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Title: Early Cardiology Follow-Up of Low risk Chest pain Patients After
Emergency Room Discharge: Improving Patient Compliance

Background:

There are more than 8 million Emergency Room (ER) visits in US for chest pain. Only minority of these patients have underlying significant coronary artery disease (CAD). There are several available protocols for identifying these low risk patients in the ER who can be safely discharged. If stress testing is not done prior to discharge, the current recommendation is that these patients should undergo provocative testing within 72 hours. Compliance with out patient stress testing is reported to be poor in low risk chest pain patients. So, this group of patients are considered " high risk" from a medical malpractice standpoint because sudden cardiac arrest accounts for a large proportion of the malpractice dollars paid to plaintiffs from ER specialty. This is creating a wide variability in how these patients are managed. A large portion of these patients are admitted to hospital or kept in observation units awaiting stress testing. A protocol was initiated as a collaborative effort between ER and Cardiology departments. The patients identified as low risk, are discharged from ER with an appointment to be seen in cardiology clinic within 72 hours for evaluation and stress testing. The objective of this study was to evaluate the outcome and effectiveness of this protocol this community hospital setting.

Methods:

An interdisciplinary group of physicians collaborated to develop clinical guidelines and algorithms for identifying low risk chest pain patients and scheduling out-patient Cardiology evaluation for them. ER providers used "Heart Score" model to identify the low risk patients who can be safely discharged and followed as out patients. The "Heart Score" work sheet was programmed in to the Electronic Medical records (EMR) for documentation. Cardiology out patient appointments were made to be seen within 72 hours after discharge from ER. The exact appointment details were provided to the patients at the time of ER discharge. Patients discharged from the ER before 2 pm on a working day were given an appointment on the same day and those discharged after 2 pm, the next day. The ER Charge nurse contacted the pre identified contact person in cardiology Clinic by phone and set up these clinic appointments. All pertinent ER records were made available to the Cardiology provider in a timely manner. Patients were evaluated and if needed, the stress test performed on the same

day. After the first clinic visit, appropriate follow up was done as needed. All the details of the cardiac evaluations were sent back to the ER for the ER providers review. The details were also incorporated in to the hospital EMR for future references. They were also provided to the primary care providers.

Results:

Starting in September of 2015, in a 7 week time, 40 patients were identified as appropriate to follow this protocol. Out of this group, 36 patients (90%) had a length of stay of less than 4 hours in the ER. 37 patients (92.5%) presented for out patient cardiac evaluation as scheduled. Out of this 37 patients, 35 (94%) were evaluated by cardiology provider in less than 24hours from the time of ER discharge; 10 (27%) were either unable to perform treadmill stress test or clinically did not require same day stress test; 25 (67%) had exercise treadmill stress test the same day of evaluation and 3 (8%) had myocardial perfusion study. 3 patients (8%) had Coronary Angiogram. No one had percutaneous cardiac intervention. One patient had Coronary artery bypass surgery. There was no Myocardial Infarction or death in 30 day follow up.

Conclusion:

Review of our data indicates that low risk chest pain patients can be identified and discharged safely with short length of stay in the ER. With a collaborative and well coordinated protocol, these patients can be followed up in the cardiology clinic with high compliance rate and have appropriate testing done in a timely manner. We attribute the success of the program to the excellent communication between ER and Cardiology departments. The high patient compliance is attributed to the timeliness of the Cardiology appointment following ER discharge. This protocol appear to be safe with low Major Cardiovascular Adverse Event rate. It is cost effective with a high patient satisfaction. When the ER providers are aware that there is high compliance and appropriate follow up, they were able to confidently identify, treat and release low risk patients from ER, reducing the unnecessary hospital admissions.