staff Education
Capital Area Trauma Regional Advisory Council (CATRAC) supports facility and EMS education for the community through the provision of grants for education, particularly by offering Basic Life Support classes to healthcare workers and Advanced Cardiac Life Support and Pediatric Life Support classes to hospital and EMS personnel free of charge to the facilities.

Staff of the St Davids HealthCare System is afforded online education opportunities through the use of Healthstream, CE Direct, Sullivan Education courses as well as on site classroom opportunities and other educational offerings through in house educators as well as the educators with the Academy of Clinical Excellence (the educational branch of our hospital system).

Chest Pain Center Certification
In 2007, St Davids Georgetown Hospital received Cycle II Certification as a Chest Pain Center (non-PCI facility) from the Society for Chest Pain Centers. In 2010, St Davids Georgetown Hospital recertified as a non-PCI facility, at the Cycle III level with best practices identified by the Society of Chest Pain Centers.

Lovenox Push n’ Go Medication Practice
In April 2008, we noted our arrival to transfer time were averaging 45-60 minutes, thus extending the overall door to balloon time for our STEMI patients. In collaboration with the staff at St Davids Round Rock Medical Center, as well as Emergency Department Physicians and Cardiologists from both facilities, we ceased our practice of initiating Integrillin infusions and instead opted for a quicker Lovenox “Push n Go” administration practice. This shaved 15-20 minutes from our stabilization time thus improving overall door to balloon times and abiding by our “Time is Muscle” philosophy. Refer to PDCA for detail.
PROBLEM
Prolonged delays in transfer of STEMI patients from SDGH Emergency Department to RRMC Cath Lab

BASELINE DATA
Outpatient AMI/STEMI transfer SDGH Emergency Department length of stay averaged 46 minutes from SDGH door to RRMC Cath Lab door. Reasons for length of stay included the initiation of IV Integrilin and priming of IV pump that is not of common brand with the receiving facility.

POTENTIAL ROOT CAUSES
Potential for delayed door to balloon time over 90 minute benchmark for success in reversing coronary artery occlusion and cardiac muscle injury/infarction.

SOLUTION IMPLEMENTATION
Discussions ensued regarding evidenced base practice on administration of Lytic therapy in patients diagnosed with ST elevation myocardial infarction. Discussions occurred within multidisciplinary team of Emergency Department physicians, Cardiologists, EMS personnel, ED Directors, Cardiology Director and Pharmacists. Decision made to cease practice of Integrillin infusion and adopt use of a “Lovenox push and go” standard of care.

CHECK
Emergency Department length of stay for AMI/STEMI patients decreased from 46 minutes in 2008 to 35 minutes in 2009 through the first quarter of 2010. This has led to a decrease in overall SDGH door to RRMC balloon times to within the 90 minute standard of care.

ACT
Staff educated on process and outcomes review. Cases are reviewed at monthly Williamson County Coalition meetings and staff meetings with physicians and nursing staff to evaluate process improvements.
Quality Improvement

Dissemination of Dashboard stats and Core Measures occur monthly at Department of Medicine and Department of Emergency Medicine meetings. PEPP/ Sullivan Annual Evaluations are confidential as part of the physician peer review process. Median EKG times continue to meet standard of completion within 10 minutes of arrival. All cases that do not meet the ten minute criteria are reviewed with the Quality Department and the ED staff member responsible for the completion.

Outpatient AMI scores pertaining to transfer to another facility are tracked by receiving PCI facility and reviewed monthly at the Coalition meetings. These results have been placed on a graph which show a downward trend in overall door to door and door to balloon times.

Within the Dashboard metrics, all criteria established are meeting the goals set by the HCA Emergency Services initiative. The goal of 10 minutes for arrival to triage has been met at 6 minutes; arrival to greet has met the goal of within 30 minutes at our average of 27 minutes. We are currently evaluating our ED throughput and developing additional goals to streamline or processing times in the Emergency Department.

Summary

Non PCI facilities are consistently challenged to provide standard of care and improve door to reperfusion times. Methods of providing this care include traditional thrombolytic therapy and the formalization of a transfer process that meets equivalent standards in meeting door to balloon times as a PCI facility. The Emergency Department Team at St Davids Georgetown Hospital (a nonPCI facility), along with the Williamson County Coalition has developed a formal process of assessment, stabilization, therapy initiation and transportation of STEMI/ACS patients that meets quality of care standards and goals of the PCI facilities within the HealthCare partnership.
Improving PCI Benchmark times in a Non-PCI World

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HOW WE DO IT

Physician Support
Reverse STEMI Process
Collaborative Approach to Care
Lovenox Push n’ Go Practice

Staff Education
Administrative Support
Quality Improvement
Chest Pain Center Certification
National Processes Mission LifeLine Initiatives

HOW WE DO IT

St. David’s Georgetown Hospital
A St. David’s Medical Center Facility