

IMPROVING TRANSITIONS OF CARE BETWEEN A SKILLED NURSING FACILITY
AND PRIMARY CARE PROVIDERS

By

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Abstract

The number of patients discharged to skilled nursing facilities (SNFs) after hospitalization continues to increase. Current research has focused on how to improve hospital to SNF or community transitions, with very few studies focusing on the transition from the SNF to the community. The purpose of this project was to identify whether the use of a standardized SNF discharge packet would improve the transfer of patient information between SNF and outpatient primary care providers (PCPs). Utilizing the Centers for Medicare & Medicaid Services guidelines, a standardized discharge packet was created for use at a suburban SNF in the Midwest. Participants in this project received rehabilitation services at the SNF and were discharged to the community, independent-living, or an assisted-living community and followed with a PCP at the university health system. The discharge packet was completed 24-48 hours prior to the patient's discharge and sent to the care transition center within a university health system upon SNF discharge. The care transition center was then responsible for ensuring that a follow-up discharge appointment was made with the primary care provider with 14 days after SNF discharge and that the discharge paperwork was available for the primary care provider to review prior to the patient visit. Of the ten patients included in the QI initiative, sixty percent of patients were seen by their PCP within 14 days after SNF discharge. Only 10% of patients visited the ED or were hospitalized prior to their PCP follow-up. PCP's contacted via survey agreed that the care transition center helped improve communication between providers, but noted that some pertinent patient information continued to be missing. Further inquiry into the current process of uploading patient information to the electronic health record is needed to ensure that discharge paperwork is present for providers to review prior to the patient follow-up.

Keywords: transitions of care, care transitions, skilled nursing facility, and community

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Improving Transitions of Care between a Skilled Nursing Facility and Primary Care Providers

Improving care transitions to reduce fragmented care and adverse outcomes has become a target for reform, however improving skilled nursing facility (SNF)-to-community transitions has been largely neglected in the discussion (Lindquist et al., 2016). Over 1.5 million adults over the age of 65 are now using SNF for rehabilitation after hospital discharge, with this number increasing every year (Lindquist et al., 2016). This has led to an increase in the transfer of patient information between hospitalists, SNF providers, and outpatient primary care physicians (PCP) resulting in fragmented care (Park, Branch, Bulat, Vyas & Roever, 2013). Patients who are discharged to the community and unable to access their PCP in a timely fashion have higher rates of emergency department (ED) visits and rehospitalization (Park et al., 2013).

Background and Significance of Problem

As hospital length of stay decreases, the number of medically complex patients discharged to SNF increases. Transitions of care for these patients from the inpatient to the community setting have become a target for reform to help improve quality of patient care. Most transition of care studies focused on how to improve transitions from hospital to SNF or hospital to community, with very few focusing on transition from a SNF to the community.

Hospital systems and SNF's are financially penalized for rehospitalization of patients who receive care at a SNF in the 30-day period post-discharge (Carnahan, Slaven, Callahan, Wanzhu, & Torke, 2017; Lindquis et al., 2016). In 2006, 24% of patients discharge from a SNF were readmitted to the hospital within the 30-day post-discharge period costing Medicare \$4.3 billion (Lindquist et al., 2016). Evidence has shown that after discharge to the community, patients are at risk for "adverse drug events, lost inpatient test results, social isolation, emergency department visits, and hospital readmission" (Carnahan et al., 2017). Patients discharged from a

SNF to the community are at an increased risk to experience these adverse events due to their medically complexity (Carnahan et al., 2017). Poor communication between medical providers is one factor that leads to increased adverse events during the transition from the SNF to the community. SNF providers face challenges in identifying the correct PCP and in insuring that the adequate information is provided and received by the PCP (Lindquist et al., 2016). Meanwhile, PCPs often report having limited or no knowledge of what happened to the patient during their SNF stay (Lindquist et al., 2016).

The Improving Medicare Post-Acute Care Transformation (IMPACT) Act of 2014 was passed by the Centers for Medicare & Medicaid Services (CMS) requiring the submission of standardized data by Long-Term Care Hospitals (LTCHs), Skilled Nursing Facilities (SNFs), Home Health Agencies (HHAs) and Inpatient Rehabilitation Facilities (IRFs) (U.S. Department of Health & Human Services [HHS], 2018). The collected data is intended to improve patient outcomes through shared-decision making, care coordination, and enhanced discharge planning (HHS, 2018). The intent of the IMPACT act is to support the “Meaningful Measures” CMS initiative that focuses on quality measures and issues most critical to providing high quality care (HHS, 2018). These Meaningful Measures include: (1) promote effective communication and coordination of care, (2) promote effective prevention and treatment of chronic disease, (3) work with communities to promote best practices of healthy living, (4) make care affordable, (5) make care safer by reducing harm, cost in the delivery of care, and (6) strengthen personal and family engagement as partners in their care (HHS, 2018). One of the quality measure domains under the IMPACT act is the transfer of health information and care preferences when an individual transitions to another care setting (HHS, 2018). This act stipulates what information should be included in the provider handoff when a transition in level of care or to another setting occurs.

Problem Statement

CMS guidelines are now focusing on transforming communication between medical providers during patient transitions of care. Patients discharged from a SNF to the community are medically complex and at an increased risk of adverse events, including medicine errors and rehospitalization. Few studies have been conducted to assess initiatives on improving transitions of care from the SNF to the community. Therefore, the purpose of this quality improvement project was to improve the transfer of patient information from one SNF to the PCP in the community by utilizing a standard discharge packet.

Goals, Objectives & Expected Outcomes

This project aimed to improve the transition of information from the SNF to the PCP. The first outcome of this quality improvement project measured was provider satisfaction with the information provided in the discharge packet sent to the care transition center at the time of the patient discharge. The second outcome evaluated was the rate of Emergency Department (ED) visits and rehospitalization that occur prior to the primary care follow-up.

Definition of Terms and Concepts

Conceptually, transition of care is defined as “services designed to ensure health care continuity, avoid preventable poor outcomes among at-risk population, and promote the safe and timely transfer of patients from level of care to another or from one type of setting to another (Naylor, Aiken, Kurtzman, Olds, & Hirschman, 2011). For this project, transition of care was defined as the transfer of pertinent patient information from the SNF medical provider to the PCP to improve patient outcomes.

