

Evaluation of Interdisciplinary Geriatric Transitions of Care on Readmission Rates

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With hospital reimbursement tied to readmissions through the Hospital Readmissions Reduction Program and a national call to action to improve care coordination with the implementation of the Affordable Care Act, providing and coordinating effective care after hospitalization has become increasingly important.¹ Approximately 20% of older adults who are discharged from the hospital setting are rehospitalized within 30 days of discharge, costing Medicare up to \$17.4 billion annually.^{2,3}

In an effort to reduce hospital readmission rates, CMS will continue to withhold payments for excess hospital readmissions; these withheld payments were projected to reach an all-time high of \$528 million in 2017.⁴ Given the clinical and economic impact of these withheld payments, institutions nationwide are attempting to identify factors that could decrease avoidable rehospitalizations. To date, no single intervention has been shown to effectively reduce readmission rates. Additionally, studies in this area are heterogeneous in design and practice setting, limiting their external validity to apply their results to other practice models.⁵

Factors affecting hospital readmissions are multifactorial, although recent data have shown that 1 in 5 adult patients discharged from the hospital setting will experience an adverse event (AE) due to medical management within 3 weeks of discharge; more than half of such events were drug related and could potentially have been prevented or mitigated if identified sooner.⁶ The transitions of care (TOC) program presented in this study includes pharmacists as an integral component of care coordination to help identify and prevent AEs related to medication management.

Beyond optimizing medication use, improving care for geriatric patients using a patient-centered medical home (PCMH) has been supported by several organizations.⁷ Specific care coordination in a PCMH model allows for improved health, reduced cost of care, and reductions in health disparities.⁷ Preliminary results from a geriatric population in the Veterans Affairs health system examined an interdisciplinary team in a PCMH of patients with complex comorbidities. In this study, readmission rates were not assessed; however, the incidence of subspecialty clinic visits declined

ABSTRACT

OBJECTIVES: To evaluate the effect of an interdisciplinary transitions of care (TOC) service on readmission rates in a geriatric population.

STUDY DESIGN: Single-center retrospective cohort study of adults 60 years or older discharged from an academic medical center.

METHODS: From July 1, 2013, to February 21, 2016, a total of 4626 patients discharged from 1 hospital, including inpatient, emergency department, observation, and short-stay units, were included. Cases were scheduled for a TOC service with the interdisciplinary team. Controls received usual care at other sites. All-cause 14-, 30-, and 90-day readmission rates between propensity score-matched study groups were evaluated by intention-to-treat (ITT), per-protocol (PP), and as-treated methods.

RESULTS: During the study period, 513 patients were scheduled for at least 1 component of the TOC intervention (ITT group). Of those patients, 215 completed all scheduled visits (PP group). Readmission rate after 30 days demonstrated no difference in the ITT group compared with the control group (12.8% vs 10.7%; $P = .215$), although it was significantly lower in the PP group in comparison with the control group (12.8% vs 7.9%; $P = .042$).

CONCLUSIONS: An interdisciplinary team based in a patient-centered medical home improved readmission rates for all patients who completed the intervention (PP group).

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TAKEAWAY POINTS

Reduction in hospital readmissions is an important public health issue, especially in the older adult population. We studied the impact of an interdisciplinary transitions of care (TOC) service composed of nurse navigators, pharmacists, and medical providers on 14-, 30-, and 90-day hospital readmissions.

- ▶ Older adults are an especially vulnerable patient population at high risk of hospital readmissions.
- ▶ Reducing hospital readmission rates may improve insurance and hospital reimbursement.
- ▶ An interdisciplinary TOC intervention may help healthcare and hospital administration allocate resources more effectively.

significantly as interdisciplinary geriatric care was transitioned into primary care.⁸ Our study aims to determine how readmission rates are affected by an interdisciplinary care model targeting older adults treated at a geriatrics PCMH.

