Evaluation of Interdisciplinary Geriatric Transitions of Care on Readmission Rates

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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).
**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. A 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. 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 ([Appendix A](#)), ([Appendices available at ajmc.com)](http://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) ([Appendix 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.

**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. 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. 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, tailoring home care to meet patient needs, designing recovery plans, and predicting and avoiding preventable readmissions. 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
(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. 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. 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. 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. 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). 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. 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. 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.

TABLE. Readmission Rates

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

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. 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. 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). 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. 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. 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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Authorship Information: Concept and design (NMF, SEV, TLR); acquisition of data (NMF, VDM, TLR); analysis and interpretation of data (NMF, SEV, VDM, TTS); statistical analysis (VDM); obtaining funding (SEV); and supervision (SEV, TLR).

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REFERENCES


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### eAppendix A. Transitions of Care Process

<table>
<thead>
<tr>
<th>Health Care Professional</th>
<th>Nurse Navigator</th>
<th>Pharmacist</th>
<th>Medical Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of visit</td>
<td>Telephone call</td>
<td>Telephone call</td>
<td>In-clinic visit</td>
</tr>
<tr>
<td>Time period post-discharge</td>
<td>Within 2 business days</td>
<td>Within 2-14 days</td>
<td>Within 14 days</td>
</tr>
</tbody>
</table>
| Assessment focus         | -Review of systems  
                          -Fall risk/psychosocial issues  
                          -Functional status/level of activity  
                          -Prioritized goals  
                          -Additional home services or social support  
                          -Medication reconciliation  
                          -Adherence barrier resolution  
                          -Medication efficacy and tolerability  
                          -Medical stability, patient symptoms, and self-monitoring  
                          -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
**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}
Re-evaluation of Plan of Care and Progress toward Goals:

Length of visit: *** minutes
Coordination of Care: *** minutes
### Transitions of Care

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