Care transition center can be defined as a place that specializes in bridging care from the acute care setting to community with the goal of preventing readmissions and ED visits by providing access to care for patients with fragmented care or at high risk for readmission (Smith,

2015). In this QI initiative, care transition center was defined as the department within the university health system that receives a patient's discharge paperwork and facilitates dissemination of patient information with the PCP and coordinates timely patient follow-up with the PCP after SNF discharge.

The standardized discharge packet can be defined as a collection of patient health information that is provided to the community healthcare provider upon discharge from a healthcare facility that is the same for all patients whom receive care at the facility. For the purpose of this project, the standardized discharge packet was applicable to patient's who followed with a provider at university health system's internal medicine and family medicine departments and will consist of: 1) reason for SNF admission, 2) significant findings/summary of patient stay, 3) any procedures or treatment that occurred during the stay, 4) list of patient's diagnoses 5) patient's discharge condition, 6) medication list 7) patient and family instructions, and 8) medical provider's name and contact information.

Typically, community is defined by as geographical area, a group of people living in the same place, or individuals that share common characteristics (Merriam-Webster, 2018). In this project, community was described as the return of an individual to their home (private resident or apartment) where they are responsible for completing activities of daily living either independently or with some assistance and receive medical care from an outpatient primary care provider.

Review of Literature

A literature review was conducted to review the current evidence on the need to implement a quality improvement project regarding transitions of care from a SNF to the community settings. The following literature review includes the methods used to obtain the

articles, a synthesis of the studies collected, and the strengths and weakness of the studies obtained.

Methods

A review of the literature was conducted utilizing the following databases: Cumulative Index of Nursing and Allied Health Literature (CINAHL), PubMed, and Google Scholar. The following keywords used in the search were *transitions of care*, *care transitions*, *skilled nursing facility*, *acute care*, *hospital*, *subacute care*, *community*, and *home*. Inclusion criteria included peer-reviewed primary research articles focusing on the transition of care from either the skilled nursing facility to the community setting or from an acute care facility to the community. Exclusion criteria included studies that did not focus on transitions between skilled nursing facilities or acute care facility to the community, not written in English, greater than 10 years old, and those that were not peer reviewed or primary research.

Ten primary, peer-reviewed studies were identified from the search of the databases listed above. Of these 8 have been published within the last 5 years. Five studies focused on transitions from an acute care setting to the community and 5 focused on the transition from the skilled nursing facility to the community. Five of the studies only included individuals over 60 years of age, and five included participants younger than 60 years of age.

One weakness of this literature review was that the intervention for improving care transitions differed in each study making it hard to identify what interventions had the greatest impact on improving care transitions. None of the studies included were randomized controlled trials, with four being pre-post intervention quality improvement projects, two quasi-experimental control trial, two retrospective cohort study, one prospective non-randomized trial, and one qualitative study.

Population, Setting, and Interventions

Five of the studies limited the population to individuals in a skilled nursing facility and five studies focused on patients discharging from an acute care setting. Carnahan et al. (2017), limited their population to Medicare or dual eligible (Medicare and Medicaid) enrollees. Park et al. (2013) completed a study at a Veteran Affairs hospital and the population mostly consisted of white males. Researchers Berkowitz (2013), Delate, Chester, Stubbings, and Barmes (2008), Farrell et al. (2015), Huntington, M., Guzman, A., Roemen, A., Fieldsend, J., & Saloum (2013), Low et al. (2015), and Reidt et al. (2016) only included participants that were being seen by a PCP at the health system organization responsible for conducting the study. The studies by Brener, S., Bronksill, S., Comrie, R., Huang, A., & Bell, C. (2016), Low et al. (2015) and Wee et al. (2014) were completed at facilities outside of the United States.

All the studies included were completed in an urban setting. Five studies were conducted at either a single skilled nursing facility or hospital (Berkowitz et al. (2013); Carnahan et al., 2017; Farrell et al., 2015; Low et al., 2015; Reidt et al., 2016). While the studies by Brener et al. (2015), Carnahan et al., (2017), Delate et al. (2008), Huntington et al. (2013), Park et al. (2013) and Wee et al (2014), were completed at multiple skilled nursing facilities or hospitals. Although the Huntington et al. (2013) included multiple hospitals, the study was limited to a single physician hospital organization.

The interventions utilized by each study to assess transitions of care varied greatly. Carnahan et al., (2017), completed a secondary data analysis utilizing the Older Adults Transition Study (OATS) database that included the information of 33, 386 patients cared for at a safety-net hospital in Indiana. This study looked at Medicare and dual eligible patients who experienced an acute hospitalization of 3 nights or more and then were discharged to a SNF or home (Carnahan et al., 2017). The researchers looked at whether early home health visits and

early provider visits within the first week after SNF discharge was associated with decreased hospital readmission within 30 days.

Brener et al. (2016) utilized multiple administrative database to assess whether supportive hospital visits completed by the primary care provider led to improvements in rehospitalization rates, death, ED visits, and ambulatory health services post-discharge. Data for adults over 18 years of age discharged from a hospital in Ontario, Canada between January 1, 2008 and December 31, 2009 were included. Additional inclusion criteria included having a primary care physician in the community that provided in-hospital supportive visits (at least 2 visits within the previous year) which was identified by assess physician billing data using a specific fee code. Patients transferred to nursing home or acute care facilities after hospitalization were excluded. Patient demographics including age, sex, income, number of previous primary care visits were collected from the databases. Readmission risk from the index hospitalization was calculated based on the LACE score, with a score ≥ 10 indicating a high risk of readmission in this study.

Two of the studies (Delate et al., 2008; Reidt et al., 2016) focused on improving medication reconciliation with the use of a pharmacist. Reidt et al. (2016) utilized a practice model incorporating a pharmacist, nurse practitioner, and geriatrician to perform a medication reconciliation prior to SNF discharge and to ensure appropriate medication use post-discharge. The pharmacist was responsible for reviewing all medication changes made in the hospital and during the SNF stay. Prior to discharge, the pharmacist would provide patient education and then follow-up via phone or with an in-home visit within 1-week after SNF discharge. The summary of the visit was then entered in electronic health record (EHR) and communication with the patient's primary care provider. Data was then collected to identify whether the intervention decreased hospital readmissions and emergency department (ED) visits within the first 30 days

after SNF discharge. The study by Delate et al. (2008) assessed the impact of a pharmacist managed medication reconciliation program on post-discharge mortality, rehospitalization, ED, and clinic visits. A pharmacist was responsible for reviewing a medication list within 72 hours of the SNF discharged and performed a drug regimen review including: drug name, dosage, fill dates and to identify any therapy modifications or unexplained discrepancies (Delate et al., 2008). Upon completion, the pharmacist would then contact the PCP or discharging provider to discuss any discrepancies or potential drug-related problems and recommend changes. Upon making any changes, the patient or their caregiver would then be notified of the new medication regimen (Delate, 2008).