A previous study of this clinic model was performed in 2012 and found that 1 readmission was avoided for every 18 patients completing the intervention.⁹ After this study, the team composition and clinical processes were changed in an effort to improve outcomes even further. Thus, the interdisciplinary team is now composed of nurse navigators, clinical pharmacists, and medical providers (board-certified geriatric medicine physicians and nurse practitioners). Additional changes included longer TOC appointment times, changes to pharmacists' scheduling to increase the number of patients contacted, and nurse navigator phone calls to triage patient needs. These changes reduced no-show rates for provider visits and improved continuity of care because patients can potentially see a medical provider sooner and more often in this newer model.

METHODS

TOC Intervention

As part of the PCMH, the Turner Geriatric Clinic at the East Ann Arbor Health & Geriatric Center within Michigan Medicine (MM) functions with the interdisciplinary team; they work together to assist older adults discharged to home after an acute illness to prevent rehospitalization (**eAppendix A** [eAppendices available at ajmc.com]). Patients seen at this clinic include those discharged from emergency departments, observation or medical short-stay units, subacute rehabilitation facilities, or inpatient units. Each patient is scheduled for a pharmacist and provider follow-up appointment upon discharge. Nurse navigators receive a list of all discharged patients and use that to make calls to each patient. These 3 components make up the complete TOC intervention. All interactions are documented in the electronic health record (EHR) (**eAppendix B**).

Study Design

This was a single-center retrospective cohort study. Included were adults 60 years or older discharged from MM, including observation, short-stay unit, and inpatient admissions, between July 1, 2013, and

February 21, 2016. We selected this date range to minimize overlap with new TOC services implemented at the health system level. Patients were required to have completed a primary care provider (PCP) visit within 3 years prior to the first hospitalization meeting inclusion criteria during the study period.

Cases had an established PCP at the Turner Geriatric Clinic, whereas controls had an established PCP at other PCMH clinics at MM.

At the time of this study, there were no system-wide services targeting control patients after hospital discharge. Exclusion criteria included having an outside PCP, being discharged to subacute rehabilitation or nursing home facilities, and receiving only emergency department care, given that discharge resources in this setting vary from those in other units.

This study was approved by the Institutional Review Board at MM. Data were obtained internally through the Data Office for Clinical and Translational Research. The accuracy of our data was confirmed with a manual chart review demonstrating an error rate of less than 5% among a sample of patients. Data collected included patient demographics, comorbidities, number of medications at discharge, information related to the index hospitalization and any readmissions, and interdisciplinary team utilization (ie, nurse navigator, pharmacist, medical provider). We characterized comorbidities using the Charlson Comorbidity Index, in addition to the High-Risk Diagnoses for the Elderly Scale, a tool for mortality prediction in older hospitalized patients.¹⁰

Statistical Analysis

Data were analyzed with descriptive statistics, in addition to univariate and multivariate regressions. The descriptive analysis was based on sums and overall percentages for categorical variables and on means and SDs for continuous variables.

Multivariate logistic regression was used for predicting binary outcomes. For comparative analyses, we used 3 comparisons: (1) intention-to-treat (ITT) analysis, which included all patients scheduled for the TOC intervention, whether these visits were completed or not; (2) per-protocol (PP) analysis, which included only patients who completed all components of the TOC intervention; and (3) as-treated (AT) analysis, which compared patients completing the TOC intervention with those who did not complete the TOC intervention (patients who were scheduled for TOC intervention but did not complete all components were included in the control group).

Statistical power was estimated with Fisher's exact test in the context of 2-sample comparisons with variable sample sizes. We chose population estimates of the effect size based on the previous study assessing this clinic model.⁹ Our initial anticipated treatment size was 364 people in our TOC intervention assuming a 6.7% absolute reduction in 30-day readmission, which was achieved in the previous clinic model.⁹ With a ratio of matching 1 TOC patient

to 3 control patients, we determined that we would have 88% power to detect the difference.

Analyses were performed in R 3.4.0 in SAS 9.4 (SAS Institute; Cary, North Carolina) using the TWOSAMPLEFREQ procedure for Fisher's exact test power estimation.

RESULTS

Over the duration of the study period, 513 patients were scheduled for at least 1 component of the intervention (ITT). Of those, 215 completed all components (PP and AT) (Figure). ITT, PP, and AT populations had no significant differences in baseline characteristics after matching, except that cases were slightly older than control groups (eAppendix C).

