

Improved Transitional Care Through an Innovative Hospitalist Model: Expanding Clinician Practice From Acute to Subacute Care

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Hospitalist physician rotations between acute inpatient hospitals and subacute care facilities with dedicated time in each environment may foster quality improvement and educational opportunities.

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Care transitions between hospitals and skilled nursing facilities (SNFs) are a vulnerable time for patients. The current health care climate of decreasing hospital length of stay, readmission penalties, and increasing patient complexity has made hospital care transitions an important safety concern. Suboptimal transitions across clinical settings can result in adverse events, inadequately controlled comorbidities, deficient patient and caregiver preparation for discharge, medication errors, relocation stress, and overall increased morbidity and mortality.^{1,2} Such care transitions also may generate unnecessary spending, including avoidable readmissions, emergency department utilization, and duplicative laboratory and imaging studies. Approximately 23% of patients admitted to SNFs are readmitted to acute care hospitals within 30 days, and these patients have increased mortality rates in risk-adjusted analyses.^{3,4}

Compounding the magnitude of this risk and vulnerability is the significant growth in the number of patients discharged to SNFs over the past 30 years. In 2013, more than 20% of Medicare patients discharged from acute care hospitals were destined for SNFs.^{5,6} Paradoxically, despite the increasing need for SNF providers, there is a shortage of clinicians with training in geriatrics or nursing home care.⁷ The result is a growing need to identify organizational systems to optimize physician practice in these settings, enhance

quality of care, especially around transitions, and increase educational training opportunities in SNFs for future practitioners.

Many SNFs today are staffed by physicians and other licensed clinicians whose exclusive practice location is the nursing facility or possibly several such facilities. This prevailing model of care can isolate the physicians, depriving them of interaction with clinicians in other specialties, and can contribute to burn-out.⁸ This model does not lend itself to academic scholarship, quality improvement (QI), and student or resident training, as each of these endeavors depends on interprofessional collaboration as well as access to an academic medical center with additional resources.⁹

Few studies have described innovative hospitalist rotation models from acute to subacute care. The Cleveland Clinic implemented the Connected Care model where hospital-employed physicians and advanced practice professionals integrated into post-acute care and reduced the 30-day hospital readmission rate from SNFs from 28% to 22%.¹⁰ Goth and colleagues performed a comparative effectiveness trial between a postacute care hospitalist (PACH) model and a community-based physician model of nursing home care. They found that the institution of a PACH model in a nursing home was associated with a significant increase in laboratory costs, nonsignificant reduction in medication errors and pharmacy costs, and no improvement in fall rates.¹¹ The

TABLE 1 Characteristics and Distribution of Clinician Service Time

Clinician	Characteristics			Service Time, Mo ^a		
	> 10 Years in Practice	Academic Rank	Advanced Training	Transitional Care Unit	Medical Service	Administration/Education/Research
Hospitalist 1	No	Instructor	-	7.5	2	2.5
Hospitalist 2	No	Instructor	-	7.5	2	2.5
Hospitalist 3	No	Instructor	General internal medicine fellowship	5	2	5
Hospitalist 4	Yes	Instructor	Geriatrics and palliative care fellowship	3	1	8
Hospitalist 5	No	Instructor	-	1	7	4
Hospitalist 6	Yes	Associate professor	General internal medicine fellowship	1	1	10
SNF Physician 1	Yes	-	-	12	0	0
SNF Physician 2	Yes	Lecturer	-	12	0	0
PA 1	Yes	Instructor	-	12	0	0
PA 2	Yes	-	-	12	0	0

Abbreviations: PA, physician assistant; SNF, skilled nursing facility.

^aAnnual leave /paid time-off (vacation) not accounted for.

conclusion was that the PACH model may lead to greater clinician involvement and that the potential decrease in pharmacy costs and medications errors may offset the costs associated with additional laboratory testing. Overall, there has been a lack of studies on the impact of these hospitalist rotation models from acute to subacute care on educational programs, QI activities, and the interprofessional environment.