The studies by Berkowitz et al. (2013), Huntington et al. (2013), Low et al., (2015), Park et al., (2013), and Wee et al. (2014) attempted to improve care transitions by improving the SNF discharge process. In the study by Park et al. (2013), a post-discharge clinic (PDC) was created by the Veterans Affairs hospital to improve transitions from the SNF to the community. The goal of this intervention was to reduce hospital readmission and ED visits within the 30-days after SNF discharge and to decrease the acute-care inpatient days for those readmitted. In the redesigned discharge plan, a nurse practitioner was responsible for completing a 2-hour discharge visit no more than 72 hours prior to discharge. This visit included a medication reconciliation, ordering of any medical supplies or home health services, individual and caregiver education, and completion of a progress note to be sent to the patient's PCP via the EHR at the VA. The progress note was standardized to include: summary of SNF course, functional assessment, medication list, and interventions provided at by the PDC nurse practitioner.

The study by Berkowitz et al. (2013) modified Project Red to apply it to the SNF setting. Project RED (Project ReEngineered Discharge) uses a checklist to ensure delivery of a comprehensive care transition process which includes a method for patient and family education and engagement while emphasizing the connection with community providers after discharge (Berkowitz et al., 2013). Components of Project RED include: (1) making follow-up discharge appointments, plan for follow-up tests pending at time of discharge, (3) organize post-discharge services/equipment, (4) medication reconciliation, (5) reconciling discharge plan, (6) teach written discharge plan, (7) educate patient about diagnosis/-es, (8) assess degree of patient's understanding of the discharge plan, (9) review what to do if a problem arises, (10) transmit discharge summary to clinician accepting care, and (11) reinforce discharge plan (Berkowitz et al., 2013). Specific changes made to adapt Project RED to the SNF setting included: (1) printing and reviewing a care plan with the patient and/or family during the first care plan meeting and including a final draft at the day of discharge; (2) SNF EHR was integrated with the Project RED server to automatically transfer SNF data to the Project RED software; (3) care plan to contain the medication list, follow-up appointments, PCP contact information, advanced directives orders, and visiting nurse contact information; (4) copy of all information included in the care plan was given to the home caregiver of the patient (Berkowitz et al., 2013). A copy of the care plan was also left in the patient room to provide daily education to the patient and their caregiver. Berkowitz et al. (2013) assessed the success of the intervention by assessing the 30-day rehospitalization rate and improved rate of attendance at outpatient provider visits.

Huntington et al. (2013), completed a study to determine whether 30-day readmission rates for a physician hospital organization in South Dakota were decreased with an intensive education session prior to discharge and continued follow-up by phone for up to 30-days after

discharge for patients with a primary or secondary hospital diagnosis of CHF. An education session was completed in hospital prior to discharge. Within 48-hours after hospital discharge, a home visit was completed including: (1) comprehensive education and review session, (2) medication reconciliation, and (3) confirming outpatient primary care and specialist appointments within 10-day post-discharge (Huntington et al., 2013). Additional follow-up included a minimum of four telephone encounters (or home visits if patient qualified for home healthcare) and a final call at 30-days post discharge focused on education reinforcement, medication adherence, daily weights, sodium intake, and indications for physician contact (Huntington et al., 2013).

Low et al. (2015), completed a quasi-experimental study completed in Japan that used a pre-post design to assess the effectiveness of a transitional home care program in decreasing ED visits, hospital readmissions, and hospital length of stay after the index hospitalization. In this study, they compiled a multi-disciplinary team that included a family physician, nurse case manager, physiotherapist, occupational therapist, speech therapist, and a social worker. Interventions completed by the physician and nurse during the initial home visit after hospital discharge focused on: (1) optimizing the medical condition in the home setting, (2) educating the patient and caregiver on disease self-management using action plans, (3) medication reconciliation and facilitating adherence to medication plan, (4) ensuring appropriate follow-up with hospital specialists, and (5) implementing community services to support the patient in the home setting (Low et al., 2015). During the initial visits, the nurse and physician identified if patients had medical needs that required the assistance of other members on the multidisciplinary team and scheduled their visits accordingly. After the initial visit, the nurse would follow-up by phone or with an in-home visit to assess their needs. Once their care had stabilized (no more than

6 months after hospitalization), the patients were transferred back to their community care provider (Low et al., 2015).

The study by Wee et al. (2014), sought to evaluate the effectiveness of the Aged Care Transition (ACTION) program, which “provides hospital to community support to elderly adults with complex care needs and limited social support”, in reducing unplanned rehospitalizations and ED use across 5 hospitals in Singapore (Wee et al., 2014). The ACTION team at each hospital was comprised of 16 care coordinators, a project director, and a clinical leader. Using the ACTION program components, the care coordinators provided “coaching aimed at helping individuals and their families understand the individual’s condition, effectively articulate their preferences, enable self-management, and care planning, to ensure safe and effective care transition from the hospital to home” (Wee et al., 2014). During hospitalization, the care coordinator worked with the family and hospital staff to develop the most appropriate plan of care. Upon discharge, follow-up telephone calls and home-visits were implemented for an average of 1.5 months to continue to coordinate community referrals such as home health and adult day care (Wee et al., 2014).

The study by Farrell et al. (2015), assessed whether addition of a transition team to their organization’s Patient Centered Medical Home (PCMH) model would help reduce readmission rates and lead to longer time to readmission after the index hospitalization. The transition team was comprised of care managers who had backgrounds in nursing, social work, or clergy. These care managers reviewed a daily list of patients discharged from the academic center via the EHR system to identify patients who had a primary care provider within the university health system. The care manager was then responsible for completing a post-discharge telephone call within 24-72 hours after hospital discharge to these patients. During this call, the care manager would

schedule the primary care post-discharge appointment within 72 hours to 1 week after hospital discharge. The care manager would also assess whether the patient had any questions over discharge instructions or their hospitalization, assess changes made to medications, and assess knowledge of warning signs necessitating medical care. Patients whose primary provider specialized in obstetrics/gynecology, nurse midwifery, pediatrics, or medicine or pediatric specialties were not included in this study (Farrell et al., 2015).

