Clinical Note

Transitional Care Units: Expanding the Role of Pharmacists Providing Patient Care

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OBJECTIVE: To describe two innovative practice models that expand pharmacy services within a nursing facility's transitional care unit (TCU) to meet the needs of patients transitioning to subacute or community care.

SETTING: TCU in a hospital-based vs. a community-based facility.

PRACTICE DESCRIPTION: The two TCUs involved in these practices differ in that one is hospital-owned and the other is community-based and run by a nonprofit organization. Patients involved in the models are those who have been admitted to the TCU from a hospital and will eventually return home to the community.

PRACTICE INNOVATION: Pharmacy services beyond the federally required, monthly drug regimen review are described, including pharmacist-conducted medication reconciliation, which identifies the drugs the patient is taking on admission and those prescribed before discharge from the TCU. Post-TCU discharge follow-up is also provided via telephone call or home visit.

MAIN OUTCOME MEASUREMENTS: Description of practice models.

RESULTS: Timely medication reconciliation and review on TCU admission is key to safe medication use during transitions of care. Incorporating pharmacy students and residents can promote awareness of the service. Partnerships with health systems and colleges or schools of pharmacy can provide financial support of these innovative practice models.

CONCLUSION: Pharmacist-driven medication reconciliation and review can improve medication safety across transitions of care involving TCUs. Research is needed to evaluate the impact of these models on outcomes before they are replicated.

KEY WORDS: Hospital, Medication reconciliation, Nursing facility, Transitional care unit, Transitions of care.

ABBREVIATIONS: APPE = Advanced pharmacy practice experience, DRR = Drug regimen review, EHR = Electronic health record, MTM = Medication therapy management, TCU = Transitional care unit.


Background

The nursing facility is a common discharge destination for patients leaving the hospital who may not be ready to return home because of chronic or acute clinical conditions. An analysis of National Hospital Discharge Survey data from 1996 to 2010 indicated that the proportion of hospitalizations resulting in admission to post-acute care facilities (including nursing and rehabilitation facilities) increased from 9.2% to 13.7%—a 49% relative increase.1 Nursing facilities provide care, including nursing and therapy services, for people who are not able to care for themselves at home. The care provided in nursing facilities is differentiated into long-term care or care provided to patients whose permanent residence is the nursing facility, and short-term care, or care provided to patients who will return to the community. Transitional care units (TCUs) of nursing facilities, sometimes referred to as “short-stay units,” “short-term rehabilitation units,” or “subacute rehabilitation units,” are beneficial for patients who need rehabilitation prior to returning to their homes. The medication-related needs of TCU patients are provided by a consultant pharmacist who conducts federally mandated drug regimen reviews (DRRs) every 30 days. DRR focuses on the evaluation of medication indication, effectiveness, safety, monitoring, and cost, among other aspects.2 (It is also required on admission to a facility or change in status.)

Although the components of DRR are important, they may not address all of a TCU patient's medication-related needs as the patient moves through transitions of care, e.g., discharge from a hospital to a TCU and discharge from a TCU to home. Medication safety may be compromised during these transitions because of medication discrepancies and the lack of patient education about medications provided on hospital and TCU discharge.3 A study conducted by Tija and colleagues estimated that 21.3% of medications reviewed upon admission to a nursing facility had a medication discrepancy identified by a nurse practitioner.4 Sinvani et al. investigated medication discrepancies occurring in the same cohort of patients as they experienced three transitions of care: hospital admission to discharge.
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(transition 1), hospital discharge to TCU admission (transition 2), and TCU admission to discharge to home (transition 3). Among the 44 patients studied, the average number of medication discrepancies per patient during transitions noted above was 8.1, 7.2, and 7.6, respectively. These discrepancies were identified by a pharmacist and physician. It is uncertain whether a conventional DRR—which focuses on the evaluation of medication indication, effectiveness, safety, monitoring, and cost, among other aspects—would identify discrepancies during these transitions of care. First, components of the DRR may not include a comprehensive reconciliation of medications ordered at the TCU and medications ordered before admission to a TCU. Second, there is variability in the information to which a consultant pharmacist has access when conducting a DRR for a TCU patient. For example, the pharmacist may only have access to the TCU medical record and limited documentation from the preceding hospitalization. Lack of complete medical history can be a barrier to reviewing medications of a TCU patient. Finally, a timely medication review at each transition of care is key to ensuring medication safety, while DRRs may not occur soon after a patient is admitted to the TCU. In some cases, the patient may have discharged from the TCU before the DRR is completed.

