Case Study
How are patients selected for co-management?

Introduction of the Problem:

The disposition of patients with medical co-morbidities that are admitted to the hospital in need of surgical intervention is often contested.

Background:

Currently if the patient has active medical issues, they are usually admitted to medicine (syncope caused the fall, current CHF, COPD exacerbation, unstable angina, etc). If the issues are inactive, they are admitted to surgery (h/o HTN well controlled, h/o COPD with normal sats and exam, etc).

However, there is concern that these "inactive" issues may become "active" due to peri-operative perturbations, and it is often unclear at the time of admission to which team the patient should be most appropriately triaged. This is especially true for very elderly patients.

This is complicated by intrinsically conflicting opinions in discerning active from inactive issues, and which inactive issues are likely to become active during the hospital course.

Data:

Comment: Do you really want all of these abbreviations?

Case in point: 91 year old female with a history of atrial fibrillation (rate controlled on coumadin), severe dementia, and peripheral vascular disease transferred from an outside hospital following an unwitnessed fall resulting in an intertrochanteric hip fracture. Physical examination notable for cognitive impairment such that the patient was unable to describe the circumstances of the fall, a murmur consistent with aortic stenosis, and an externally rotated left leg. Pertinent laboratory tests included an ECG showing sinus rhythm without ischemia, an INR 1.8, HCT 29, trace guaiac + stool, , and a urinalysis which suggested a urinary tract infection. In this case, the emergency department (ED) attending approached the senior resident in medicine first. The medicine resident felt that the issues were all inactive, told the ED physician that the medical service would perform a medical consult and follow the patient in the hospital. The medical resident recommended that the ED attending call the orthopedic service for admission since the patient would need a surgical procedure. In the medicine consult, the medical team recommended: vitamin K to reverse the INR, transthoracic echo the next day to evaluate the patient’s murmur, transfusion of PRBC for a target Hct>30, appropriate antibiotics for the UTI, and telemetry. The ED attending called the orthopedic resident and presented...
the case as "complex", so the orthopedic resident declined admission. The senior resident then called the hospitalist attending to give him a "heads up" (according to the ED attending) so that the hospitalist service would decline the admission. The patient was, however, admitted to the hospitalist service supported by medical physician assistants instead of residents.

After the patient was admitted to medicine, all of the above measures were performed as outlined in the consult and her pre-operative course was uncomplicated. She was then transferred to the orthopedic service post-operatively. Medicine was then consulted on post-op day #2 due to the development of hypotension, rapid afib, oliguria, and delirium, and she was transferred back to the medicine team at that time.

**Orthopedics perspective:**

1. We can respond to most nonacute medical and surgical issues (this population usually has co-morbidities), but our ability to acutely respond to significant medical issues is limited both by time and previous experience.

2. Orthopedic residents have significant OR time during the day - PA service intended to correct for this, who are "invaluable but are not substitutes for optimal care during a medical emergency".

3. Surgical residents may not feel the same "pride" in taking care of their "own" patients as the surgical attendings do, so are more likely to decline an admission or want to transfer the patient to medicine.

4. The nursing staff is more equipped to take care of acute medical issues if the patient is on a medical floor.

5. Most programs in the country have medicine handle "difficult medical patients" in need of orthopedic manipulations.

**Medicine Perspective:**

1. Duty-hour restrictions limit the number of total medicine admissions allowable.

2. The medical problems of orthopedic patients tend to be mundane and not in need of significant diagnostic decision making.

3. Since the indication for admission is the surgical issue, the care of the patient would be more efficient with a direct admission to the surgical service.

4. If the patient is admitted to medicine, it is referred to as a "dump" by the medicine residents with animosity toward the ED, orthopedics, and medicine attendings (who are seen as "impotent" in accepting them).
5. Medicine residents feel that they should have the same right to say "no" as the surgical residents do.

6. Medicine residents feel that orthopedic residents should be able to "handle" most nonacute medical issues without medicine involvement.

**Decision Maker’s Perspective:**

The goal is to design algorithms to minimize opportunities for "self-serving manipulation", decrease the amount of time (and energy) spent on triage, and improve job satisfaction from all levels (ED, surgery, and medicine).

As was clear in this case, there was a discrepancy between what the senior medical and the orthopedic resident considered "active" and "inactive" medical issues. According to the senior resident, the patient "ended up going to medicine (reluctant but willing hospitalist attending in a.m.) to get an echo (which was normal), 24 hrs telemetry (which failed to reveal an arrhythmia to account for the fall) and 4 units FFP before her hip surgery."

There was also a discrepancy in this case (and others) predicting when and if "inactive" issues will become "active" during peri-operative perturbations; just because the patient did "well" pre-operatively on the medicine service does not justify the argument that they never should have been on medicine at the onset.

**Conclusions / Solutions:**

Triage patients according to the degree of medicine involvement. This is based on the number and severity of comorbid conditions of the patient, and the anticipated degree to which medicine input will be warranted (pre, peri, and postoperatively). "Red" patients will be admitted to surgery, "Green" patients will be admitted to medicine, and "Yellow" patients will be admitted to surgery with traditional medicine consultation or to a co-management service if one is available.

This system can be extended to all medicine / surgery triage decisions upon admission, as well as upon request of transfer from a surgical to a medicine service.

**Next Steps:**

1. Develop guidelines on triage of surgical patients to the appropriate service.

2. Develop guidelines on who makes these triage decisions (ED, surgical resident, SAR) and who arbitrates difficult decisions (as referenced above, there may be some discrepancy between what surgery and medicine appropriate for their services).
3. Coordinate a "systems improvement" session with all the key players in attendance (surgery attendings, hospitalist attendings, senior resident, ED, medical residency director) to agree on the triage guidelines.

4. Institute several PDSA cycles after initiating the guidelines to determine if they need revisions (including the arbitrations and their outcomes).

You might have a triage diagram:

Red box for straightforward triage to surgery such as a young trauma patient or a patient with no comorbidity who requires surgery or observation by a surgical service.

Yellow box for patients who require consultation – to be triaged to the surgical service and automatically seen by a traditional consultation service OR to be triaged to a co-management service.

Green box for patients who require admission to medicine such as patients with decompensated medical conditions such as cardiac, endocrine, hepatic, renal or pulmonary conditions.