Readmission Outcomes

In the ITT analysis, there was no significant difference in readmission rates at 14, 30, and 90 days (Table). However, unadjusted readmission rates at 30 days were significantly lower for the PP population versus control group (12.8% vs 7.9%; odds ratio [OR], 0.58; 95% CI, 0.35-0.98; $P = .042$), as well as for the AT population versus control group (12.8% vs 7.9%; OR, 0.59; 95% CI, 0.35-0.98; $P = .041$) (Table). Additionally, for the PP population, 1 readmission was avoided for every 20 patients completing the intervention, with a 38% relative risk reduction. Furthermore, we performed a subgroup analysis with a breakdown by age and found no statistically significant differences in readmission rates based on age, although our study was not initially powered to look at this difference between age groups.

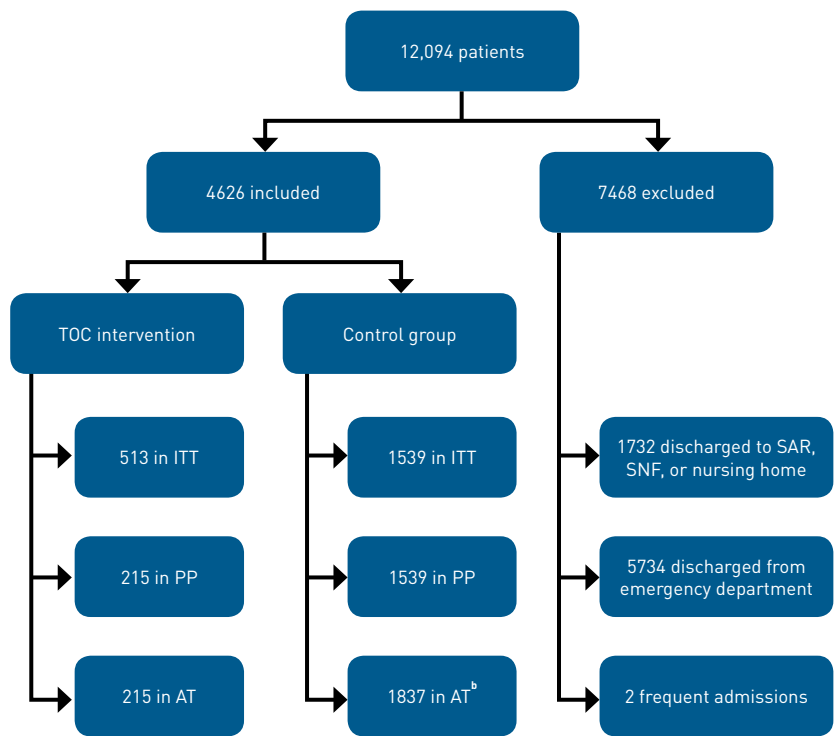
Time to Intervention

When comparing timing of interventions post discharge, patients who were readmitted within 30 days were contacted by a nurse navigator an average of 4.2 days after hospital discharge, compared with 2.1 days post discharge for patients who were not readmitted (OR, 1.36; 95% CI, 1.09-1.69; $P < .05$). In the PP group, the mean (SD) time to a visit with the nurse navigator was 2.3 (2.0) days, with the pharmacist was 5.6 (3.4) days, and with the medical provider was 10.1 (4.2) days.

DISCUSSION

Several recommendations have been proposed to improve care transitions for older adults. These include addressing factors that make transitions complex, engaging patients' family and caregivers,

FIGURE. Study Population^a



AT indicates as treated; ITT, intention to treat; PP, per protocol; SAR, subacute rehabilitation facility; SNF, skilled nursing facility; TOC, transitions of care.

^aOver the duration of the study period, 12,094 patients were identified. Of those patients, 4,626 met study criteria, whereas 7,468 patients were excluded. Of the 4,626 patients who met study criteria, 513 patients were assigned to the TOC group because they were patients of the geriatric patient-centered medical home, whereas 4,113 were patients at other patient-centered medical homes at Michigan Medicine. Of the patients in the TOC group, 215 completed all components (PP and AT intervention groups). The AT analysis compared patients who completed the TOC program with those who did not complete the TOC program (patients who were scheduled for the TOC program but did not complete all components were included in the control group).

