



When the Heart Aches, Saving Time is Saving Lives . . . Understanding the Door to Balloon Alliance

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According to the American College of Cardiology, nearly 400,000 patients are admitted to US hospitals with a potentially life threatening heart attack caused by the sudden occlusion by clot of a partially narrowed or blocked coronary artery, known as ST elevation myocardial infarction (STEMI). This blockage causes lack of oxygen to the heart muscle, which causes the heart muscle to suffer irreversible damage. Survival depends on several factors, the most important of which is restoring blood flow to the aching heart as quickly as possible. This is done by mechanically unobstructing the coronary artery with a balloon catheter or by the dissolution of the occluding clot with medications known as clot busters (thrombolytics).

Longer intervals between the onset of symptoms and balloon time are consistently associated with poorer outcomes. As time goes on, without treatment, damage to the heart may be irreversible. There is well-documented evidence that mechanically opening the blocked artery within 90 minutes of a heart attack or myocardial infarction can limit the size of damaged muscle or even stop the infarction 95-99% of the time. Conversely, delays of 91 to over 120 minutes result in an increase in-hospital mortality .

Knowledge is Power. Know the signs of a heart attack, but be aware that symptoms can vary from person to person. Usual signs of a heart attack include chest pain, discomfort, heaviness or fullness in the chest, discomfort in arms, neck, jaw, stomach, shortness of breath, cold sweat or even nausea and vomiting. Sometimes these symptoms can come on suddenly but they can develop slowly and progressively worsen. Not every chest pain is a heart attack, but it is impossible to know that before evaluation by a medical professional.

Call 911 if you think you may be suffering from these symptoms. Never drive yourself or anyone else to the hospital if these symptoms occur because during a heart attack, the possibility of life threatening rhythms exists, which can result in sudden loss of consciousness and death.

Take Action. Delaying treatment may make the difference between life and death. Doing nothing is **not** an option. Left untreated, acute coronary blockages can lead to permanent debilitating heart damage or sudden death.

Time is Muscle. In the past, patients who were having chest pain were told to go to the nearest hospital. This is no longer the standard of care. Patients with known coronary artery disease (hardening of the arteries or clogged arteries) or previous coronary artery bypass surgery or previous angioplasty and stent who are having symptoms are at high-risk of acute heart attacks and should be transported to the nearest hospital capable of performing urgent cardiac catheterization, angioplasty and stents. Treatment should not be delayed by sending a patient just to the nearest hospital that *cannot* provide these specialized services.

D2B. National guidelines developed by the American College of Cardiology (ACC) and the American Heart Association (AHA) state that hospitals treating patients with acute heart attacks with need for emergency angioplasty or possible stent should reliably achieve a door-to-balloon time of 90 minutes or less (<http://www.d2balliance.org/>).

The ACC has initiated a national campaign known as the D2B (door to balloon) Alliance, to save time and lives by reducing the time it takes for a patient to receive primary percutaneous coronary intervention (PCI) when suffering acute heart attacks and coronary blockages.

This bold undertaking already has 60% of all US PCI capable hospitals (heart hospitals) on board by implementing the following strategies to reduce door to balloon time:

- Early activation of cardiac catheterization laboratory with direct transfer, avoiding ER wait times and cardiology consult
- Single call systems to activate cath team who are ready within 20-30 minutes
- Cath lab availability 24-hours per day
- Team based approach

This reduction in door to balloon time is not only associated with decreased damage to heart muscle, but also shorter hospital stays and cost savings. In our area, the hospitals capable of treating heart attack patients with coronary angioplasty and stenting within 90-120 minutes are Florida Hospital in Zephyrhills, University Community Hospital (Fletcher Ave) in North Tampa, St. Joseph's Hospital in Central Tampa, Tampa General Hospital in South Tampa and Brandon Regional Hospital and Lakeland Regional Hospital in Lakeland.

Putting it All Together. Not every chest pain is a heart attack, but it is impossible to know without being evaluated by a medical professional. When having chest pain or related symptoms, it is best and safest to call 911. For those who have a history of coronary disease, previous coronary interventions (stents, angioplasty or open-heart surgery), transport to a PCI center is imperative. Primary PCI in the shortest amount of time is the best chance for survival and limiting of heart muscle damage.

Sources

<http://www.d2balliance.org/>

www.theheart.org