To achieve a system in which physicians in a SNF can excel in these areas, Veterans Affairs Boston Healthcare System (VABHS) adopted a staffing model in which academic hospitalist physicians rotate between the inpatient hospital and subacute settings. This report describes the model structure, the varying roles of the physicians, and early indicators of its positive effects on educational programs, QI activities, and the interprofessional environment.

METHODS

The VABHS consists of a 159-bed acute care hospital in West Roxbury, Massachusetts;

and a 110-bed SNF in Brockton, Massachusetts, with 3 units: a 65-bed transitional care unit (TCU), a 30-bed long-term care unit, and a 15-bed palliative care/hospice unit. The majority of patients admitted to the SNF are transferred from the acute care hospital in West Roxbury and other regional hospitals. Prior to 2015, the TCU was staffed with full-time clinicians who exclusively practiced in the SNF.

In the new staffing model, 6 hospitalist physicians divide their clinical time between the acute care hospital's inpatient medical service and the TCU. The hospitalists come from varied backgrounds in terms of years in practice and advanced training (Table 1). On the inpatient medical service, hospitalists have teaching and supervisory responsibilities for internal medicine residents from 3 affiliated medical residency programs and medical students from 2 medical schools. On the TCU service, hospitalists provide direct patient care and have supervisory teaching roles for psychiatry residents on general medicine rotations,

TABLE 2 Examples of Quality Improvement/System Redesign Projects

Problems	Actions	Outcomes
Inefficient review process limits access to SNF care	<ul style="list-style-type: none"> • Admission liaison role • Bed flow tracking system • Standardized screening process • Daily huddles • Replaced 16 possible EHR request forms with a single template 	<ul style="list-style-type: none"> • Decreased median time to admission from 3.3 d in the baseline period to 2.3 d
Chaotic and unstandardized handoff process for patients admitted to SNF	<ul style="list-style-type: none"> • Performed Healthcare Failure Mode and Effect Analysis (HFMEA) 	<ul style="list-style-type: none"> • Increased verbal (warm) handoffs to > 90% • Standardized the process and content for oral and written handoff execution
High rates of medication discrepancies on admission and discharge for SNF patients	<ul style="list-style-type: none"> • Study site in the Multi-Center Medication Reconciliation Quality Improvement Study 2 (MARQUIS2) • Standardized practices for medication reconciliation • Created new EHR discharge template for medication reconciliation • Instituted a pharmacist-led high-risk medication reconciliation 	<ul style="list-style-type: none"> • Decreased medication reconciliation discrepancies • Dedicated pharmacy FTE for medication reconciliation • Improved provider satisfaction with medication reconciliation
Inadequate daily communication between interprofessional staff	<ul style="list-style-type: none"> • Initiated daily unit-based bed huddle for interprofessional staff to review all patients 	<ul style="list-style-type: none"> • Improved efficiency, communication, and staff satisfaction

Abbreviations: EHR, electronic health record; FTE, full-time equivalent; SNF, skilled nursing facility.

as well as physician assistant students.

The amount of nonclinical (protected) time and clinical time on the acute inpatient service and the TCU varies for each physician. For example, a physician serves as principal investigator for several major research grants and has a hospital-wide administrative leadership role; as a result, the principal investigator has fewer months of clinical responsibility. Physicians are expected to use the protected time for scholarship, educational program development and teaching, QI, and administrative responsibilities. The VABHS leadership determines the amount of protected time based on individualized benchmarks for research, education, and administrative responsibilities that follow VA national and local institutional guidelines. These metrics and time allocations are negotiated at the time of recruitment and then are reviewed annually.

The TCU also is staffed with 4 full-time clinicians (2 physicians and 2 physician assistants) who provide additional conti-

nunity of care. The new hospitalist staffing model only required an approximate 10% increase in TCU clinical staffing full-time equivalents. Patients and admissions are divided equally among clinicians on service (census per clinician 12-15 patients), with redistribution of patients at times of transition from clinical to nonclinical time. Blocks of clinical time are scheduled for greater than 2 weeks at a time to preserve continuity. In addition, the new staffing model allocates assignment of clinical responsibilities that allows for clinicians to take leave without resultant shortages in clinical coverage.