Innovative practice models expanding the role of the pharmacist are needed to address the medication-related needs of TCU patients as they move through transitions of care. Literature describing such practices is limited and complex, which may be the result, in part, of the variety of terms used to describe TCUs, such as nursing facilities, short-stay units, subacute care units, subacute rehabilitation units, and extended care hospitals. Some transitions-of-care initiatives specific to TCUs described in the literature have not included a pharmacist. However, Boord et al. described a model where pharmacists reconciled medications upon admission to, and discharge from, the TCU. A systematic review of pharmacist-provided medication reconciliation during transitions to and from long-term care facilities, including TCUs, concluded that a clinical pharmacist was able to provide useful medication reconciliation interventions. Medication therapy management (MTM), medical care provided by pharmacists to improve therapeutic outcomes, has also been employed in transitions of care—in an extended-care hospital for patients prior to discharge and after discharge from a subacute rehabilitation facility. The objective of this article is to describe two pharmacist-driven innovative models of care that address the medication-related needs of TCU patients as they move through transitions of care, including admission to and discharge from the TCU. A summary of the characteristics of both practice models is described in Table 1.

Innovative Models of Care

Model 1: Intervening Upon Admission

A hospital-owned nursing facility with approximately 110 TCU beds and 45 long-term care beds served by an academic pharmacist, employed by a school of pharmacy, has been incorporating advanced pharmacy practice experience (APPE) students in the provision of pharmaceutical care and transition-of-care services. The pharmacy team consists of this academic pharmacist and APPE students. The services provided by the pharmacy team exist outside of, and in conjunction with, those provided by a consultant pharmacist to evaluate drug therapy. In this case, the consultant pharmacist also manages the dispensing pharmacy for the nursing facility and the hospital's outpatient and employee population.

Daily tasks of the pharmacy team include identifying medication-related problems for each new TCU patient admission. The team performs medication reconciliation by comparing the hospital discharge medication list to the TCU list within 24 to 72 hours of admission. When the academic pharmacist is not accompanied by APPE students, medication reconciliation efforts are targeted toward recently admitted patients and those with conditions at high risk for readmission, including heart failure, pneumonia, and chronic obstructive pulmonary disease. Medication reconciliation assists and expedites the federally mandated 28-day DRR performed by the consultant pharmacist. Recommendations are communicated to the interprofessional team in-person or via a written pharmacy communication form. This information is shared with the consultant pharmacist.
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Table 1. Comparison of TCU Practice Models and Pharmacists’ Roles

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Model 1</th>
<th>Model 2</th>
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<tbody>
<tr>
<td>Site description</td>
<td>Hospital-owned facility</td>
<td>Community-based, nonprofit facility</td>
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<tr>
<td></td>
<td>Beds: 110 TCU, 45 long-term care</td>
<td>Beds: 60 TCU, 208 long-term care</td>
</tr>
<tr>
<td>Funding for pharmacists</td>
<td>Full-time pharmacist, faculty-funded by academic institution</td>
<td>Half-time pharmacist, funded by health system</td>
</tr>
<tr>
<td>Medication reconciliation</td>
<td>Performed within 24-72 hours of admission to TCU</td>
<td>Performed within 72 hours of admission to TCU and 24-48 hours prior to discharge from TCU</td>
</tr>
<tr>
<td>Other services</td>
<td>Discharge counseling, in-service education, drug information requests, on-demand medication regimen reviews</td>
<td>Patient counseling upon admission and prior to discharge, follow-up telephone, or home visit</td>
</tr>
</tbody>
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Abbreviation: TCU = Transitional care unit.

to ensure fluid communication of recommended interventions and opportunities for follow-up. In the absence of the pharmacy team, a review of the medication regimen is conducted by the nursing staff, the pharmacy staff (prior to dispensing), and the consultant pharmacist during the monthly DRR.

The pharmacy team is also readily available to answer drug-information questions, perform on-demand medication reviews, and investigate patient or nursing concerns related to medications. Though the consultant and staff pharmacists at the dispensing pharmacy are available for questions, having a pharmacist present in the TCU provides direct, face-to-face communication and interaction with real-time solutions. Many times, this pharmacist serves as a liaison between the facility and the dispensing pharmacy to help answer questions or suggest alternatives in case a medication is not available. The academic pharmacist also attends family meetings, if possible, with the interprofessional team. Finally, the academic pharmacist participates in discharge counseling for patients returning to the community and reviews adherence strategies the patient may implement at home.

The involvement of APPE students has increased awareness of pharmacy services throughout the facility. Students participate in all functions carried out by the academic pharmacist and provide inservice presentations and undertake special projects to help reduce costs or evaluate nursing and prescribing practices. Examples include evaluating vancomycin dosing and monitoring practices, adherence to hyperglycemia/hypoglycemia protocols, tracking delinquent abnormal involuntary movement scale assessments, and monitoring of anticoagulation practices.

The addition of the pharmacy team has resulted in many medication recommendations with a high acceptability rate. Most of the problems identified include missing medications between transitions, inappropriate prescribing (e.g., wrong dose, wrong frequency), and errors of omission (e.g., vitamin D and calcium missing from a patient with a hip fracture and diagnosis of osteoporosis). Obtaining a better system to track these interventions and quantifying them would be prudent for financial justification of a pharmacist position in this setting.

