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## Lessons Learned from the Implementation of Two Transitions of Care Programs

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Having had the unique opportunity to implement two Transitions of Care (TOC) programs, I am sharing lessons that I have learned. From 2011 to 2012, I was the pioneer postgraduate year two (PGY2) resident in Continuum of Care at Sharp Memorial Hospital (SMH) in San Diego, California. The PGY2 residency is supported by Touro University California College of Pharmacy. In October 2012, the Sharp HealthCare Continuum of Care Network was one of eight programs designated as a Best Practice in TOC by the American Society of Health-System Pharmacists and the American Pharmacists Association.<sup>1</sup> At the end of my PGY2, a cross-country move granted me the opportunity to establish the pharmacy component of the Care Transitions program at Frederick Memorial Hospital (FMH) in Frederick, Maryland in September 2012. The Care Transitions program was recently selected as a finalist for the Case In Point Platinum Awards, which recognize the most successful and innovative case management programs working to improve health care across the care continuum.<sup>2</sup>

Despite being thousands of miles apart, SMH and FMH have remarkable similarities. They are both not-for-profit community hospitals with approximately 300 beds. Both hospitals have decentralized pharmacists who are actively involved in the care of their patients, with clinical responsibilities that include pain management, antibiotic stewardship, pharmacokinetic consults, and warfarin management. Prior to the implementation of their respective TOC programs, neither hospital had pharmacists directly involved in the discharge process of general medicine patients. Although the two TOC programs have distinct components and are continuously evolving, I believe that some of these lessons may be applicable to TOC programs nationwide.

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**Lesson 1: Identify high-risk patients on admission rather than on discharge.** During the early stages of the TOC program at SMH, I received referrals on the day of discharge. In many of these cases, it was difficult and frustrating to provide discharge counseling since patients would state that they were “no longer taking” medications that were supposed to be “continued”. More often than not, the discharge medication list omitted home medications that never made it into the patient’s medical record.

An added layer of complexity occurred when there was a dosage adjustment of a presumed home medication secondary to the addition of a new medication. For example, a patient was newly started on amlodipine so the cardiologist appropriately adjusted the simvastatin dose from 40 mg to 20 mg. However, at discharge, I discovered that the patient was actually taking pravastatin at home, which subsequently required multiple conversations with the bedside nurse, hospitalist, and cardiologist. This was especially significant since the patient was admitted for congestive heart failure and thus would affect our hospital core measure data. More specifically, the discharge summary had to be edited in order to match the discharge instructions. If a complete medication history had been taken on admission, this would have been avoided.

The question of who is ultimately accountable for a patient’s pre-admission medication list remains unanswered for many hospitals. Regardless of whether a hospital has pharmacy technicians (SMH) or emergency department pharmacists (FMH) obtaining medication histories, I believe that all healthcare providers involved in the care of the patient have the responsibility of refining the medication list throughout the hospitalization. There are many reasons for inaccurate medication histories at the time of admission, such as delirium, intubation, altered mental status, or simply lack of recall by the patient. In addition, patients may use multiple pharmacies, and they may take medications differently from the labels on their medication bottles. Therefore, the first step that I take when I receive a referral is to review the patient’s pre-admission medication list.

In general, discharge planning begins at the point of admission, which is consistent with the findings of the High Risk Medication Team at Scott and White Memorial Hospital in Temple, Texas.<sup>3</sup> This includes identifying any medications that patients may have difficulty affording. For example, a FMH patient was started on dronedarone for atrial fibrillation, but the cardiologist was not aware that the patient did not have prescription drug coverage. I notified the cardiologist early on in the hospitalization so she still had adequate time to trial the patient on a different generic antiarrhythmic that the patient could afford. For patients who do have prescription drug coverage, early identification of medications that may require prior authorization is essential to ensure that patients are able to fill their discharge medications in a timely manner. This is especially important to determine on the weekdays when insurance companies are open.

Finally, discharge education ideally occurs early on during the hospitalization and is reinforced at discharge. This is especially true for high-risk medications, such as anticoagulants and insulin therapy. For patients who are newly initiated on warfarin, I attempt to educate them as soon as possible during their hospitalization and provide them with appropriate brochures to give them time to read over the information. The following day, I re-visit the patient and ask them to 'teach-back' what they learned the previous day and subsequently answer any questions they have. By the time of discharge, I am comfortable that they are at ease with their new medications when they go home.

