

What's New in the Patient Safety World

December 2012

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Joint Commission Collaborative on Colorectal SSI's

The Joint Commission Center for Transforming Healthcare has done a number of collaborative projects aimed at improving quality and patient safety, including projects on hand hygiene, wrong-site surgery, and handoffs (see our August 2012 What's New in the Patient Safety World column "[New Joint Commission Tools for Improving Handoffs](#)").

Results of one of their most recent collaboratives have just been released and the outcomes are quite impressive. The [collaborative to reduce colorectal surgical site infections](#) was done in conjunction with the American College of Surgeons and 7 hospitals, most of which you'll readily recognize as having high quality to begin with. They were able to reduce superficial incisional SSIs by 45 percent and all types of colorectal SSIs by 32 percent. In addition, the average length of stay for hospital patients with any type of colorectal SSI was decreased by 2 days. The estimated net savings was \$3.7 million.

Their collaborative programs make use of LEAN and Six Sigma and RPI ([Robust Process Improvement™](#)). They first identified factors contributing to SSI's and then developed targeted solutions for these. And, of course, strict use of metrics and feedback are a core part of the process. The solutions implemented are nicely described in the site's [storyboards](#). The actual interventions should not be any surprise to you but the facilities each identified which interventions were not fully adhered to and developed programs to improve adherence to those recommended interventions. For example, while most were already doing well with choice and timing of prophylactic antibiotics they addressed the issue of weight-based dosing of prophylactic antibiotics and the need to re-dose during prolonged procedures.

Other interventions included:

- Standardized preoperative order sets

- Standardization of skin cleansing for both patients and caregivers
- Protocols for preoperative warming and warming within the OR
- Standardize the closing process
- Separate clean vs. dirty parts of procedure (eg. new gloves, gowns, equipment and instruments after the “dirty” part of procedure completed)
- Standardize wound dressing and wound management
- Focus on hand hygiene (eg. make hand cleansing agent readily available for staff for example by attaching hand sanitizer to bed poles)
- Patient education on wound care at discharge
- Wound ostomy nurse
- Followup phone calls

This is another great example of saying “We know what to do. Why don’t we do it and do it right every time?” Probably the most important lessons from these collaboratives are the change management principles utilized and the rigorous adherence to protocols plus making it easier for everyone to remember to do the right thing. Most importantly it says that even already high performing organizations can apply these principles to make their performance even better.

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Surgical Complications After Discharge

Most commonly collected and reported measures of hospital quality and safety end at the time of discharge. Unfortunately, those do not tell the entire story. Particularly as lengths of hospital inpatient stay have plummeted over the past 2 decades many post-surgical complications go unreported because surveillance/reporting systems have not traditionally followed the patient to the ambulatory setting.

In New York we have had a comprehensive reporting system for cardiac surgery since 1989. For many years, the primary metric receiving attention was the risk-adjusted mortality rate. But then Ed Hannan and colleagues ([Hannan 2003](#)) began to look at what happens to those patients after discharge following cardiac surgery. Using New York State's Cardiac Surgery Reporting System (CSRS) they found that over 15% of those surviving patients were readmitted within 30 days of discharge and that most (84,5%) of the readmissions were, in fact, for reasons related to the surgery. Almost 30% of those readmissions were for infectious complications. That led to efforts to increase the period of surveillance to at least 30 days after surgery. A subsequent study ([Hannan 2011](#)) showed little change in those readmission rates or reasons.

The widely quoted study on Medicare readmissions noted that for surgery discharges the majority of readmissions were for medical rather than surgical diagnoses ([Jencks 2009](#)). But that does not mean the reasons for readmission were not for complications of the surgery.

Now a new study ([Kazaure 2012](#)) has used a large database to identify post-discharge complications following a variety of general surgical procedures. Using data on over 500,000 patients from the American College of Surgeons National Surgical Quality Improvement Program (NSQIP) they determined rates of complications, reoperations, and mortality occurring within 30 days. They found that 16.7% of surgical patients had a complication and that 41.5% of those complications occurred after discharge. Most of the post-discharge complications (75%) occurred within the first 14 days after discharge. They concluded that complication rates vary by procedure, are commonly surgical site related, and are associated with mortality.

The most common post-discharge complications were superficial surgical site infections, organ space infections, severe sepsis, UTI, deep surgical site infection, wound dehiscence, DVT, pneumonia, septic shock and pulmonary embolism.

Patients who had experienced an in-hospital complication were at greater risk of having a post-discharge complication as well. Those who had post-discharge complications had a 3-fold increase in reoperations and mortality. Independent predictors of post-discharge complications were prolonged OR time, occurrence of an in-hospital complication, and an ASA score greater than 2.

There was considerable variation between type/site of surgery and complication rates and the distribution of inhospital vs. post-discharge complications. The highest proportion of post-discharge complications was seen with breast surgery, bariatric procedures, and ventral hernia repairs.