Model 2: Following Patients All the Way Home

A second model of care describes a practice located in a community-based nonprofit nursing facility consisting of 60 TCU beds and 208 long-term care beds. The facility employs nursing and therapy staff, but all other providers, including physicians and nurse practitioners, come from
health systems that have patients residing in the facility. The contracted long-term care pharmacy provides a consultant pharmacist who provides DRR every 28 days. To improve transitions of care for TCU patients, an ambulatory care pharmacist from the health system was deployed to the TCU. The health system supports the salary of this half-time pharmacist. The pharmacist leads a team that provides medication management services to patients on admission, before discharge, and after discharge from the TCU.

Similar to the model described above, the pharmacist reconciles medications for patients within 72 hours of admission to the TCU to ensure that the TCU admission medication list reflects the discharge plan devised by hospital providers. In addition to reviewing the hospital and TCU medical charts, the pharmacist meets with the patient and caregiver, if available, to review medications and educate them on medication changes made during the hospitalization. Using information obtained from the chart and the patient, the pharmacist collaborates with the health system nurse practitioner and TCU nurses to devise a medication care plan for the patient. Finally, the pharmacist documents the care plan, which includes an accurate medication list, in the health system electronic health record (EHR). A key component of the pharmacist's documentation is an outline of medication changes made during the hospitalization.

The pharmacist follows a similar process before the patient's discharge from the TCU. Approximately one to two days before a patient's discharge date, the pharmacist reviews the health system and TCU EHRs to evaluate medications and ensure that any medication changes occurring during the TCU stay were intentional and consistent with clinical care needs. The pharmacist meets with the patient and caregiver to review all medications and discuss changes that occurred during the TCU stay. Additionally, strategies to ensure medication adherence post-TCU discharge, such as having a home care nurse or using a pillbox to organize medications, are also discussed. At the end of the visit, the pharmacist and patient agree upon a date and time at which the pharmacist may contact the patient via phone to follow up on the TCU discharge. In some cases, when a number of medication changes are made, the pharmacist will follow up with the patient in his or her home. Similar to collaboration that occurs at the time of admission, the pharmacist works with the nurse practitioner, TCU nurse, and TCU social worker to outline a medication regimen for discharge. The pharmacist reconciles medication lists in the EHRs of the health system and the TCU and summarizes the medication review in the health system EHR.

TCU discharge follow-up occurs within one week of discharge. During the follow-up phone call, the pharmacist reviews medications and reinforces the discharge plan of care. Medication discrepancies are discussed with the patient and resolved, and the pharmacist ensures that the patient was able to obtain the correct medications on discharge. If a home visit is conducted, any discontinued medications are disposed of with the patient's permission. Adherence to medications is discussed, and the pharmacist ensures that the patient has an accurate medication list. The pharmacist documents a summary of the follow-up in the health system's EHR, ensures the accuracy of the medication list, and communicates any recommendations to the patient's primary care provider via the EHR or by fax. Most follow-up is conducted by phone, with encounters lasting no more than 15 minutes. Home visits qualifying as MTM visits are billed to the patient's insurance.

Challenges that were faced in implementing this model relate to documentation of the patient's medication lists. The TCU EHR and health system EHR both document a medication list, and ensuring that both of these lists are accurate is difficult. Typical interventions made by the pharmacist on admission to the TCU include recommending laboratory monitoring and appropriate titration of medications that were implemented during the hospital stay. Typical interventions made by the pharmacist upon TCU discharge include educating patients of their current medications when they return home and ensuring that home care agencies have an accurate medication list. The health system is conducting an analysis of the impact of this practice model on hospitalizations and emergency room visits 30 days after TCU discharge to explore the value of this model.

APPE students and pharmacy residents are an
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integral part of the practice model. These learners review medications at each transition point and document care in the EHR. Students meet with patients and family members, contact patients for follow-up, and conduct home visits with the pharmacist. The pharmacist is always present during home visits; however, supervision of other tasks depends on the learner’s skill level.

Conclusion
Pharmacists are essential in meeting the medication-related needs of TCU patients as they transition in and out of TCUs. Because DRRs may not meet the needs of TCU patients moving through transitions of care, pharmacist-driven innovative practice models are needed. Before the practice models described here may be replicated, their impact must be demonstrated by well-designed studies. Studies may consider hospitalization and emergency department rates post-TCU discharge, medication errors detected, patient medication adherence, and patient/caregiver self-efficacy to manage medications. The models described here are informative, and similar models need to demonstrate the ability to generate substantial revenue or cost savings. As a result, their value must be demonstrated so that health systems, nursing facilities, or colleges and schools of pharmacy financially commit to having pharmacists in these types of roles. Nonetheless, these models highlight potential opportunities for expansion of pharmacy services in TCUs and collaborations with health systems and academic institutions.

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