To facilitate communication among physicians serving in the acute inpatient facility and the TCU, leaders of both of these programs meet monthly and ad hoc to review the transitions of care between the 2 settings. The description of this model and its assessment have been reviewed and deemed exempt from oversight by the VA Boston Healthcare System Research and Development Committee.

RESULTS

Since the implementation of this staffing model in 2015, the system has grown considerably in the breadth and depth of educational programming, QI, and systems redesign in the TCU and, more broadly, in the SNF. The TCU, which previously had limited training opportunities, has experienced marked expansion of educational offerings. It is now a site for core general medicine rotations for first-year psychiatry residents and physician assistant students. The TCU also has expanded as a clinical site for transitions-in-care internal medicine resident curricula and electives, as well as a clinical site for a geriatrics fellowship.

A hospitalist developed and implemented a 4-week interprofessional curriculum for all clinical trainees and students, which occurs continuously. The curriculum includes a monthly academic conference and 12 didactic lectures and is taught by 16 interprofessional faculty from the TCU and the Palliative Care/Hospice Unit, including medicine, geriatric and palliative care physicians, physician assistants, social workers, physical and occupational therapists, pharmacists, and a geriatric psychologist. The goal of the curriculum is to provide learners the knowledge, attitudes, and skills necessary to perform effective, efficient, and safe transfers between clinical settings as well as education in transitional care. In addition, using a team of interprofessional faculty, the curriculum develops the interprofessional competencies of teamwork and communication. The curriculum also has provided a significant opportunity for interprofessional collaboration among faculty who have volunteered their teaching time in the development and teaching of the curriculum, with potential for improved clinical staff knowledge of other disciplines.

Quality improvement and system redesign projects in care transitions also have expanded (Table 2). Recent initiatives include the redesign of the admissions screening process, which shortened the average review time from 3 days to 2 days, and a “safe hand-off” healthcare failure mode and effect analysis (HFMEA).¹² This HFMEA focused on improving the transfer process for veterans moving from the acute inpatient setting to

TABLE 3 Convenience Sample Survey Respondents

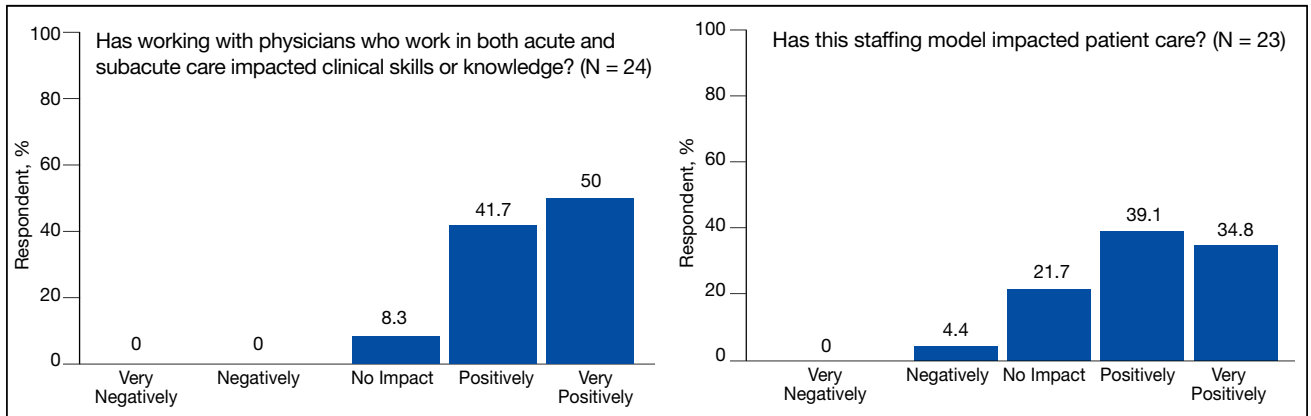
Position in Transition Care Unit	Respondents, No.	Total Possible Respondents, No.	Response Rate, %
Hospitalist	5	6	83
SNF physician	1	2	50
Physician assistant	2	2	100
Nurse manager	3	4	75
Physical therapist	2	2	100
Occupational therapist	2	2	100
Psychologist	1	1	100
Pharmacist	1	1	100
Dietician	1	2	50
Social worker	4	4	100
Administrative staff	2	2	100
Total	24	28	86