Outcome Measures and Results

The studies conducted by Berkowitz et al. (2013), Brener et al. (2016), Carnahan et al. (2017), Farrell et al. (2015), Huntington et al. (2013), Low et al. (2015), Park et al. (2013), and Wee et al. (2014) showed a decrease in rehospitalization after the intervention was initiated. In the study by Carnahan et al. (2017), patients receiving home health visits in the first week after SNF discharge had a reduced risk of rehospitalization. This finding was also consistent with patients that had early outpatient clinic visits at weeks 2 and 3, but not overall in the 30-day period (Carnahan et al., 2017).

Using the reengineered Project Red, Berkowitz et al. (2013) saw a decrease in hospitalization rates from 18.9% to 10.2%. This study also showed an increase in follow-up visits with the PCP from 52.0% to 70.5% (Berkowitz et al., 2013). Patient's in this study also reported feeling a higher level of preparedness upon discharge from the SNF facility (Berkowitz et al, 2013).

Brener et al. (2016), assessed if in-hospital visits by the PCP decreased the rate readmissions within 30-days. Of the 11,316 primary care physicians practicing in Ontario, only 3,236 had a history of completing regular hospital visits. Data showed that patients who received a visit by their PCP had longer lengths of hospital stay (9.7 days vs 6.8 days, $P < 0.001$) and a higher 30-day readmission risk (LACE score ≥ 10 : 39.4% vs 29.9%, $P < 0.001$). Those that

received visits were more likely to be readmitted within 30-days of discharge (8.9% vs 7.8%, $P < 0.001$), and more likely to die within 30-days post discharge (3.7% vs 3.2%, $P < 0.001$).

However, patients that received hospital visits by their PCP were less likely to visits the ED within 30 days after their visit (10.4% vs 11.6%, $P < 0.001$), had higher average number of PCP visits in the community within 30 days (3.8% vs. 3.1%, $P < 0.001$), and had a higher use of home-care services (31.6% vs 26.8%, $P < 0.001$).

Farrell et al. (2015) showed that the addition of transition management in their care management programs led to lower all cause hospitalization rates from 17.9% to 8.0% at 30-days, 27.1% to 10.8% at 60-days, 33.3% to 12.9% at 90 days, and 52.3% to 22.0% at 180-days. Delays to readmission from index hospitalization was delayed from 95 to 115 days (Farrell et al., 2015). However, these findings were significant for the overall sample and for patients under 65 years of age ($P < 0.05$) and only marginally significant for patients over the age of 65 ($P < 0.10$).

With an education-focused intervention, Huntington et al. (2013) reported a 11% reduction in the 30-day readmission rate ($p = 0.043$) in the intervention group when compared to the non-enrolled group (Huntington et al., 2013). Although the timing of readmission between groups was not significant ($p = 0.27$), there appeared to be a trend toward earlier admission in the non-enrolled group with fewer and later admissions in the enrolled-group (Huntington et al., 2013). No association was found between readmission and timely follow-up with a physician ($p > 0.05$) (Huntington et al., 2013).

Using a multi-disciplinary transitional home care program, Low et al. (2015) reported a 51.6% reduction in rehospitalization at 3-months post-intervention and 52.8% reduction at 6 months. Length of patient hospital days were also decreased in the intervention group were 12.05 and 20.03 days at 3 and 6 months, saving 5,787 bed days when compared to the pre-intervention

group (Low et al., 2015). Overall, the cost savings of this program was estimated to be around \$4.7 million (Low et al., 2015).

Park et al. (2013) initiated a post-discharge clinic to help oversee the care of adults transitioning from a SNF to the community. This study reported a decrease in rehospitalization rates from 14% pre-intervention implementation to 14% post-intervention (Park et al., 2013). This study also reported that when patients were hospitalized, their length of stay decreased from 60 per 1000 patient days to 33 per 1000 patient days (Park et al., 2013).

With the implementation of the ACTION program for elderly adults with complex care needs and limited social support, Wee et al. (2014) reported lower rates of hospitalization at 30-days (15.6% vs 27.8%, $P < 0.001$) and 180-days (37.9% vs 51.6%, $P < 0.001$). Considering the costs associated with the implementation of the ACTION program, overall cost-savings from reductions in hospitalization and ED visits was estimated at 3.4 million.

The study completed by Reidt et al. (2016) focused on medication reconciliation and appropriate medication use after SNF-discharge. Initially this study showed a decreased in hospitalization rates from 19.6% pre-intervention and 9.2% post-intervention. However, after the authors adjusted for confounding variables, age, sex, ethnicity, pay, and clinical comorbidities, no significant difference was found between the pre- and post-intervention groups (Reidt et al., 2016). Delate et al. (2008) also focused on medication reconciliation in their study. They found that after 60 days there was no significant differences in the proportion of patients that had died, visited the Emergency Department (ED), or were hospitalized. After the author's adjusted for age, sex, chronic disease score, primary discharge diagnosis, and discharging SNF, the medication reconciliation group and 78% reduction in risk of death within the first 60-days post-SNF discharge (Delate et al, 2008). Although the study by Huntington et al. (2013) did not focus

on medication reconciliation, they found significant association between medication reconciliation and readmission ($p = 0.038$), with medication discrepancies more likely to be identified on those that were readmitted versus those that were not (40% vs. 19%).

Both Reidt et al. (2016), Low et al. (2015), Park et al. (2013) and Wee et al. (2014), assessed the impact of their intervention on the ability to reduce the ED visit rate after SNF discharge. Reidt et al. (2016) found that ED visits dropped from 24.9% to 12.6% within the first 30-days post SNF discharge with their medication reconciliation program. Emergency department visits also decreased post-intervention by 47.1% at 3 months and 48.2% at 6 months in the study completed by Lee et al. (2015). Park et al. (2013), reported that with the creation of the discharge clinic, ED rates within the 30 days after SNF discharge dropped from 31% to 20%. Wee et al. (2015) implemented a new discharge process known as the ACTION program for elderly patient that had limited social support or complex care needs. At baseline, the ACTION group had a higher rate of ED visits compared to the control group in the 6 months prior to the index hospitalization (97% vs 90%). After implementation of the ACTION program, ED visits were decreased at both 30-days (19.3% vs 32%, $P < 0.001$) and 180-days (46.3% vs 57.9%, $P < 0.001$) when compared to the control group (Wee et al., 2014).

