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Creating Focused Occupational Therapy Interventions for Clients with Heart Failure in Skilled Nursing Facilities

In Hwa Chae *Dominican University of California*

Camille Marcia Schilling *Dominican University of California*

Elena Ruth Vaccaro *Dominican University of California*

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In Hwa Chae, Camille Marcia Schilling, and Elena Ruth Vaccaro
Candidate

Julia Wilbarger, Ph.D., OTR/L
Program Chair

Gina Tucker-Roghi OTD, OTR/L, BCG
First Reader

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by

In Hwa Chae, Camille Schilling, and Elena Vaccaro

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Dominican University of California

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Abstract

The ultimate goal of the SNF is to help clients stabilize their medical conditions and attain their therapy goals so that they can return home (Orr, Boxer, Dolansky, Allen, & Forman, 2016). However, approximately 27% of heart failure (HF) clients are readmitted to the hospital after being discharged from the SNF (Allen et al., 2011). High readmission rates may be due to the cognitive (Dickson, Tkacs, and Riegel, 2007), psychosocial (Halliday, 2010), and lifestyle barriers (Maeda, Shen, Schwarz, Farrell, & Mallon, 2013) HF clients face. However, interventions in the SNF tend to emphasize activities of daily living (ADLs) and therapeutic exercise (Rafeedie, Metzler, & Lamb, 2018). This project aims to create and implement a clinical pathway for occupational therapists (OT) within SNFs, in order to address patient barriers and improve the quality of care.

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Introduction

Heart failure (HF), is a condition of impaired cardiac function resulting in poor blood supply to the rest of the body. Individuals with HF are commonly seen in the SNF (Orr, Boxer, Dolansky, Allen, & Forman, 2016). Along with physical impairments such as fatigue and shortness of breath, individuals with HF may experience cognitive decline and impairment (Alagiakrishnan, Mah, Ahmed, & Ezekowitz, 2016; Evans, 2016; Jefferson, 2010), as well as psychosocial distress such as depression and hopelessness (Norberg, Boman, Löfgren, & Brännström, 2014) which lead to decreased lifestyle management of HF symptoms.

After hospitalization due to an illness or injury, 22.3% of individuals will be discharged to a post-acute care setting in order to continue recovery, improve functional status, or manage chronic conditions and illnesses. Of these individuals, 40.5% will be discharged to a skilled nursing facility (SNF) with the overall goal of returning home (Tian, 2016). However, readmission rates to hospitals within 30 days of discharge from the SNF have been increasing in recent years (Mor, Intrator, Feng, & Grabowski, 2010). In particular, congestive heart failure is one of the most common conditions associated with hospital readmissions (Mirkin, Enomoto, Caputo & Hollenbeak, 2017). Congestive HF clients discharged from a SNF are at the highest risk for hospitalization when compared to those discharged to home, home nursing, or to another setting (Mirkin et al., 2017). Due to changes in Center for Medicare and Medicaid Services (CMS) policy, SNFs with high readmissions rates within 30 days post-discharge will face penalties in revenue and reimbursement. As a result, SNFs will be rewarded for delivering the most effective and efficient forms of treatment to control costs and improve outcomes. Efficient forms of treatment may include increased use of concurrent and group modes of therapy.

OT interventions in SNFs are often focused on treatments emphasizing activities of daily living (ADLs) and therapeutic exercise, while lifestyle management, cognitive and psychosocial

interventions are overshadowed (Rafeedie, Metzler, & Lamb, 2018). An evidence-based clinical pathway containing cognitive, psychosocial and lifestyle-based interventions tailored to HF clients will provide OT practitioners with a framework to address factors that are shown to support successful discharges, result in improved client outcomes, and lead to a reduction in preventable readmissions to the hospital.

Literature Review

Heart Failure

5.7 million people in the United States are currently diagnosed with HF, and 670,000 new cases are diagnosed each year (Ambrosy et al., 2014). HF is the leading cause of hospitalizations in people over 65 years (Díez-Villanuvea & Alfonso, 2016). According to Mozaffarian et al. (2016), HF occurs in 1% of the population 65 years or older. Approximately 20% of hospitalized HF clients discharge to the SNF to stabilize their medical conditions and attain therapy goals to return home (Orr et al., 2016). These individuals tend to be older, frailer, and have comorbidities (Orr et al., 2016). Clients diagnosed with HF are readmitted to the hospital within 30 days after their discharge from the SNF, at a rate of approximately 27% (Allen et al., 2011). Likewise, 30-day readmission rates following discharge from the acute hospital are also high in individuals with HF as a secondary condition (Orr et al., 2016).