They note that the first 2 weeks after discharge are the most vulnerable so they recommend strategies such as ensuring a prompt physician visit post-discharge or using a nurse practitioner to coordinate care. Using a discharge checklist and coordinating care with home care providers are other recommended strategies. Perhaps using some of the strategies used in our other column this month “[Joint Commission Collaborative on Colorectal SSI's](#)” might also reduce many of these complications.

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Just Went to Have a Smoke...

Recently we went to see Denzel Washington’s new movie “Flight”. In one scene there are 3 hospital inpatients who happen to come to the same hospital stairwell to smoke.

One is a trauma patient, another an oncology patient, and the other a substance abuse patient recovering from an overdose. We wondered how often that scene might actually take place. To our amazement the same week a study came out in the Archives of Internal Medicine ([Regan 2012](#)) that answered our question! The answer: 18.4% of patients who smoke will smoke at some time during their inpatient hospitalization!

Smoking craving, rather than the number of cigarettes previously smoked per day, was a big risk factor for smoking while hospitalized.

Desire to smoke is a well-known risk factor for patients leaving emergency departments without being seen or for leaving against medical advice. We also suspect it is a risk factor for elopement from behavioral health units even though that has received little attention in the literature. Patient smoking is obviously also a risk factor for hospital fires, increases the MI risk, increases pulmonary complications, and impairs wound healing among other adverse effects.

One message in the Regan study is clear: just assessing tobacco cessation issues and offering nicotine replacement therapy and counseling on admission is not enough. Ordering nicotine replacement therapy on the day of admission was associated with less smoking before the counselor's visit but not for the entire hospital stay. So it is really incumbent upon hospitals to incorporate continued assessment, perhaps even daily, of tobacco issues into their care plans.

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More on Hospitalized Parkinson's Disease Patients

In our August 2011 What's New in the Patient Safety World column "[Problems Managing Medications in Parkinson's Disease](#)" we highlighted an article ([Derry 2010](#)) that looked at patients with Parkinson's disease who were admitted to hospitals for surgical procedures. Derry and colleagues found that 12% of all doses of anti-Parkinsonian medications were missed during the surgical hospitalizations. While the reason for missed doses was not always mentioned, reasons like "unable to swallow", "nil by mouth", and "out of stock" were sometimes mentioned. Of course, in Parkinson's it is important to find alternative ways to get patients their medications at all times. Also, inappropriate doses of antidopaminergic medications, which could worsen the Parkinsonian features, were prescribed in 41% of cases (though actually only administered in 22%). The authors note that complications were very frequent in this population, in keeping with previous literature.

A new study from The Netherlands ([Gerlach 2012](#)) found that 21% of Parkinson patients admitted to a hospital experienced deterioration of motor function and 33% had one or more complications. Moreover, 26% received incorrect anti-Parkinson medications, which was the most significant reason associated with clinical deterioration. Infections also increased the risk for deterioration (though not after adjustment for confounding variables) and of patient-related factors higher doses of L-dopa were associated with increased risk of deterioration.

Patients with Parkinson's often require specific timing of their medications in order to minimize the "on-off" phenomenon and to avoid hyperkinesias. This results in their requiring multiple dosing throughout the day and often at unusual times. It is very difficult for hospitals to have medication administration times that correspond to how those patients take their drugs at home. One suggested intervention is to allow the patients to self-medicate with their anti-Parkinson's medications while hospitalized.

Interestingly, the researchers found the situation no better in those patients admitted to neurological wards rather than other wards. This simply suggests an overall relative lack of understanding of Parkinson's disease in healthcare workers who work primarily in hospitals. It also reflects some of the rigid medication administration practices we have in most hospitals.

The results were based upon patient-supplied answers to a questionnaire. However, when a sampling of inpatient charts was reviewed there was a striking paucity of recognition of deterioration by physicians and nursing staff.

In a review on the perioperative management of the geriatric patient, Ersan notes that Parkinson's patients require special attention ([Ersan 2011](#)). She notes that withholding medications in patients who are NPO can cause significant worsening of symptoms,

including enough stiffening of chest wall muscles to cause hypoxia. In addition, tremor and dysphagia may worsen.

We've discussed before the phenomenon of deterioration in functional status that often occurs when a geriatric person is admitted to a hospital. That applies especially to patients with Parkinson's whether they are geriatric or not. They really do require special attention to avoid potential complications and to minimize the risk of that functional deterioration.

It should be noted that medication management in patients with Parkinson's even as outpatients can get incredibly complicated, with complexity of dosing and timing, dietary issues, and the need to avoid many other types of medication. Parkinson's is a tough disease for patients and their families/caregivers. The complexities and fragmented nature of our healthcare system further exacerbate the difficulties they have. Recognizing these vulnerabilities when patients with Parkinson's are admitted to hospitals is a first step in preventing complications, minimizing hospital lengths of stay, and avoiding functional deterioration.

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