Strength and Weaknesses of Literature

One of the strengths of the studies by Berkowitz et al. (2013), Delate et al. (2008), Farrell et al. (2015), Park et al. (2013), and Reidt et al. (2016) was that the studies had similar demographics and clinical characteristics at baseline between the pre- and post-intervention groups. The findings by Berkowitz et al. (2013), Delate et al. (2008), Farrell et al. (2015), and Park et al. (2013) lent weight to the conclusion and showed consistency of findings in their hypotheses.

A weakness of the all the studies reviewed was that they were not randomized. The study conducted by Brener et al. (2016), Carnahan et al. (2017), and Wee et al. (2014) was a retrospective secondary data analysis and did not include a pre/post-intervention group. The study by Huntington et al. (2013), may have been influenced by selection bias as it was not randomized, blinded, or placebo-controlled. Results may have been positively skewed as more adherent patients may have been more willing to enroll in the study compared to patients that were unable or unwilling to manage their disease (Huntington et al., 2013). The studies by Berkowitz et al. (2013), Carnahan et al. (2017), Park et al. (2013), and Reidt et al. (2016) and Low et al. (2015), may not have captured the true success of their interventions in decreasing rehospitalization or ED visits as they did not assess whether the patient was seen at other healthcare facilities. Farrell et al. (2015), did not measure the percent of patients contacted by care managers who received timely outpatient follow-up which may have correlated to its effectiveness in decreasing hospitalization rates. Brener et al. (2016), Carnahan et al. (2017), and Wee et al (2014) all used outcome selected from quality databases. This study may have been compromised by casual inferences as there may have been other variables that influenced the outcomes not addressed in the study. Finally, the results of the studies reviewed in this literature review was hard to generalize to other patient populations as they were either performed within one hospital system or SNF. Each of the studies reviewed were completed in urban settings, therefore results cannot be generalized to rural communities who may have limited resources.

Summary of Literature

These studies recognize that improving the transition of care from both the acute care setting and the subacute setting to the community is important to improving patient outcomes. However, improving SNF to community transitions remains a challenge as few studies addressed this problem and the interventions implemented in the completed studies differ. While more

studies have been completed to assess the transition from acute care to the community, interventions used to improve transitions varied greatly in each study. Clear data on patient characteristics that lead to a higher risk of ED visits, hospital readmissions, or other adverse outcomes, or which interventions have had the most impact on improving patient outcomes has not been addressed.

Of the articles reviewed, several interventions were identified to help reduce adverse outcomes. One intervention was the completion of a medication reconciliation by a pharmacist or provider. However, results showed that this intervention did not have an impact on decreasing ED visits or rehospitalizations (Delate et al., 2008; Reidt et al., 2016). Another intervention was early outpatient follow-up in either the form of home health or primary care visits. Early outpatient follow-up with home health was shown to help prevent ED visits and rehospitalization, but early follow-up with the PCP was not shown to improve these outcomes (Carnahan et al., 2017). However, the use of transition management by a case manager within a PCMH to assist with facilitating timely post-discharge follow-up (within 1 week) was found to improve both hospital readmission rates and delay the time between hospital discharge and readmission for patients (Farrell et al. 2015). Brener et al. (2016), assessed whether in-hospital visits by the primary care provider decreased rehospitalizations and ED visits. While results showed that the patients were more likely to be rehospitalized, ED visits among this group were decreased and they had a higher number of PCP visits after hospital discharge (Brener et al., 2016). The last intervention implemented in the reviewed studies was improving the discharge process at either the acute care or SNF facility. Although the discharging processes used differed in the studies completed by Berkowitz et al. (2013), Huntington et al. (2013), Low et al. (2015)

Park et al. (2013), Wee et al. (2014) they shared the common themes of improved patient education, medication reconciliation, and improved communication to the community PCP.

These studies have shown that improving the transition of care to the community is a complicated issue and often requires multiple interventions. More research is needed on this topic to show which interventions have the greatest impact on improving patient outcomes and to assess the validity of the interventions tested in the literature mentioned above.

Evidence Based Practice: Verification of Chosen Option

In accordance with Joint Commission requirements, the discharge packet will include the following information: 1) reason for SNF admission, 2) significant findings/summary of patient stay, 3) any procedures or treatment that occurred during the stay, 4) list of patient's diagnoses 5) patient's discharge condition, 6) medication list 7) patient and family instructions, and 8) medical provider's name and contact information (HHS, 2018; Kind & Smith, 2008). Although the IMPACT act does not have a time requirement on when the discharging patient information must be transmitted, the discharge packet was sent to the care transition center at the university health system within 24 hours of the patient's discharge from the SNF facility as recommended in other literature (Lindquist et al., 2016). Upon receipt of the discharge packet, the care transition center was responsible for contacting the patient to schedule a discharge follow-up appointment with their PCP within 14 days and ensure that the PCP has access to the discharge information.

Theoretical Framework

To help implement the proposed change of this quality improvement project, the Rosswurm and Larrabee (R&L) model for evidenced-based practice was used. The R&L model helps guides medical practitioners through the process of incorporating evidence-based practice,

beginning with a needs assessment for the change to integration of the evidence-based protocol (Rosswurm & Larrabee, 1999). This model consists of 6 steps: 1) Assess the need for change in practice, 2) link the problem, interventions, and outcomes 3) synthesize best evidence 4) design practice change, 5) implement and evaluate, and 6) integrate and maintain change in practice (Rosswurm & Larrabee, 1999).

Utilizing this model, the project was defined into 6 steps. In the first step, assessing the need for change, the problem of inconsistent communication of pertinent patient information between health care providers during the transition from a SNF to the community was identified. Stakeholders of this project included the medical providers at a university health system whom sought to improve patient outcomes by improving communication during care transitions. Social workers at the SNF were also stakeholders in this QI project as they were responsible for ensuring that the discharge packet was sent to the care transition center. Finally, the last stakeholders in this QI project were the patients since ensuring the transfer of the discharge packet could improve patient safety by preventing ED visits, rehospitalization, medication errors, and repeated laboratory or diagnostic tests. In the second step, the outcomes of this project were identified. The first outcome measured physician satisfaction with the receipt and quality of information received pertaining to the patient's SNF stay. The second outcome measured the rate of patients that complete their post-SNF follow-up visit within 14 days of discharge. Finally, the third outcome assessed the rates of ED visits and rehospitalization that occur prior to primary care follow-up. For the third step, a literature review was performed to evaluate the current strengths and weakness of studies that have been performed on improving care transitions between SNF and the community. During the literature review, a gap of available knowledge on this topic and specific intervention, using a care transition center, was identified. However, with

the hope of decreasing adverse patient outcomes by improving communication between providers during care transitions, the decision was made to proceed with the proposed quality improvement project. In the fourth step of the R&L model, the project design was created to guide the care of the patient's that meet the criteria to be included in this quality improvement initiative. A comprehensive review of the project design is included in the section below. In the fifth step, implementing and evaluating change, the data collected was analyzed to determine to what extent the facilitation of patient information from the SNF to the PCP impacted patient follow-up, ED visits, and re-hospitalization in the first 14 days post-SNF discharge. Upon the collection of patient data, surveys from both the medical providers and the social workers were collected. In the sixth step, integrating and maintaining change, the results of the QI initiative were discussed with the SNF facility determine whether the new practice should be adopted as a standard of care for all future patients.