^bIncludes 298 patients in the ITT TOC group who were excluded from the PP and AT TOC groups.

tailoring home care to meet patient needs, designing recovery plans, and predicting and avoiding preventable readmissions.² Our practice model aims to follow these recommendations to improve patient outcomes and prevent hospital readmissions.

This study adds to the body of TOC literature supporting the use of interdisciplinary teams in an outpatient PCMH working to reduce hospital readmissions. This model also includes pharmacists as part of the care team, making it a unique approach to help reduce rehospitalizations through more appropriate medication management.

Patients completing all components of the intervention (PP and AT) were found to be readmitted less often than those in our control population at 30 days. In the ITT population, there was no difference in readmission, demonstrating the importance of each component of the interdisciplinary TOC intervention working collectively to improve patient outcomes. Despite process improvement efforts to increase completion of interventions, more than half of the patients in the ITT population did not receive all 3 components

TRENDS FROM THE FIELD

TABLE. Readmission Rates

Study Population	Transitions of Care, n/N (%)	Control, n/N (%)	Odds Ratio (95% CI)	P
Per Protocol				
14-day readmission	11/215 (5.1)	116/1539 (7.5)	0.66 (0.35-1.25)	.202
30-day readmission	17/215 (7.9)	197/1539 (12.8)	0.58 (0.35-0.98)	.042
90-day readmission	35/215 (16.3)	325/1539 (21.1)	0.73 (0.50-1.06)	.101
As Treated				
14-day readmission	11/215 (5.1)	145/1837 (7.9)	0.63 (0.34-1.18)	.149
30-day readmission	17/215 (7.9)	235/1837 (12.8)	0.59 (0.35-0.98)	.041
90-day readmission	35/215 (16.3)	396/1837 (21.6)	0.71 (0.48-1.03)	.073
Intention to Treat				
14-day readmission	40/513 (7.8)	116/1539 (7.5)	1.04 (0.71-1.51)	.847
30-day readmission	55/513 (10.7)	197/1539 (12.8)	0.82 (0.60-1.12)	.215
90-day readmission	106/513 (20.7)	325/1539 (21.1)	0.97 (0.76-1.24)	.827

(nurse, pharmacist, and physician appointment), which may have influenced patient readmission outcomes. However, many patients completed at least 1 component of the intervention (ie, were seen by a provider or had contact with a nurse navigator or pharmacist). This may be due to a variety of factors, including that patients at highest risk of rehospitalization may also be at a higher risk of not completing outpatient TOC services. Examples include patients who may be more acutely ill or those with complicated psychosocial factors that may prevent them from completing TOC services, potentially influencing their rates of rehospitalization. Further data analysis regarding reasons for noncompletion of visits is in progress.

Of note, patients were scheduled for these visits as a combined result of their day of hospital discharge, schedule of providers (including physicians, nurses, and pharmacists), and patient availability. We identified several opportunities for further process improvement, including earlier nurse navigator contact after discharge and improvements in consistent scheduling and completion of TOC appointments.

Limitations

Compared with our previous study, readmission rates were considerably lower than expected in both the intervention and control groups.⁹ Preliminary efforts were made at the health system level to more actively involve nurse navigators in TOC services; however, we are unaware of large-scale efforts during our study that could have confounded our results.

The availability and accuracy of information in the EHR may be a limitation. Although this was a single-center study, limiting our external validity, the results of this study may be applicable to other institutions with similar practice models. Potential confounding variables that were not studied included variables such as social support concerns, health literacy, and socioeconomic status; we did not control for these, but all may potentially contribute to higher readmission rates.¹¹ Further studies are needed to identify how these factors may affect hospital readmission rates. Additionally, our study was not powered to evaluate differences in readmission rates based on specific patient age or on causes of the original hospital admission and readmission, but these factors may be important for future studies to consider.