Physical impairment in HF. HF is a chronic condition caused by the heart's inability to maintain sufficient output resulting in reduced oxygen and nutrient-rich blood to the rest of the body (American Heart Association [AHA], 2017). To try to keep up with the required workload, the heart develops more muscle mass, enlarges, and pumps faster to increase output (AHA, 2017). Blood vessels narrow to maintain blood pressure, and blood is redirected from lesser organs such as skeletal muscle and the kidneys to favor the heart and brain (AHA, 2017). These compensation mechanisms can conceal the signs and symptoms of HF for years (AHA, 2017). Eventually, the compensation mechanisms lose the ability to continuously support increased output and symptoms such as dyspnea, coughing, wheezing, edema, weight gain, fatigue, nausea, confusion, and increased heart rate will arise. Clients with HF may also experience cardiac and peripheral abnormalities, which reduces exercise tolerance and may lead to muscle weakness and decreased physical activity (Churilla, Richardson, Pinkstaff, Fletcher, & Fletcher, 2016). The

physiological changes, symptoms, and decrease in physical activity will lead to decline in client performance of ADLs and the loss of independence (Churilla et al., 2016). Change in functional ability is often the first sign alerting the client to the presence of HF (AHA, 2017; Evans, 2016), but unfortunately physical and cognitive impairments have already occurred (AHA, 2017).

Cognitive impairment (CI) in HF. HF's impact on cognition can greatly affect a client's occupational performance and is a likely contributor to hospital readmission (Dickson, Tkacs, & Riegel, 2007). HF is associated with brain structural changes which result in cognitive decline and impairment such as delirium, mild cognitive impairment (MCI), and dementia in older adults (Alagiakrishnan et al., 2016; Evans, 2016; Jefferson, 2010). Low cardiac output decreases vascular blood flow and impairs cerebral vessel activity in the brain (Dardiotis et al., 2012; Pan et al., 2013). This causes microembolism and cerebral hypoperfusion which both lead to atrophy in multiple regions of the brain (Dardiotis et al., 2012; Pan et al., 2013). The structural changes associated with HF impair cognitive domains such as memory, attention, executive function, language, visuospatial abilities, and psychomotor speed (Alagiakrishnan et al., 2016).

Deficits in cognitive function greatly affect independence in instrumental activities of daily living (IADL), including health management and maintenance skills important for managing HF (Alagiakrishnan et al., 2016; Coppin et al., 2006). Specifically, impairments in memory and attention may affect management and adherence with medication schedules (Dickson et al., 2007). Taking medications is a crucial part of self-care for HF clients. Low medication adherence is associated with condition exacerbations, a decline in physical functioning, admission to the hospital, and death (Ruppar, Cooper, Mehr, Delgado, & Dunbar-Jacob, 2016). In addition, impairment in executive functioning impacts the information processing required to learn symptom management skills and monitor, recognize, interpret, and act upon subtle changes in symptoms like fatigue and fluid retention (Dickson et al., 2007). To prevent condition exacerbation, changes in symptoms must be detected and reported as soon as

possible, however treatment delays usually range from 3-7 days (Schumacher, Hussey & Hall, 2018). Delayed medical care increases the likelihood of readmission to the hospital and mortality (Jurgens et al., 2015). Mild cognitive impairment in HF clients may not be obvious to healthcare providers, but can still contribute to difficulties in learning condition management skills (Cameron et al., 2010). The utilization of sensitive cognitive assessments is imperative in order to assess a HF client's ability to learn and manage his or her condition.

Cognitive assessment for heart failure. Older HF clients and caregivers often assume cognitive impairment is a part of the normal aging process, and fail to recognize CI as a symptom of HF (Alagiakrishnan et al., 2016). These assumptions, combined with inconsistent cognitive screening administration, makes early detection of CI in older clients challenging (Alagiakrishnan et al., 2016). OT practitioners use the Mini Mental Status Examination (MMSE), St. Louis University Mental Status Examination (SLUMS), and the Montreal Cognitive Assessment (MoCA) to detect CI in HF clients (see Table 1) (Li & Myers, 2015).