Project Design

This quality improvement project used a post-test design focusing on improving the transmission of patient information between the SNF and community PCP. Provider satisfaction with the quality of information provided in the SNF discharge packet was assessed using a survey post-intervention implementation. Additionally, this QI project assessed the effectiveness of utilizing a care transition center to schedule follow-up visits with a primary care provider within the first 14 days after SNF discharge and assessed the rates of ED visits and rehospitalization rates prior to PCP follow-up.

This project was chosen because multiple studies have shown that patients are extremely vulnerable to adverse events during transitions of care (Carnahan et al., 2017; Lindquist et al., 2016; Park et al., 2013). However, little research exists on how to improve care during the

transition from a SNF to the community. The project quantified the outcome of interest, post-SNF primary care follow-up appointments, by measuring rates of follow-up appointments with PCP's that occurred within the first 14 days after SNF discharge, as well as any ED visit or hospitalizations that occurred during the specified timeframe.

Physician satisfaction with the discharge paperwork packet was measured after all follow-up visits had been completed. A survey was sent to the providers whom received patients from the skilled nursing facility to assess if: 1) all discharge paperwork was available to be reviewed before the follow-up visit, 2) any paperwork from the discharge packet was consistently missing, 3) any further information needed from the SNF that would improve patient care in the transition to the outpatient setting, and 4) satisfaction with the creation of the care transition center in regards to improving the transfer of patient information and communication between medical providers.

Project Site and Population

This quality improvement project occurred at a suburban skilled nursing facility in the Midwest that provides both independent and assisted care, memory care, skilled nursing care, and long-term care for adult patients. All patients in this study were over 50 years of age. The medical providers, geriatricians and nurse practitioners, were employed by a large university health system in the Midwest to provide post-acute care at the facility. Two social workers and one social work aide employed by the facility were responsible for coordinating discharge services. In this QI initiative, the social workers were responsible for ensuring the transmission of the discharge paperwork to the care transition coordinators at the university health system.

To be included in this project, the patients must have received rehabilitation services, been discharged to the community or reside in an independent-living or assisted-living community and followed with a PCP at the university health system in either the internal or

family medicine clinics. Additionally, participants were required to be over 18 years of age and English speaking. Patients discharged to the community, independent-living, or assisted-living and whose PCP was not part of the university health system, patients whom resided in the memory care, long-term care, or were not discharged to the community (readmitted to hospital, transition to LTC, change skilled nursing facilities) were not included. Additionally, patients with cognitive deficits that rendered them unable to make their own medical decisions were not included.

Setting Facilitators and Barriers

The medical providers at the skilled nursing facility were part of the university health system. Besides providing in-patient care, these providers routinely had clinic hours where they were responsible for providing primary care services for patient's in the community setting. This university health system had recently implemented a Care Transitions Center to improve the transfer of information between healthcare providers involved with patient care among all health care settings. The Care Transition Center was responsible for receiving patient information from all medical providers or facilities that are not associated with the university health system. The individuals that worked in the center were then responsible for ensuring that the patient information was sent to the correct provider, that the provider had information regarding a summary of the care the patient received by the outside physician or facility, and that any additional follow-up needed with physicians within the university system was scheduled in a timely manner. All these factors helped facilitate the project implementation.

Barriers to this project included ensuring all patient information included in the discharge packet was faxed and received the care transition nurses. Other barriers included the availability to reach the discharged patients to facilitate a follow-up appointment and verify medications,

availability of PCP's schedule for feasibility of the follow-up appointment within 14 days, and availability of patient transportation to the PCP appointment.

Implementation Plan and Procedures

Measurement Instruments

To measure physician satisfaction, a post-implementation survey was sent via REDCap to PCPs whom had received patients during the quality improvement initiative. To measure the second outcome, discharge follow-up visits completed within 14-days post SNF-discharge, a retrospective chart review was completed for the individuals who met the inclusion criteria to assess the rate of discharge follow-up within the specified timeframe. The chart review collected data to determine if the patient had any ED visits or was readmitted before their follow-up appointment. Finally, a short two question survey was administered to the social workers at the skilled nursing facility to determine how feasible the new discharge process was to their workflow and if any barriers to the process had been identified.

Data Collection Procedure

To guide this QI project, the Plan, Do, Study, Act (PDSA) cycle was used. This model is used for action-oriented learning (Agency for Healthcare Research and Quality [AHRQ], 2015). This cycle consists of 4 steps: 1) Plan – Plan the test or observation, including the plan for collecting data, 2) Do - complete the observation on a sample population, 3) Study – analyze the data and study results, and 4) Act – refine the change based on the results (AHRQ, 2015).

Step 1: Plan

Ensured all SNF providers have access to the discharge paperwork that includes all the requirements listed below. Educated SNF providers and social workers on the plan of the QI project and who to contact with questions.

Step 2: Do

Initiate the QI initiative. At time of discharge, patients with a PCP at the university health system were identified by the nurse practitioner. The nurse practitioner was responsible for completing the discharge summary 24-48 hours prior to the discharge. The handwritten discharge summary included the following components: reason for SNF admission, summary of patient stay, procedures or treatment that occurred during the stay, patient's discharging condition, final medication reconciliation, patient and family instructions, and the medical provider's name and contact information. The social worker was responsible for including an updated medication list in the discharge packet 24 hours prior to discharge and for faxing the complete discharge packet to the care transition center at the university health system no later than 24 hours after patient discharge. Once the discharge information was received by the care transition center at the university health system, a care transition coordinator was responsible for scheduling an appointment with the outpatient PCP within 14-days of the SNF discharge. On discharge from the SNF, the patient's discharge date, name, and date of birth was written down to perform a retrospective chart review upon completion of the QI project. This information was stored as a password protected document on a secured drive at the university health system. After data was collected on 10 patients, a retrospective chart review occurred to identify the rate of patients that completed their follow-up appointment with their PCP within 14-days after SNF discharge. This chart review also assessed if the patient visited the ED or was readmitted prior to the post-discharge follow-up. Post-implementation provider surveys were sent to providers who were identified to have patients that participated in this QI project to assess their satisfaction with the new discharge process and care transition center.

