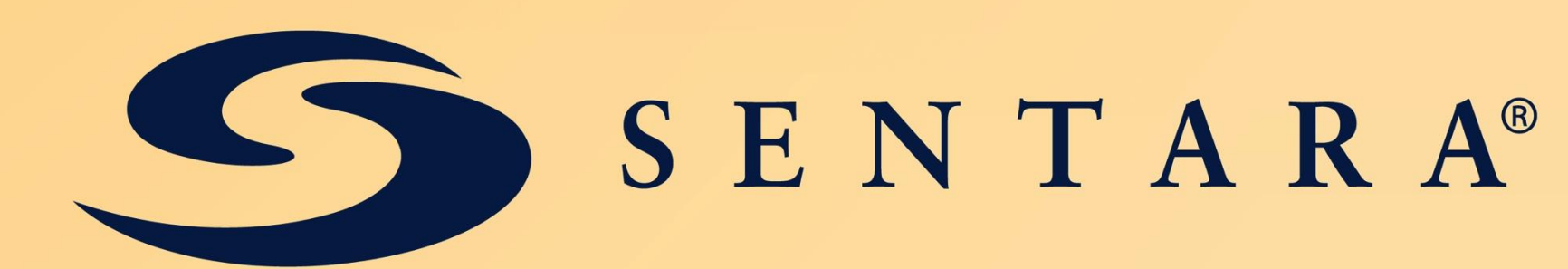




Impact of a Community-Based Care Transition Program on Avoidable Hospital Readmissions Within 30 Days

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Background

- Nearly 1 in 5 patients, approximately 2.6 million Medicare beneficiaries, are readmitted within 30 days following an inpatient admission.
- Care transitions occur when patients move from one health care setting to another during the course of chronic or acute illness. Ineffective handoffs between health care providers, during care transitions, often lead to avoidable hospital readmissions.
- Patient health care information is often fragmented in silos creating poor communication between health care providers. Often, patients do not follow-up with their primary care providers (PCPs) within 7 days of discharge.
- Patients and their caregivers often misunderstand important aspects of their care, especially medication management (adherence to medication regimes, medication interactions, and duplicate medications).
- The Community-Based Care Transitions (CBCT) program, created by Section 3026 of the Affordable Care Act (ACA), is a care delivery model to improve care transitions, from the hospital to other settings, and reduce 30-day readmissions for high-risk Medicare beneficiaries.

Significance

- The CBCT program may improve care transitions by providing Medicare beneficiaries with tools that empower, support, and promote knowledge and self-management of their condition as they transition from hospital to home.
- Safe and effective care transitions require thoughtful collaboration among health care providers (physicians, nurses, social workers), health care facilities (hospitals, nursing homes, home health, hospice), patient caregivers, and patients.
- Knowledge about alternative community-based service options, such as the Area Agency on Aging, may also be improved.

Objectives and Research Questions

This study aims to explore differences in 30-day readmissions to the hospital, following implementation of the CBCT program, for Medicare beneficiaries aged 65 years or older. Research questions include:

- Following implementation of the CBCT program, are there differences in 30-day readmissions to the hospital?
- Is there a relationship between patient demographics, inpatient characteristics, and 30-day readmissions?
- Does CBCT reduce 30-day readmissions to the hospital when controlling for patient demographics and inpatient characteristics?

Population

- The study population will include records ($N \approx 500$) for patients with a hospital admission to Sentara Northern Virginia Medical Center (SNVMC) that meet inclusion criteria: 1) 65 years or older on admission; 2) Medicare beneficiary; 3) primary discharge diagnosis of heart failure (HF) or chronic obstructive pulmonary disease (COPD) complicated pneumonia; and 4) admission and discharge dates both occurring within the index period (January 1, 2012 to December 31, 2013).

Program

- The CBCT program, based on Coleman's Care Transitions Model (Figure 1), was funded by a grant from the Prince William Area Agency on Aging. The CBCT program encourages patients to take a more active role in their healthcare. Transition coaches monitor patients across health care settings for four weeks following hospital discharge to ensure effective hand-offs between providers and reinforce patient learning.

Figure 1. The 4 Pillars of Care Transition

Pillar	Medication Self-Management	Dynamic Patient-Centered Record	Follow-Up	Red Flags
Goal	Patient is knowledgeable about medications and has system	Patient understands and manages Personal Health Record	Patient schedules and completes follow-up visit with PCP or specialist	Patient is knowledgeable about indications that condition is worsening and how to respond
Hospital Visit	Discuss importance of knowing medications	Explain Personal Health Record	Recommend PCP follow-up visit	Discuss symptoms and drug reactions
Home Visit	Reconcile pre and post hospitalization medication lists Identify and correct any discrepancies	Review and update Personal Health Record Review discharge summary Encourage patient to share Personal Health Record with PCP and/or specialist	Emphasize importance of PCP follow-up visit Practice and role-play questions for the PCP	Discuss symptoms and medication side effects
Follow-Up Calls	Answer remaining medication questions	Discuss outcome of PCP or specialist visit	Provide advocacy in getting appointment, if necessary	Reinforce when/if PCP should be called

Coleman, E. (2010). The Care Transitions Program. <http://www.caretransitions.org>

Method

- This is a retrospective cohort study using secondary data analyses of medical records. The index period is defined as beginning on the admission date for any inpatient hospitalization during the study period (index admission), and ending on the related discharge date for that inpatient hospitalization (index discharge). All data will be censored on January 31, 2014. Only records for patients with index admission and index discharge dates both occurring within the index period will be included.
- Data related to SNVMC patients readmitted within 30-days will be provided by the Virginia Association of Healthcare Quality (VAHQ). Patient Health Information (PHI) is recorded in paper charts or EPIC. Medical claims and billing information is recorded in a central data repository (Case Mix).
- All patient records (VAHQ, paper charts, EPIC, and Case Mix) which meet inclusion criteria, will be extracted for secondary data analyses.

Analysis Plan

- SPSS will be used to analyze secondary data. Descriptive statistics will be presented for study variables. Mean, standard deviation, median, 25th and 75th quartiles, and range will be reported for continuous variables. Categorical variables will be summarized by frequencies and proportions.
- *Chi-square test of independence* will be used to explore associations between categorical variables and the CBCT program.
- *Spearman rho correlations* will be used to explore relationships between patient demographics, inpatient characteristics, and 30-day readmissions.
- *Logistic regression* will be used to predict 30-day readmissions, controlling for patient demographics and inpatient characteristics.
- Data will be analyzed as recorded in patient records; missing data will not be imputed. If more than 10% of data are missing for key variables, the Principal Investigator will explore the pattern of missing data to assess the impact of the missing data on the analyses.

Human Subjects Protection

- This study will be submitted for approval to the SNVMC Institutional Review Board. The study will be conducted in compliance with the US Food and Drug Administration (FDA) Title 21 CFR Part 50 – Protection of Human Patients and/or Part 56 – Institutional Review Boards; the Declaration of Helsinki and its amendments; and the Health Insurance Portability and Accountability Act of 1996 (HIPAA).
- Waivers for informed consent and PHI will be requested since this retrospective research study presents no more than minimal harm to patients and involves no physical procedures.
- All requirements for Sentara's *Use of PHI in Research Policy and Procedure* will be followed. The data file that links patients to their specific records will be password protected. An audit trail will provide information on database access.
- Data will be stored on a secured SAN server with role-based security. Appropriate precautions will be used to protect information. Security measures will be in place to protect against the loss, misuse, or alteration of the information under our control.

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