**Lesson 2: Seven day Transitions of Care (TOC) pharmacist coverage is ideal.** This is ideal at both ends of the hospitalization: admission and discharge. For patients admitted on the weekends at FMH, this gives us an additional one to two days to solidify an accurate home medication list, especially with the aid of patients' community pharmacies, which are usually open on the weekends. It also provides us with the opportunity to begin medication education. Thus, in principle, patients admitted over the weekend would be able to retain more information and be more comfortable with their new medications by the time they are discharged on Monday. At discharge, patients are already barraged by a deluge of other information including disease state management and follow-up instructions. The weekends also allow more time for post-discharge follow-up phone calls and home visits, especially for patients who are unavailable on the weekdays.

In addition, at SMH, one of the primary outcomes measured is heart failure core measure 1: discharge instructions. Prior to the implementation of the TOC program, the core measure

was consistently in the 80<sup>th</sup> percentile. After the heart failure clinical nurse specialist and I started collaborating in December 2011, we saw an immediate increase into the 90<sup>th</sup> percentile, which has been stable post-implementation. However, the lack of TOC pharmacist coverage on the weekends is a major barrier in achieving 100 percent.

**Lesson 3: Establish a Med-to-Bed program.** Pharmacists from the Pharmacist Intervention for Low Literacy in Cardiovascular Disease (PILL-CVD) study recommended in-hospital filling of discharge prescriptions to improve the patient discharge process. The study pharmacists noted that some patients have difficulty filling prescriptions post-discharge.<sup>4</sup> Studies have shown that patients often delay filling their prescriptions post-discharge.<sup>5-7</sup> One study found that only 40% of patients filled their prescriptions on the day of discharge, 20% filled them 1 or 2 days later, 18% waited 3 to 9 days, and 22% had not filled their prescriptions by the time of the follow-up telephone call (median of 12 days).<sup>5</sup> Patient-reported barriers included lack of transportation, difficulty affording medications, and long wait times at the pharmacy.<sup>5</sup>

Although SMH does not have a discharge pharmacy, there are two pharmacies located within a few minutes from the hospital. Medical Center Pharmacy accepts County Medical Services insurance and provides free bedside and home delivery of medications. Sharp Rees-Stealy pharmacy is located on the same campus as SMH and is currently working on a similar bedside delivery service for SMH patients.

Since FMH also lacks a discharge pharmacy, in October 2012, FMH partnered with the local Walgreens pharmacy to establish the Walgreens Bedside Delivery program. A Walgreens pharmacy technician is on-site at FMH from 10:00 am to 6:30 pm Monday through Friday to facilitate the medication procurement process for patients interested in this service. The service delivers new prescription medications, over-the-counter medications, and any other items that patients request to ease the transition from hospital to home.

**Lesson 4: Know your community resources.** The preliminary results of the Iowa Continuity of Care (ICOC) study found that only 48 percent of the recommendations made by the pharmacy case managers (PCMs) were accepted by inpatient physicians.<sup>8</sup> The PCMs noted that the inpatient physicians were often unwilling to change chronic medication therapy since patients would be discharged to their primary care physicians (PCPs).<sup>8</sup> Since both SMH and FMH have hospitalists, my experience is similar to that of the PCMs in the study. When I make recommendations that are declined

by the hospitalists, I subsequently communicate them to patients' PCPs at discharge via fax or telephone call, depending on the urgency of the issues.

In the ideal continuum of care, there would be ambulatory care pharmacists working with PCPs to optimize chronic medication therapy. In certain cases, I have been able to directly communicate medication recommendations and issues to ambulatory care pharmacists who subsequently follow-up with patients post-discharge. Both medical groups at SMH employ pharmacist-run clinics including anticoagulation, lipids, medication refill, and medication therapy management; these ambulatory care pharmacists have been an incredible resource to the TOC program at SMH.