Step 3: Study

In this phase, results obtained from the QI initiative were analyzed to assess the rate of patients that completed their follow-up visit with 14-days after being discharged from the SNF and any ED use or rehospitalization that occurred prior to PCP follow-up. Data obtained from the follow-up rates and the physician satisfaction surveys were placed in charts and graphs to assist with interpretation of the results. Qualitative data was obtained from the social workers at the skilled nursing facility to assess the feasibility of continuing the new discharge process and any additional facilitators or barriers that need to be addressed in the discharge process.

Step 4: Act

Once the data had been analyzed the decision to implement a standardized discharge packet for patients at all the preferred provider SNF facilities for the university health system was made.

Cost-Benefit Analysis/Budget

Benefits of this QI initiative included: improved care transitions and decreased hospital admissions or ED visits within the 14-days after SNF discharge. There were no identified costs to the implementation of this QI initiative as it primarily includes redefining roles in the discharge process at the SNF facility and the presence of the care transition center is already present within the university health system.

Ethical Considerations/Protection of Human

The University of Kansas Medical Center (KUMC) Internal Review Board (IRB) approval was obtained prior to initiating the DNP project (See Appendix B). All participants that were involved in this quality improvement project were protected by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) which guarantees the protection and

privacy of patients' health information. All information collected did not contain any patient identifiers. To provide patient confidentiality, participants were assigned an individual number. The list of participants and their identifying numbers were stored on a secure drive at the health system server. Access to the information was password protected and only be available to the facilitator of the DNP project. Post-implementation surveys data was collected via REDcap and stored on the health system server

Results

Data Analysis

The rates of patients receiving PCP follow up within the specified timeframe was evaluated and reported as the number of patients that followed-up with their PCP divided by the number of patients that did not follow-up with their PCP. Rates for the ED visits and rehospitalizations were evaluated and reported in the same manner as above. A descriptive analysis was used to assess survey results.

Chart Review Results

Data from 10 patients discharged from the SNF facility was collected via retrospective chart review (See Appendix C). Of these patients, 60% completed their follow-up visit with-in 14 days after SNF discharge. Data also revealed that 90% of the patients did not visit the ED and were not hospitalized with-in the same timeframe.

Survey Results

The Post-QI Implementation Survey was emailed to 9 PCP's via REDCap (See Appendix D). During a two-week timeframe, five surveys were completed. Of the survey's returned, three of the five providers stated that discharge information was available for review prior to the follow-up visit. Four out of five providers stated that some discharge paperwork was commonly missing (See Appendix E). Among the missing paperwork; four stated that patient care

instructions were not included, three stated that the discharge medication list was not included, two said that lab/diagnostic testing follow-up and additional scheduled appointments were not included, and one stated that SNF summary and discharging provider's contact information was not included. None of the providers said that the reason for SNF stay was not included. Of the providers that responded to the survey, three stated that they were neither satisfied or dissatisfied and two stated they were satisfied with the quality of the information received in the discharge packet. One provider noted that it would be beneficial to know if the patient was discharged with any home health services, including physical therapy. All five of the providers agreed that the care transition nurse has helped improve communication between providers during periods of care transition.

Of the social work surveys sent to the social workers and the social work aide, two of the three surveys were returned (See Appendix F). Both respondents agreed that the discharge process was feasible to continue. Neither identified any barriers to implement this new process. One respondent noted that it would be beneficial to receive an email from the PCP office/care transition center to be notified that the information was received.

Discussion of Project Results

Impact of Results on Practice

Chart review findings from the quality improvement project showed that utilizing the care transition center had a rate of 60% patient follow-up with their PCP within two weeks after discharge from a SNF facility. Rates of ED utilization and rehospitalization for this group was low at only 10% (or 1 out of 10 patients). The surveys also showed that providers thought the care coordination center did help with communication between providers, but noted that some

information continued to be missing. Lastly, the social workers who were responsible for transmitting the information between providers, felt like the process was feasible to continue.

It is difficult to assess the full impact that the standardized discharge packet and the care transition center has on improving physician satisfaction with communication and the rates of patient follow-up. During the chart review, not all the patients who completed a follow-up within the specified time frame had a care transition note entered in their charts. Also, not all the patients that did follow-up within the specified time frame had the discharge paperwork uploaded into the charts for the providers to access and review. This QI initiative was completed over a two-month period and many of the PCP's only had one patient that was included. As these providers were responsible for seeing many patients, it may be hard for them to recall the exact information included in the discharge packet, which makes it difficult to know to what extent the discharge packet helped aid in provider communication.

As a result of the findings of this project, the SNF will continue to send all patient discharge information to care transition center. At this time, no decision has been made to implement this process at the other SNF's staffed by the university health care providers. Further discussion is needed between the SNF and the care transition center to best determine how to ensure that all discharged patients are being contacted and their discharge information is being uploaded into the electronic health record (HER) prior to their PCP follow-up visit.

Limitations

Limitations to the project included the low number of patients involved and that no baseline data was collected to compare to the data gathered from the QI initiative. As the data was collected over a two-month period and most providers only had one patient included, it would be hard for them to recall what information was available for them to review prior to seeing the patient. It is more likely that the provider was offering their opinion on what medical

information is commonly received on patients that are being discharged from SNF's and are under their care. Furthermore, although information was sent to the care transition center, not all patients had notes entered or documents uploaded to the EHR. When the discharge paperwork is not uploaded to the patient's EHR, the information is not available for the provider to review prior to the patients visit. This signifies that ongoing exploration and communication is needed with the care transition center to clarify what process is in place ensuring that patient documents are uploaded to the EHR and if any changes need to be made.

Plan for Dissemination of Project

Results of this QI initiative were shared with the medical providers at the SNF to determine whether to continue to use the standardized discharge packet and to determine the best way to ensure that patient information would be transferred to the community PCP. Furthermore, information regarding this QI initiative will be displayed during a public presentation for DNP students at the university medical center to help disseminate the findings to the health system's medical community.

