



St. John's Episcopal Hospital Medication Administration Project

December 2007

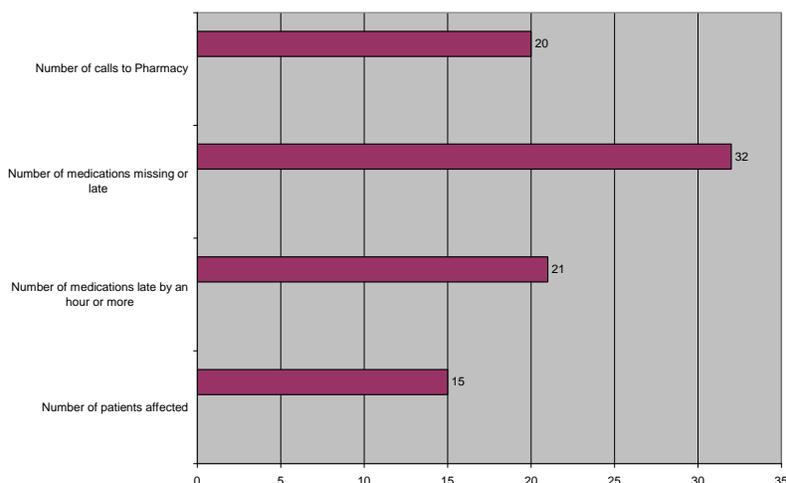
In 2006, the nursing administration and union leaders at St. John's Episcopal Hospital were given the opportunity to work on whatever they thought would make the biggest difference in nurse recruitment and retention. They decided they would focus on whatever the nursing staff identified as their biggest obstacle to delivering high-quality care to patients. A survey of the nursing staff came up with missing and late medications at the top of the list. The Pharmacy agreed to work together with the Nursing Department on a project to get the right medications to the right patient at the right time.

Identifying the Problem

To simplify the process, we decided to focus on just one unit, Tower 10, a medical-surgical floor. To get a better handle on where the system was breaking down, Tower 10 and Pharmacy staff collected data for two weeks to determine how often medications were missing or late, who is affected, and what's causing this problem.

The data showed that, on average, there were 32 missing or late medications a day on Tower 10, affecting 15 patients (out of a patient population of 42), requiring around 23 calls per day from the floor to the Pharmacy to remedy this situation. In the process, 21 medications were administered late by an hour or more every day, which constituted a patient safety violation. This number was much higher than what was being picked up by the normal reporting system.

Average Number of Missing and Late Medications per Day on Tower 10



We found that eight-eight (88) percent of the problem was with existing patients, not with new admissions -- which was different from what the team expected. The biggest problem we found was that many new medication orders were not being filled in time to be administered by 10 am. This was because so many new orders had to be filled during the first few hours of the day in the Pharmacy.

The data we collected showed that, during the day shift, most new orders were sent from the floor and filled by the Pharmacy by the end of the shift. However, during the evening shift, there were long delays in sending orders to the Pharmacy, and very few of these new orders were filled by the end of the shift. That made it necessary for the Pharmacy staff to scramble in the morning to give nurses what they needed, which made it necessary for nurses to scramble in the morning to give patients what they needed.

The constant phone calls from the floor and the running around required to replace missing medications distracted the Pharmacy staff from filling and checking cassettes for the next day, causing some medications to be left out of drawers, which was the second biggest problem we found. The need to then replace these missing medications created even more turmoil in the Pharmacy and on the floor.

We concluded that the key to fixing this problem was to change the system so that all the new orders didn't hit the Pharmacy all at once in the morning, but were sent and filled throughout the day and evening shifts instead. We expected that would reduce the amount of scrambling that goes on every morning both in the Pharmacy and on the floor.

Experimenting with Changes

In April, we made the following changes to address this problem:

- The clerk on Tower 10 started making a “sweep” of all new medication orders on the floor at 8 pm, then sent them down to the Pharmacy.
- The Pharmacy staff started updating their list at 9 pm and made sure all new orders were filled by the end of the shift and on the carts to be delivered the next morning.
- The Recovery Room nurses started sending all new medication orders directly to the Pharmacy, rather than sending them with the patient back to the floor.

In addition, the Pharmacy made the following changes:

- The workload of the staff was redistributed, so that nobody was overloaded with the heavy floors.
- Two Pharmacy staff started coming in earlier to help deal with the morning rush hour(s).
- The Pharmacy staff started printing out another interim list in the morning to catch any new orders that had come in since the evening before.

Data collected in early May showed that the patients with missing or late medications had fallen to an average of 8 per day on the day shift, down from the average of 11 per day recorded previously in October. In addition, most of the calls from the floor to the Pharmacy were for transfer patients, rather than existing patients, which meant that the changes had successfully addressed the needs of existing patients.

The team then turned its attention to transfers from the ER to the floor. Data collected on Tower 10 during July showed that medications were coming to the floor with patients transferred from the ER about half the time. Nursing staff in the ER were reminded of the need to send all medications with patients transferring from the ER to the floors.