Table 1 Commonly used cognitive assessments for heart failure clients to detect cognitive impairment and sensitivity to detect mild CI (MCI)

Cognitive assessment	Type of CI	Sensitivity to detect MCI
Mini Mental Status Examination (MMSE)	Chronic CI, MCI, and dementia	Poor
St. Louis University Mental Status Exam (SLUMS)	MCI and dementia	More sensitive than MMSE
Montreal Cognitive Assessment (MoCA)	Chronic CI and MCI	High

Note. Different screening tools and assessments can be used to detect cognitive decline based on the type of CI: chronic and mild CI (MCI) can be measured with the MMSE and the MoCA, chronic CI and dementia can be measured with the MMSE, and MCI and dementia can be measured with the SLUMS (Alagiakrishnan et al., 2016; Stewart, O'Riley, Edelstein, & Gould, 2012)

The MMSE is used as a general cognitive screening instrument with 11 questions, which assesses domains of cognitive functioning including orientation, short-term and long-term memory, attention, concentration, language skills, and visual construction (Stewart et al., 2012).

However, the MMSE has poor sensitivity and does not effectively detect MCI, especially within individuals with higher levels of education (Stewart et al.,2012).

The SLUMS has 11 items to assess domains of cognitive function, including language, attention, executive function/planning, and visuo-spatial abilities (Stewart et al., 2012). As shown in Table 2, the SLUMS scoring is adjusted based on the individual's education level (Stewart et al., 2012). The SLUMS is more sensitive at detecting MCI among highly educated individuals compared to the MMSE (Stewart et al., 2012). Additionally, the SLUMS distinguishes MCI from dementia.

When compared to the MMSE and the SLUMS, the MoCA has the highest sensitivity in detecting CI. The MOCA assess 8 cognitive domains, including short term memory, visuospatial abilities, executive function, attention, concentration, working memory, language, and orientation to time and place (Stewart et al., 2012). The MoCA does not distinguish MCI from dementia; instead, it indicates the severity of CI (see Table 3) (Chertkow, Nasreddine, Johns, Phillips, & McHenry, 2011). The MoCA utilizes adjusted scoring based on client's education. The MoCA is available in 27 languages and has a modified version for individuals with visual impairment (Stewart et al., 2012), and the assessment is highly sensitive to detect CI in a variety of health conditions including clients with cardiovascular disease (McLennan, Mathias, Brennan, & Stewart, 2011). Using appropriate assessments and standardized testing to learn about cognitive status and detect signs of CI in older clients can affect mortality and readmission rates of HF clients (Alagiakrishnan et al., 2016; Jurgens et al., 2015). The MoCA is an effective screening tool for OT practitioners in SNFs to detect CI in clients with HF who have a different language and educational backgrounds. As of September 1st, 2019, any health professionals or workers who complete MoCA's Official standardized training and certification program can administer, score, and interpret the MoCA test result.

Table 2 The SLUMS cutoffs for severity of CI based on the level of education of an individual

	Level of Education	
Severity of CI	<High school education	≥High school education
MCI	20-24	21-26
Dementia	≤ 19	≤ 20

Note. The SLUMS uses a 30-point scale with the different cutoffs based on the level of education of an individual.

Table 3 The MoCA cutoffs for severity of CI in a 30-point scale

Severity of CI	Scores cutoff
No cognitive deficits	≥26
Mild CI	18-25
Moderate CI	10-17
Severe CI	≤9

Note. The MoCA instructs to use revised education corrections on the total score. Add one point on the total score for an individual with 10 to 12 years of education and two points for an individual with four to nine years of education for accurate scoring (Chertkow et al., 2011).

Psychosocial disruptions in HF clients. Cognitive impairment (CI) negatively affects executive and cognitive functioning resulting in a disruption of a HF client's ability to plan, monitor, and execute goal-oriented actions. As a result, HF clients experience a loss of autonomy and independence when performing ADLs and IADLs (Alagiakrishnan et al., 2016; Coppin et al., 2006). Changes in autonomy, physical ability, and overall occupational performance can trigger emotional distress, incompetence, and hopelessness in older HF clients (Norberg et al., 2014). Also, the severity of HF symptoms correlates to physical limitations which lead to loss of work, social, and family roles, as well as decreased engagement in meaningful activities which once gave purpose and satisfaction in life (Stewart et al., 2012). The loss in purpose and satisfaction in life and reduced engagement in all occupational domains including instrumental, leisure, and social activity participation, triggers depression and cognitive impairment (Foster et al., 2011). Emotional distress and hopelessness from the loss of

roles and decline in occupational performance can exacerbate the physical signs and symptoms of HF (Halliday, 2010). Despite the psychosocial impacts of HF, physical disabilities and symptoms tend to be emphasized in medical treatment (Foster et al., 2011).

Treating the psychosocial aspects of HF clients requires a holistic view of the client, environment, and activity to address all factors relating to occupational performance (Halliday, 2010). OT practitioners facilitate occupational performance by considering performance patterns such as habits, routines, roles, and rituals, as well as changes in social roles and physical abilities. Additionally, OT practitioners modify activities according to the client's current ability level, while also addressing potential distress caused by visible changes to activity performance (Norberg et al., 2014). In order to treat HF clients holistically, OT practitioners should make sure to determine all areas of occupational performance that client's have had to change or give up entirely.