Abbreviation: SNF, skilled nursing facility.

the TCU. Interprofessional team members from both the acute care hospital and SNF staff collaborated to standardize the process and content for both oral and written hand-off execution. Another example of the robust QI activities recently undertaken in this setting is the establishment of the TCU as a participant site in a Multi-Center Medication Reconciliation Quality Improvement Study 2 (MARQUIS2), an Agency for Healthcare Research and Quality-funded study in medication reconciliation.¹³ The study includes 18 sites nationally; the TCU is the only non-hospital and transitional care site. Preliminary results show clinically meaningful reductions in unintentional medication discrepancies in this setting.

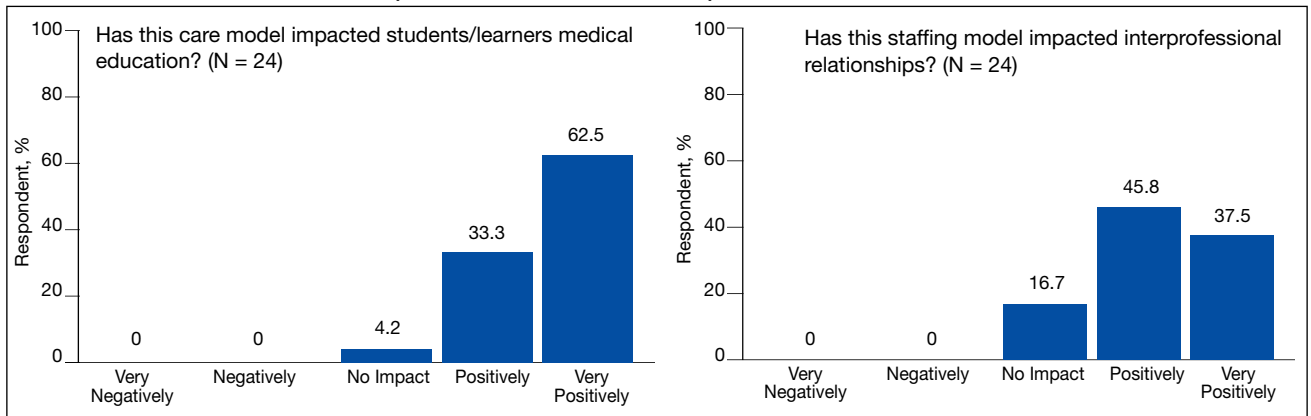
Early assessment indicates that the new staffing model is having positive effects on the clinical environment of the TCU. A survey was conducted of a convenience sample of all physicians, nurse managers, social workers, and other members of the clinical team in the TCU (N=24)(Table 3), with response categories ranging on a Likert scale from 1 (very negative) to 5 (very positive). Respondents indicated that the

FIGURE 1 Medical Knowledge and Patient Care^a



^aOverall response rate: 86%.

FIGURE 2 Education and Interprofessional Relationships^a



^aOverall response rate: 86%.

staffing model was having positive influences on clinical skills and knowledge (4.4) and patient care (4.0). In addition, respondents reported positive impact on interprofessional relationships (4.2), development of education opportunities (4.6), and high overall satisfaction with the staffing model (4.1). Approximately 4 of 5 respondents (82%) expressed agreement with the notion of replicating this staffing model in other health care systems (Figures 1, 2 and 3). The subset of responses, including only hospitalists found similar favorable results.

Although not rigorously analyzed using qualitative research methods, comments from respondents have consistently indicated that this staffing model increases the transfer of clinical and logistical knowledge among staff members working in the acute inpatient facility and the TCU. This cross-pollination is believed to improve the safety of care for

patients transferring between the 2 settings, as both the hospital and the SNF now have physicians with a detailed understanding of each setting's capabilities and needs and disseminate this information to other clinicians. Many respondents have noted that the new model has fostered collaboration across care spectrums, thereby improving interdisciplinary learning, communication, and teamwork among clinicians as well as learners.