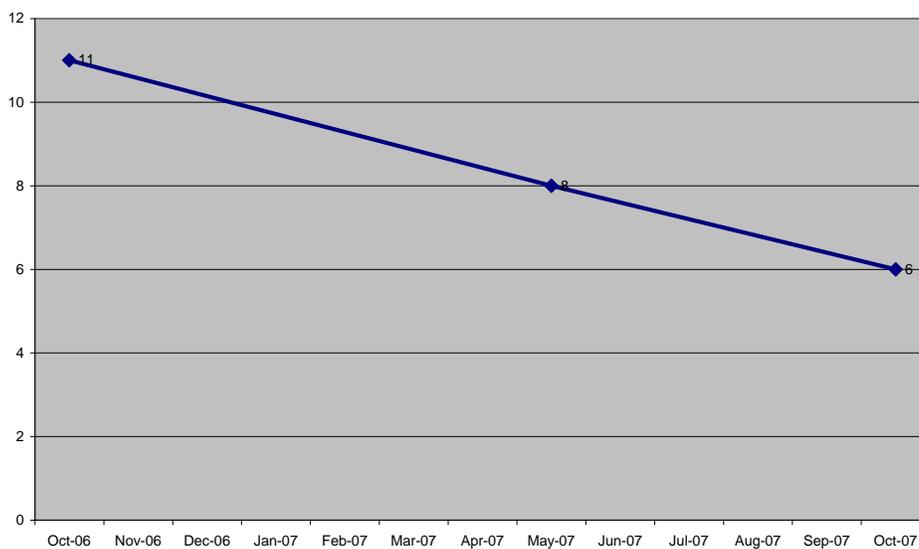
In August, the team met with a nurse and a nurse manager from the ER to explore what was getting in the way of having every medication arrive with every transfer from the ER every time. The group concluded that the lack of accurate patient room information was the biggest problem. To address that problem, the nurse

manager in the ER started sending the current grid/bed chart from the ER to the Pharmacy at 7am, 2:15pm, and 9pm. That gave the Pharmacy staff the up-to-date information they needed first thing in the morning, for the evening shift, and when they did their interim list at 9pm. To streamline this process even further, the Pharmacy later got access to an electronic version of the bed board used by admitting, giving them up-to-date information on each patient's location throughout the day.

In addition, Pharmacists were assigned to each of the floors to improve communication between the Pharmacy and those floors. And a Pharmacist started making rounds every day on every floor to identify any problems that were affecting patient care, and to educate the medical staff on Pharmacy guidelines to cut down on the number of interventions with physicians that were required. Any issues that came up during these rounds were to be communicated to the nursing leadership for resolution.

Data collected on Tower 10 and in the Pharmacy at the end of October showed that these additional changes had been effective, and that the changes made during the past year had been sustained. During the last week in October, there was an average of 6 patients with missing or late medications on the day shift. Of these, almost none were for transfers from the ER, or for transfers from the Recovery Room.

Average Number of Tower 10 Patients with Missing or Late Medications (Day Shift)



Analysis of these data showed that the problems that remained were smaller than the problems that had already been addressed. The main problems that remained were 1) missing meds for patient transfers between med-surg floors, 2) missing meds for patients transferred and for new orders written after the 8 pm sweep on the floor, 3) a glitch in the software that dropped a discontinued order at 12:05 am, even if it still needed to be administered later that morning, 4) orders that required intervention with physicians, and 5) individuals in the Pharmacy occasionally not following the processes already in place, or just simply making mistakes.

Lessons Learned

There were several lessons that were learned or confirmed in the course of this project that might be useful to others:

- It's very important to do a reality check on what people assume is the problem by gathering some data up front. Otherwise, people will end up focusing on the wrong problem, wasting a lot of time and resources. For example, at the beginning of this project, the team assumed that the patient population most affected by missing meds was new admissions, but that turned out not to be the case.
- There are benefits to working across departments and focusing on broken systems. At the outset of the project, there were strong suspicions among staff on the floor and in the Pharmacy that the other was to blame for the problems they were experiencing. By working together to address those problems, they were better able to see that the problems were the result of broken systems, not anonymous lazy or incompetent co-workers.
- It's hard to get nursing staff together to work on a project like this, especially when they are already stretched to the limit. We relied on the RN contract administrator to represent the nurses on the floor in meetings, and used a quick huddle on the floor if we needed to communicate with the rest of the staff. There were no regular staff meetings on the floor to use for planning and communication, but that would be one way to solve this problem.
- It's difficult to sustain progress with high levels of stress and turnover in the hospital. During the project, the Pharmacy was short two pharmacists for several weeks, and short one pharmacist for an even longer period, which caused a lot of turmoil. On the floor, a number of the nursing staff turned over during the project, including the manager. That churning, along with high levels of stress in general, made it hard for the nurses on the floor to appreciate the progress that had been made, even though it was significant.