At FMH, we are currently establishing key contacts at primary care offices around the county. For example, a 73-year-old male patient was admitted for altered mental status and fall that was believed to be medication-related. The patient lived alone and could not recall the names of most of his medications. Although we obtained a copy of the patient's pharmacy claims from Fort Detrick, when interviewing the patient, it was clear that he was not taking his medications as labeled on the bottles. The hospitalist thought that the main culprit was the patient's scheduled morphine sulfate extended-release 60 mg by mouth every 8 hours. Thus, at discharge, the hospitalist simply recommended a dosage decrease to 30 mg by mouth every 8 hours and to follow-up with the PCP.

However, the patient stated that he only took the morphine as needed and sometimes he would split the tablets in half. The medication list also had insulin glargine 70 units daily, insulin aspart sliding scale, and glipizide 20 mg by mouth twice daily, which was alarming given that the patient had occasional hypoglycemic episodes at home. Finally, previous FMH records indicated that the patient was on atenolol 100 mg twice daily. During the hospitalization, the dosage of atenolol was decreased to 50 mg twice daily secondary to bradycardia. Given the complexity of his medication regimen, we were concerned about how the patient was going to manage his medications post-discharge.

During a post-discharge home visit, we discovered that he had an appointment with an ambulatory care pharmacist at Fort Detrick. We immediately called the ambulatory care pharmacist to hand-off the unresolved medication issues. The ambulatory care pharmacist was able to work with the patient and the PCP to optimize the patient's pain management, diabetic regimen, and blood pressure control. The patient has not been readmitted to FMH since.

Another helpful community resource is the local Department of Aging. Frederick County has a robust Department of Aging with over 100 pages in its directory of resources, which range from transportation services to housing options to financial assistance. The department also offers monthly Medicare workshops as well as free individual Medicare Part D consultations during open enrollment. One of the available medication resources is the Frederick Community Action Agency's Medbank program, which helps patients obtain unaffordable prescription medications by applying for patient assistance programs. Similarly, SMH has three pharmacy technicians who coordinate the patient assistance program system-wide (four acute care hospitals and three specialty hospitals); they aid unfunded and underfunded patients apply for patient assistance programs. In fiscal year 2012, they assisted over 2,000 outpatients and saved the system over \$700,000 in medication costs.

**Lesson 5: Work to improve the discharge medication list.** A common complaint from patients is how confusing the discharge medication list is. One study at Yale-New Haven Hospital evaluated patients' understanding of discharge medication regimen via telephone interview within one week post-discharge.<sup>9</sup> The authors found that patients had no understanding of 69.3% medications with dose changes, 81.6% of stopped medications, and 62% of new medications even though patients were free to consult their discharge instructions or any other documentation during the interview.<sup>9</sup>

The confusion generated by the discharge medication lists extends to healthcare providers, such as SMH and FMH nurses, who have commented on the difficulty in understanding the output of the medication lists generated by the electronic health record. This is especially concerning to hear given that bedside nurses are responsible for providing discharge counseling in many hospitals nationwide. While SMH uses Cerner and FMH uses Meditech, both hospitals are diligently working to improve their discharge medication reconciliation processes as well as the output of the discharge medication lists. SMH has three separate workgroups focusing on admission medication reconciliation, transfer between units, and discharge medication reconciliation. I was part of the discharge medication reconciliation workgroup, which met approximately once a month. I prioritized these meetings because not only was it an opportunity to make an impact system-wide but also because I was one of the few in the workgroup, who saw patients on a daily basis and was actively using the discharge medication lists. At FMH, we are constantly communicating with our informatics pharmacist as we devise ways to

enhance patient education and minimize medication errors. Examples include correcting misspellings in the drug dictionary, entering default dosages for commonly prescribed inhalers, and adding medications to the drug dictionary so that they are recognized by the electronic health record.

**Looking ahead.** With the enactment of the Affordable Care Act, the opportunities for pharmacist involvement in TOC continue to expand.<sup>10</sup> At FMH, short-term goals include strengthening our relationship with local home health care agencies and following patients who are transitioning from hospital to skilled nursing facilities. A long-term goal is establishing our own primary care clinic with a multidisciplinary approach to care. Driven by the same purpose of improving patient quality of care, our TOC team will continue to dream big.

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