Acute Coronary Syndrome (ACS) Clinical Pathway to Launch March 1st.

You've heard the saying "time is muscle" usually in conjunction with a patient being rushed into the ED with tombstone T waves, then taken urgently to the Cath Lab where their blocked coronary artery is identified and opened by a skilled cardiologist. But what happens when the case is not so clear cut? The patient may have chest pain, but no definitive EKG changes. Or there are suspicious EKG changes, but no positive biomarkers. Or they had chest pain when they called the ambulance, and now they are sitting quietly with no outward symptoms. Welcome to the often-puzzling work of diagnosing heart disease. Every day physicians are handed a mixed bag of symptoms and medical history and asked to make a quick and correct decision because *oh by the way,* that phrase "time is muscle" still applies.

These patients will likely be given a diagnosis of unstable angina (UA) or non-ST elevation myocardial infarction (NSTEMI) which fall under the broader diagnosis of Acute Coronary Syndrome (ACS). **Wouldn't it be helpful if there were a way to predict just how "at risk" a patient is for a significant cardiac event?** It turns out such a tool does exist! The UA/NSTEMI TIMI score correlated significantly with increased numbers of cardiac events at 14 days including all-cause mortality, new or recurrent MI, or severe recurrent ischemia requiring revascularization.

Analysis of data from the TIMI 11B and ESSENCE trials found the TIMI score to be independently predictive of major cardiac events in patients with UA or an NSTEMI.

- ●Score of 0/1 – 4.7 percent
- ●Score of 2 – 8.3 percent
- ●Score of 3 – 13.2 percent
- ●Score of 4 – 19.9 percent
- ●Score of 5 – 26.2 percent
- ●Score of 6/7 – 40.9 percent

The UA/NSTEMI TIMI score is a simple seven point scoring system with one point given for each of the risk factors mentioned below.

- ●Age ≥65 years
- ●Presence of at least three risk factors for coronary heart disease (CHD)
- ●Prior coronary stenosis of ≥50 percent
- ●Presence of ST segment deviation on admission ECG
- ●At least two anginal episodes in prior 24 hours

- ●Elevated serum cardiac biomarkers
- ●Use of aspirin in prior seven days

Higher TIMI risk scores have also been correlated with more severe angiographic disease. The PRISM-PLUS trial showed that higher TIMI risk scores were associated with progressive increases of high-risk angiographic findings such as severe culprit stenosis, multi-vessel disease, visible thrombus, and left main disease.

Given the importance of early risk stratification for patients with Acute Coronary Syndrome, the ACS process improvement team, at the direction of the Cardiology Clinical Integration Network (CCIN), built a clinical pathway into Epic to assist providers in assessing patient risk level. The clinical pathway includes the TIMI risk calculator and an ACS order set. A link to the TIMI risk score will appear in the form of a Best Practice Alert (BPA) for all patients with an admitting diagnosis of unstable angina (UA), non-ST elevation myocardial infarction (NSTEMI), Chest Pain (CP), Acute Coronary Syndrome (ACS) and/or a lab value of elevated Troponins. Studies have shown patients with moderate to high risk (TIMI score ≥3) benefit from an early invasive strategy. With a TIMI score of 3 or greater a consult to Cardiology is strongly recommended to get patients into the Cath Lab for possible coronary intervention. For those patients who score 2 or less, a stress test evaluation could be considered.

Once the TIMI risk calculator is completed with a score of 3 or more, providers will be directed to use the ACS order set which includes recommended medical therapy.

For more assistance in navigating the ACS pathway, call the Solution Center at 503-814-4357 to access tip sheets or request support from the Clinical Informatics team.