Future Implications for Practice

Based on the chart audit and survey results of a small population of patients discharged from SNF to the community, it can be determined that utilizing care transition coordinators helped improve communication between providers and prevented ED or hospital readmission within 14 days after SNF discharge. However, it was not evident if utilizing the care transition center helped facilitate patients with their follow-up appointment within 14 days after SNF discharge. It is recommended that the SNF providers, PCP's, and the care transition center continue to communicate on how to better facilitate the transfer of information to ensure that transition notes are being entered and patient documents are being uploaded to the EHR for providers to review.

Conclusion

In summary, the increasing use of SNF's after an acute hospitalization has led poor communication and fragmentation of care when the patient discharges back to the community (Park et al., 2013). Due to their medical complexity, these patients are at a high risk to experience adverse drug event, ED visits, and hospital readmission (Carnahan et al., 2017). Few studies have attempted to improve the transition between SNF and the community. Of the research articles presented in the literature review, the common themes identified to help decrease adverse outcomes were improving medication reconciliation among SNF patients and improving the SNF discharge process.

This quality improvement project helped demonstrate that with the use of a care transition center, communication between the SNF provider and the community PCP can be improved by ensuring pertinent patient information is included in the discharge packet and available for the PCP to review prior to the follow-up visit. It is unclear whether utilizing a care transition center can help increase PCP visits and decrease the amount of ED visits and rehospitalizations immediately following SNF discharge as baseline data was not collected. Feedback from stakeholders showed that it would be beneficial for confirmation a message to be sent from the care transition center to ensure that all documents sent from the SNF were received. Due to the complexity of transmitting patient health information between health care settings, it is recommended that further communication occur between the SNF and the care transition center on how to ensure that all patient information being transmitted from the SNF is being received by the health system and that the patient's health information is being uploaded to their electronic health records within a timely manner for providers to review.

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Appendix 1**Data Collection Tool**

Patient #	PCP follow-up w/in 14 days of d/c (Yes/No)	ED visit prior to follow up (Yes/No)	Rehospitalized prior to follow up (Yes/No)
1	No	No	No
2	No	No	No
3	Yes	No	No
4	No	Yes	Yes
5	Yes	No	No
6	Yes	No	No
7	Yes	No	No
8	Yes	No	No
9	Yes	No	No
10	No	No	No

Appendix 2

Post-QI Implementation Provider Survey

1. Was discharge information available for review prior to follow-up visit?
 - a. Yes
 - b. No

2. Was any discharge paperwork commonly missing?
 - a. Yes
 - b. No

3. If you answered yes to number 2, which information was commonly missing?
 - a. Reason for SNF stay
 - b. Summary of SNF stay
 - c. Discharge medication list
 - d. Lab/diagnostic testing follow-up
 - e. Additional scheduled follow-up appointments
 - f. Patient care instructions
 - g. Discharging provider's contact information

4. On a scale of 1-5 how satisfied were you with the quality of information you received in the discharge packet from the Skilled Nursing Facility?

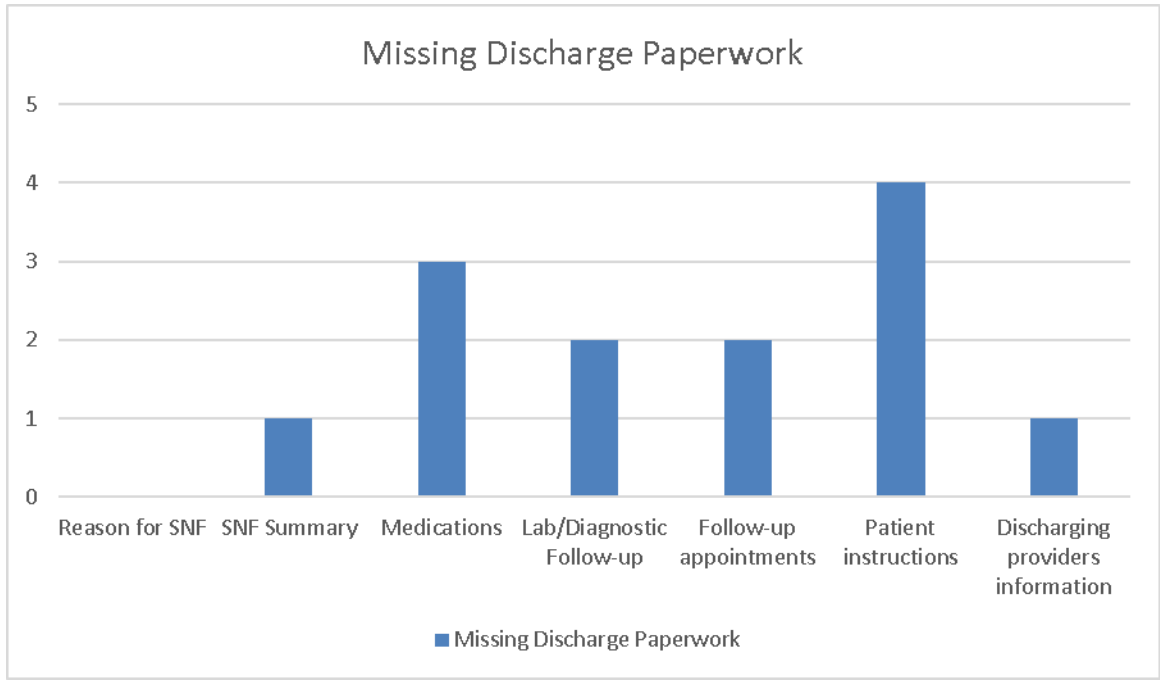
1	2	3	4	5
Very Dissatisfied	Dissatisfied	Neither Satisfied or Dissatisfied	Satisfied	Very Satisfied

5. Would any additional patient information be helpful to receive from the discharging provider at the SNF? If yes, please describe below.

6. Would you agree that the care transition center has helped improve communication between discharging skilled nursing facility medical providers and the community PCP's by ensuring medical records from the patient's SNF stay are available for your review?
 - A. Yes
 - B. No

Appendix 3

Commonly Missing Discharge Paperwork



Appendix 4

Social Work Follow-up

1. Do you believe it is feasible to continue this new discharge process? If no, please explain why (i.e. increased in work load, time constraints, etc.)
2. Can you identify any barriers or facilitators that may impact the decision to continue to use this new discharge process?