Provider Roles

The goal of this study was to capture the effectiveness of the intervention provided by the TOC team; thus, the role of each provider was not assessed in detail. However, our results support the importance of early intervention by nurse navigators because patients who were not readmitted were contacted by a nurse navigator sooner than those who were readmitted. One meta-analysis found that care coordination by a registered nurse within 1 week of discharge was essential to reducing 30-day hospital readmission rates.¹² Additional studies are needed to determine the role of nursing in our program, as the previous iteration of the model did not include nurse navigators as a core component of the program. However, the results of our study and current literature support the role of a nurse as a care coordinator for patients recently discharged from the hospital setting.

Regarding the role of pharmacists in our study, a recent meta-analysis demonstrated that pharmacy-supported TOC programs were associated with an improvement in 30-day hospital readmission rates.¹³ Coleman et al found that 14% of older adults had 1 or more medication discrepancy at discharge, and this was correlated with higher 30-day readmission rates (14.3% vs 6.1%; $P = .04$).¹⁴ A more recent study of an insurer-initiated TOC program found that pharmacist-led medication reconciliation was responsible for a 50% reduction in 30-day hospital readmissions.¹⁵ Although it is difficult to extrapolate pharmacist-specific attribution to the reduced readmission rates in our study given that this is an interdisciplinary team approach, the role of medication management has been demonstrated to be a key factor in reducing hospital readmissions.¹⁶ In addition, pharmacists in our TOC intervention group not only completed medication reconciliation but also assessed medication tolerability, adherence, and cost. These concerns were then shared with the medical provider to facilitate simplification of regimens or changes to alternative therapies due to AEs, nonadherence, or cost concerns.

CONCLUSIONS

An interdisciplinary team based in a PCMH did not improve readmission rates for all patients eligible for the intervention.

However, patients who completed all components of the intervention experienced significantly lower risk of readmission at 30 days post index hospitalization. Further exploration of factors contributing to patients not completing all components will guide process improvements aimed at improving readmission rates. ■