DISCUSSION

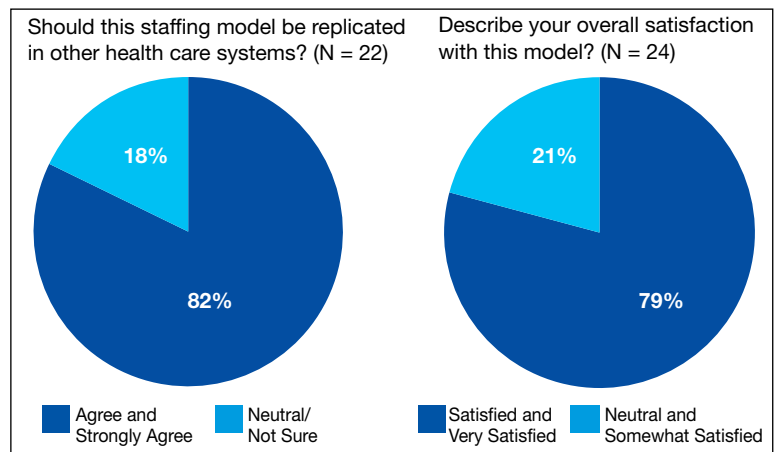
With greater numbers of increasingly complex patients transitioning from the hospital to SNF, health care systems need to expand the capacity of their skilled nursing systems, not only to provide clinical care, but also to support QI and medical education. The VABHS developed a physician staffing model with the goal of enriching physician practice and enhancing QI and educational

opportunities in its SNF. The model offers an opportunity to improve transitions in care as physicians gain a greater knowledge of both the hospital and subacute clinical settings. This hospitalist rotation model may improve the knowledge necessary for caring for patients moving across care settings, as well as improve communication between settings. It also has served as a foundation for systematic innovation in QI and education at this institution. Clinical staff in the transitional care setting have reported positive effects of this model on clinical skills and patient care, educational opportunities, as well as a desire for replication in other health care systems.

The potential generalizability of this model requires careful consideration. The VABHS is a tertiary care integrated health care system, enabling physicians to work in multiple clinical settings. Other settings may not have the staffing or clinical volume to sustain such a model. In addition, this model may increase discontinuity in patient care as hospitalists move between acute and subacute settings and nonclinical roles. This loss of continuity may be a greater concern in the SNF setting, as the inpatient hospitalist model generally involves high provider turnover as shift work. Our survey included nurse managers, and not floor nurses due to survey administration limitations, and feedback may not have captured a comprehensive view from CLC staff. Moreover, some of the perceived positive impacts also may be related to professional and personal attributes of the physicians rather than the actual model of care. In addition, the survey response rate was 86%. However, the nature of the improvement work (focused on care transitions) and educational opportunities (interprofessional care) would likely not occur had the physicians been based in one clinical setting.

Other new physician staffing models have been designed to improve the continuity between the hospital, subacute, and outpatient settings. For example, the University of Chicago Comprehensive Care model pairs patients with trained hospitalists who provide both inpatient and outpatient care, thereby optimizing continuity between these settings.¹⁴ At CareMore Health System, high-risk patients also are paired with hospitalists,

FIGURE 3 Satisfaction With Rotational Model^a



^aOverall response rate: 86%.

referred to as “extensivists,” who lead care teams that follow patients between settings and provide acute, postacute, and outpatient care.¹⁵ In these models, a single physician takes responsibility for the patient throughout transitions of care and through various care settings. Both models have shown reduction in hospital readmissions. One concern with such models is that the treatment teams need to coexist in the various settings of care, and the ability to impact and create systematic change within each environment is limited. This may limit QI, educational opportunities, and system level impact within each environment of care.

In comparison, the “transitionalist” model proposed here features hospitalist physicians rotating between the acute inpatient hospital and subacute care with dedicated time in each environment. This innovative organizational structure may enhance physician practice and enrich QI and educational opportunities in SNFs. Further evaluation will include the impact on quality metrics of patient care and patient satisfaction, as this model has the potential to influence quality, cost, and overall health outcomes.

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Disclaimer

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