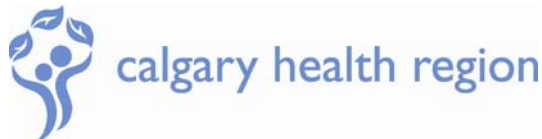


FROM 911 TO BALLOON: REDUCTION OF ISCHEMIC TIME IN PRIMARY ANGIOPLASTY BY IMPLEMENTATION OF AN EXPEDITED TRANSFER PATHWAY



Editor’s Summary: In *From 911 to Balloon: Reduction of Ischemic Time in Primary Angioplasty by Implementation* the team from Calgary Health Region worked with Emergency Medical Services (Ambulance), the Emergency Department and the Cardiac Care Unit to initiate an expedited protocol for the diagnosis and treatment of individuals who may be having a heart attack. The protocol begins when a call is made to 911 for a patient with chest pain. By using an expedited transfer protocol, the teams were able to streamline and shorten the time between diagnosis and treatment. The pathway enabled the teams to shave close to a full hour off of the median time required from 911 to treatment, improving changes of both survival and recovery.

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Purpose:	Recent publications demonstrate that transferring patients to invasive-treatment centre for primary percutaneous coronary intervention (PPCI) is safe and effective in acute ST elevation myocardial infarction (STEMI) compared to on-site fibrinolytic therapy. Yet, the process of triage, diagnosis and transportation to invasive-treatment centre may prolong time to reperfusion hence reducing its efficacy
Context:	As part of the regional cardiovascular Quality Improvement and Health Information (QIHI) initiative for the Calgary Health Region (CHR), the cardiology service, emergency medical service (EMS) and emergency department (ED) established a working group with the objective of improving outcomes in acute STEMI patients.
Resources:	Operating \$: _____ FTEs:___1.0 FTE Quality assurance nurse specialist_____
Source of resource:	<input type="checkbox"/> <i>In kind</i> contributions from the organization <input type="checkbox"/> Dedicated internal funding <input checked="" type="checkbox"/> External funding (example grant, Ministry etc.)

Population group:	Patients suffering an acute ST elevation myocardial infarction
Patient flow entry and end points:	From point of first contact with EMS to re-perfusion through angioplasty
Description/ approach:	An expedited transfer pathway (ETP) was designed and implemented to streamline the process of care in patients who seek medical attention for ST elevation MI's. These improvements include preliminary EKG diagnosis of STEMI by EMS, early communication with ED, cath lab and CCU, expedited transportation from home to invasive-treatment centre and shortening ED triage process
Tools and tactics:	Development of an expedited transfer pathway for patients seeking care through EMS in the city of Calgary
Measurement approach:	Percentage of patients achieving door to balloon time of less than 90 minutes. Also compared time before and after implementation of the pathway from first contact to balloon inflation and from door to balloon time.
Impact/ evaluation:	The introduction of the pathway resulted in a median door-to-balloon time of 62 (interquartile range 45–84) minutes. A door-to-balloon time within 60 minutes and within the currently recommended 90 minutes was achieved in 48.9% and 78.8% of the patients respectively. Median EMS scene arrival to balloon inflation time is reduced by 62 min (129 vs. 67; $p<0.001$). Median door to balloon time is reduced by 55 min (95 vs. 40; $p<0.001$) Majority of time saved occurred during triage to cath lab arrival time of 43.5 min (62.5 vs. 19; $p<0.001$)
Observation/ Discussion:	With a coordinated and team approach by EMS, the ED, and Cath team, it is possible to meet target times of reperfusion within 90 minutes. This takes a lot of time, effort, and cooperation.
Critical success factors/ lessons:	Cooperation between EMS, the ED, Cath lab and CCU is essential for success. All members play an integral role. Need a commitment to a regional approach to STEMI care. Need a commitment for ongoing maintenance and improvement by all team members.
Limiting factors:	We still struggle with gridlock, and the inability to even get EKGs on walk in patients to the ED's with chest pain, or atypical symptoms. This results in ongoing delays in walk in patients with ST elevation MI's.