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REFERENCES

- Hospital Readmissions Reduction Program (HRRP). CMS website. [cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program.html](https://www.cms.gov/medicare/medicare-fee-for-service-payment/acuteinpatientpps/readmissions-reduction-program.html). Updated January 16, 2019. Accessed June 14, 2019.
- Arbaje AI, Kansagara DL, Salanitro AH, et al. Regardless of age: incorporating principles from geriatric medicine to improve care transitions for patients with complex needs. *J Gen Intern Med*. 2014;29(6):932-939. doi: 10.1007/s11606-013-2729-1.
- Jencks SF, Williams MV, Coleman EA. Rehospitalizations among patients in the Medicare fee-for-service program [erratum in *N Engl J Med*. 2011;364(16):1582]. *N Engl J Med*. 2009;360(14):1418-1428. doi: 10.1056/NEJMs0803563.
- Rau J. Medicare's readmission penalties hit new high. Kaiser Health News website. [khn.org/news/more-than-half-of-hospitals-to-be-penalized-for-excess-readmissions](https://www.khn.org/news/more-than-half-of-hospitals-to-be-penalized-for-excess-readmissions). Published August 2, 2016. Accessed June 14, 2019.
- Kansagara D, Chiovaro JC, Kagen D, et al. So many options, where do we start? an overview of the care transitions literature. *J Hosp Med*. 2016;11(3):221-230. doi: 10.1002/jhm.2502.
- Forster AJ, Murff HJ, Peterson JF, Gandhi TK, Bates DW. The incidence and severity of adverse events affecting patients after discharge from the hospital. *Ann Intern Med*. 2003;138(3):161-167. doi: 10.7326/0003-4819-138-3-200302040-00007.
- Snow V, Beck D, Budnitz T, et al; American College of Physicians; Society of General Internal Medicine; Society of Hospital Medicine; American Geriatrics Society; American College of Emergency Physicians; Society of Academic Emergency Medicine. Transitions of care consensus policy statement: American College of Physicians—Society of General Internal Medicine—Society of Hospital Medicine—American Geriatrics Society—American College of Emergency Physicians—Society of Academic Emergency Medicine. *J Gen Intern Med*. 2009;24(8):971-976. doi: 10.1007/s11606-009-0969-x.
- Engel PA, Spencer J, Paul T, Boardman JB. The Geriatrics in Primary Care demonstration: integrating comprehensive geriatric care into the medical home: preliminary data. *J Am Geriatr Soc*. 2016;64(4):875-879. doi: 10.1111/jgs.14026.
- Stranges PM, Marshall VD, Walker PC, Hall KE, Griffith DK, Remington T. An interdisciplinary intervention for reducing readmission among older adults in a patient-centered medical home. *Am J Manag Care*. 2015;21(2):106-113.
- Desai MM, Bogardus ST Jr, Williams CS, Vitagliano G, Inouye SK. Development and validation of a risk-adjustment index for older patients: the High-Risk Diagnoses for the Elderly Scale. *J Am Geriatr Soc*. 2002;50(3):474-481. doi: 10.1046/j.1532-5415.2002.50113.x.
- Wolf MS, Lambert BL, Hickner J. Promoting health literacy to prevent hospital readmissions: necessary but not sufficient. *J Gen Intern Med*. 2016;31(5):455-457. doi: 10.1007/s11606-016-3658-6.
- Nelson JM, Pulley AL. Transitional care can reduce hospital readmissions [continuing education]. *Am Nurse Today*. 2015;10(4):8. americannursetoday.com/transitional-care-can-reduce-hospital-readmissions/. Accessed June 14, 2019.
- Rodriguez CR, Harrington AR, Murdock N, et al. Effect of pharmacy-supported transition-of care interventions on 30-day readmissions: a systematic review and meta-analysis. *Ann Pharmacother*. 2017;51(10):866-889. doi: 10.1177/1060028017712725.
- Coleman EA, Smith JD, Raha D, Min SJ. Posthospital medication discrepancies: prevalence and contributing factors. *Arch Intern Med*. 2005;165(16):1842-1847. doi: 10.1001/archinte.165.16.1842.
- Polinski JM, Moore JM, Kyrychenko P, et al. An insurer's care transition program emphasizes medication reconciliation, reduces readmissions and costs. *Health Aff (Millwood)*. 2016;35(7):1222-1229. doi: 10.1377/hlthaff.2015.0648.
- Ekerstad N, Bylin K, Karlson BW. Early rehospitalizations of frail elderly patients—the role of medications: a clinical, prospective, observational trial. *Drug Healthc Patient Saf*. 2017;9:77-88. doi: 10.2147/DHPS.S139237.

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eAppendix A. Transitions of Care Process

Health Care Professional	Nurse Navigator	Pharmacist	Medical Provider
Type of visit	Telephone call	Telephone call	In-clinic visit
Time period post-discharge	Within 2 business days	Within 2-14 days	Within 14 days
Assessment focus	<ul style="list-style-type: none"> -Review of systems -Fall risk/psychosocial issues -Functional status/level of activity -Prioritized goals -Additional home services or social support 	<ul style="list-style-type: none"> -Medication reconciliation -Adherence barrier resolution -Medication efficacy and tolerability -Medical stability, patient symptoms, and self-monitoring 	<ul style="list-style-type: none"> -Modified geriatrics assessment -Living situation, rehabilitation plan, and social support -Self-care abilities and nutritional status -Goals of care and schedule necessary follow-up appointments

Label: Description of the different components and health care professionals involved in the transitions of care process

Footnotes: None

eAppendix B. Note Templates for Provider, Pharmacist, Nurse Navigator

Information provided as { } is part of a drop down menu in our electronic medical record with several options that are not all specified below. Information provided as *** is intended for free text to be filled in by the respective note writer. Information provided as @ @ is a smart phrase that automatically pulls data from the patient's electronic medical record (ie allergy information).

Provider Template

TRANSITION OF CARE VISIT

@TODAY@

History and data obtained from {Relatives of adult:5061}.

Discharge Date: ***

Reason for hospitalization / History of present illness: ***

The discharge summary was reviewed and the following problems were discussed during this visit.

@DIAG@

Care Navigator call date: ***

Med Reconciliation date: ***

Allergies:

@ALLERGY@

Medications:

The medication reconciliation was reviewed prior to the visit. The following is the updated medication list.

@CMED@

Diagnoses:

@PROB@

Past Medical / Surgical / Family History:

@MEDICALHX@

@SOC@

@FAMHX@

Review of Systems:

@ROSADULT@

Physical Exam:

@VITALS@

@BMI@

General: Well-appearing, appears stated age, in no apparent distress.

HEENT: AT/NC,

Neck: supple, No LN

C/V: No murmurs, rubs, gallops heard. Clear S1, S2. Regular rate and rhythm.

Lungs: Clear to auscultation bilaterally.

Extremities: No edema or tenderness

Neuro: Cranial nerves II-XII intact. Sensory exam: WNL; Motor 5/5; Cognition intact

Gait: Steady, somewhat slowed.

Skin: no rashes or lesions

Assessment / Plan:

@ORDERSNMENC@

@PROBAPNOTES@

Referrals, tests, procedures and/or labs ordered at discharge were reviewed.

@DIAG@

Education during visit: ***

Social Work involvement in visit: {YES/NO:21365}

This visit was {NONE:19990::"highly complex", "moderately complex"}, involved coordination of care, and review of testing performed during admission and/or after discharge.

The visit was *** minutes in length, and occurred within *** days of discharge.

@FOLLOWUP@

Pharmacist Template

CHRONIC CARE MANAGEMENT SERVICES

*** is a [age] [sex] who was called for post-hospitalization medication review to determine how the patient is using medications and identify recommendations to simplify or optimize the medication regimen. Information was obtained from ***.

TRANSITIONAL CARE APPOINTMENT:

The patient was discharged from hospital *** after treatment for ***.

Number of prescription medications used at least weekly: ***

Number of non-prescription/vitamins/supplement medications used at least weekly: ***

Medication adherence/cost:

*** Patient reports missing *** doses in the last month. Prescription copay is not a financial concern for the patient.

Patient's assessment of efficacy and tolerability:

Pain assessment:

Symptoms:

Self monitoring:

Appetite:

Ambulation and exercise:

Significant drug interactions:

ASSESSMENT/PLAN:

***. The following recommendations are related to recently changed medications or reason for recent hospitalization:

1. ***
2. ***
3. ***

The following recommendations are suggested to improve the patient's other drug therapy:

1. ***
2. ***
3. ***

Medication changes since hospital admission:

Medications added: ***

Medications stopped: ***

Medications changed: ***

Medications:

Follow-up: recommendations will be available to Dr. Demarco for consideration at upcoming clinic visit.

TIME SPENT: *** minutes, phone

PATIENT VERBALIZED UNDERSTANDING OF CARE PLAN: Y

PATIENT ADVISED TO CALL BACK WITH QUESTIONS, CONCERNS, OR CHANGE IN SYMPTOMS.

Nurse Navigator Template

Care Navigator Name: ***
Primary Care Physician: ***

Reason for Call: Transition Care Post-Hospital Discharge

Admit date: ***

Discharge date: ***

Diagnoses:

No diagnosis found.

Source/Contact: {MH Source:20165}

Subjective

Current concerns/problems:

- ***

Review of Systems: (Patient/other reports)

- **Cardiovascular:** {roscv:310661}
- **Pulmonary:** {ros resp:310659}
- **Chills/Sweats/Fever:** {MH ROS CHILLS:2100350052::"Denies chills, sweats, fevers"}.
- **Appetite:** {MH APPETITE ROS:2100350053::"Denies problems with nausea, vomiting, burning, decreased appetite", "Denies weight loss since last CM encounter"}.
- **Bowel/ Bladder:** {mh bowel/bladder ros:2100350054::"Denies problems"}.
- **Skin/ Wound:** {mh wound ros:2100350055::"Not applicable"}.
- **Pain:** {mh pain ros:2100350056}
- **Cognitive Function:** {mh cognition:2100350063::"Denies problems"}.
- **Mental Health:** {mh Mental Health:2100490121}
- **Sleep:** {mh sleep ros:2100350057::"Denies problems"}.

Functional Status/ Activity Level:

ADLs - needs assistance with: {mh adl:2100350061}

IADLs - needs assistance with: {mh iadl:2100350062::"Support provided by- ***"}.

Transportation: {MH Transportation:2100350008}

Risk Assessment:

Fall Risk:

{mh fall risk assess:2100350066}

Social History:

Social History

Substance Use Topics

- Smoking status: ***
 - Packs/day: ***
 - Years: ***
 - Types: ***
 - Quit date: ***
- Smokeless tobacco: ***

- Alcohol use: ***

Current Tobacco use: {yes no:314532}

Objective:

Recent Vitals:

Wt Readings from Last 3 Encounters:

BP Readings from Last 3 Encounters:

Temp Readings from Last 3 Encounters:

Pulse Readings from Last 3 Encounters:

Resp Readings from Last 3 Encounters:

Medication Reconciliation

{mh reconcile meds:2100350065}

Medication-related Risk:

{mh med risk assess:2100350067::"No risks identified"}

Self Monitoring

{MH SELF MONITORING:2100350082}

Assessment/Plan:

Care Navigator Plan of Care:

{mh care mgt plan:2100350068}

Self - Management Action Plan:

Verbal direction on exacerbation plan and symptoms monitoring for

No diagnosis found.

CN Prioritized Goals for Patient:

- Medication adherence as directed
- Keep scheduled appointments- Next Dr. *** clinic appointment on ***
- Reviewed and patient/caregiver will follow Plan of Care per Hospital Discharge Summary
Note
- ***

Coordination of Services/Social Support:

{MH Coordination of Services/Social
Support:2100350033}

Ambulatory Therapies: {MH Amb Therapies:20223}

Re-evaluation of Plan of Care and Progress toward Goals:

{mh re eval:2100350069}

Length of visit: *** minutes

Coordination of Care: *** minutes

eAppendix C. Baseline Characteristics

	Transitions of Care	Control	P-Value
Female, n (%)			
Intention-to-treat	322 (62.8%)	932 (60.6%)	0.374
Per protocol	131 (60.9%)	932 (60.6%)	0.917
As treated	131 (60.9%)	1123 (61.1%)	0.954
Age, mean (SD)			
Intention-to-treat	80.4 (8.2)	79.2 (7.9)	0.003
Per protocol	80.6 (7.9)	79.2 (7.9)	0.016
As treated	80.6 (7.9)	79.4 (8.0)	0.036
White, n (%)			
Intention-to-treat	400 (78%)	1217 (79.1%)	0.596
Per protocol	167 (77.7%)	1217 (79.1%)	0.637
As treated	167 (77.7%)	1450 (78.9%)	0.669
Black, n (%)			
Intention-to-treat	58 (11.3%)	163 (10.6%)	0.651
Per protocol	22 (10.2%)	163 (10.6%)	0.873
As treated	22 (10.2%)	199 (10.8%)	0.788
Charlson Comorbidity Index, mean (SD)			
Intention-to-treat	3.8 (3.7)	3.9 (3.9)	0.599
Per protocol	3.7 (3.4)	3.9 (3.9)	0.520
As treated	3.7 (3.4)	3.9 (3.9)	0.535
Medication Count, mean (SD)			
Intention-to-treat	13.3 (5.6)	13.2 (5.8)	0.692
Per protocol	13.4 (5.3)	13.2 (5.8)	0.634
As treated	13.4 (5.3)	13.2 (5.8)	0.647
Index Length of Stay in Days, mean (SD)			
Intention-to-treat	2.8 (2.8)	2.8 (2.5)	0.625
Per protocol	3.0 (3.2)	2.8 (2.5)	0.333
As treated	3.0 (3.2)	2.8 (2.5)	0.233
High-Risk Diagnoses for Elderly Scale, mean (SD)			
Intention-to-treat	2.5 (2.9)	2.6 (3.0)	0.588
Per protocol	2.2 (2.5)	2.6 (3.0)	0.107
As treated	2.2 (2.5)	2.6 (3.0)	0.091

SD = standard deviation