The Occupational Profile. The occupational profile assists OT practitioners in treating HF clients holistically. The occupational profile, a required part of OT evaluation, is a summary of a client's life history, performance patterns, interests, values, and needs and can be collected informally or through formal assessment (American Occupational Therapy Association [AOTA], 2014). Whitney (2017) describes the occupational profile as a guide to organizing the OT practitioner's clinical reasoning for implementing informed interventions. It facilitates client centered care by preventing the OT practitioner from assuming needs based solely on the client's diagnosis (Whitney, 2017). The occupational profile can assist OT practitioners with creating holistic interventions promoting client psychosocial well-being.

The Activity Card Sort (ACS). The Activity Card Sort is a tool to support the occupational profile process. OT practitioners tend to focus on ADLs and physical conditions during interventions with HF clients instead of conducting client-centered assessments to understand the meaningful activities of the clients (Halliday, 2010). Individuals with cardiac

disease are likely to have a comorbidity of major depression which can negatively affect physical and cognitive energy levels, concentration, sleeping, eating habits, and reduced engagement in activities (Leibold, Holm, Raina, Reynolds, & Rogers, 2014). OT practitioners can address ADLs, IADLs, and most importantly they can support and address habits, social participation, and leisure activities that are meaningful for clients through a client-centered interview using the ACS, a standardized assessment tool containing 80 color photographs of older adults engaging in activities. The activities are categorized into four domains including instrumental, low-demand leisure, high-demand leisure, and social (Leibold et al., 2014). Everard, Lach, Fisher, and Baum (2000) discovered the positive relationships in the engagement of the activities in the ACS domains through a cross-sectional study on 244 members of an organization for older adults. The researchers found the continuation of instrumental, high-demand leisure, and social activities were positively related with physical health, and engagement in low-demand leisure activities was positively associated with mental health of older adults (Everard, Lach, Fisher, & Baum, 2000). As they age, older adults' participation may decline in activities that are not essential for survival such as leisure and social activities. The decrease in the engagement in these activities may result in functional limitations and disability (Everard et al., 2000). Older clients with HF conditions who have depression are more vulnerable to decline in leisure and social activities because of their physical and psychosocial limitations. This disengagement in activities may lead to further decline in physical and mental health and functionality in the occupational performance of clients with HF.

By utilizing the ACS, OT practitioners can identify which meaningful activities have been discontinued in the four domains and which activities the client wishes to re-engage. Moreover, OT practitioners can modify activities by introducing energy conservation and self-monitoring techniques in order to reduce further disability and promote engagement of meaningful activities (Everard et al., 2000). The ACS is an assessment tool that can assist OT

practitioners to incorporate a more holistic intervention for the client, in order to enhance meaning and success in their lives.

Lifestyle disruptions in HF clients. Lifestyle is highly influenced by the habits and routines of clients. For clients living with chronic conditions, changes in diet, exercise levels, health monitoring, and medication can frequently occur and impact their daily lives. Clients with HF typically require complex home programs consisting of prescribed medication regimens, diets, exercise programs, elimination of smoking and alcohol use, as well as daily vital sign monitoring (Maeda, Shen, Schwarz, Farrell, & Mallon, 2013). While these lifestyle changes are meant to improve the client's quality of life (QOL), these changes can easily overwhelm and confuse clients. These additional stressors decrease client adherence to treatment programs and negatively impact their health. Studies have found that HF clients take less than two-thirds of their prescribed medications and that non-adherence rates range from 33-55% for diet restrictions and 12-75% for daily weight monitoring (Maeda et al., 2013). Combined, the non-adherence to these lifestyle changes is one of the main causes of readmission rates and increased mortality for clients with HF (Maeda et al., 2013).

In order to increase client adherence to their discharge plans, it is first important to know what factors impact adherence. Qualitative research indicates that successful self-management of HF is supported by client acceptance of their HF diagnosis, appreciation of their current life, participation in meaningful activities, and the incorporation of self-care behaviors into new habits and routines (Chew & Lopez, 2018). Furthermore, research indicates that barriers to successful self-management include lack of knowledge on HF, lack of caregiver support to enact health changes, and difficulty incorporating self-care into daily routines and occupations (Clark et al., 2014). As the research shows, the incorporation of self-care into client habits and routines can be both a support and barrier to client adherence to healthy behaviors depending on the level of ease at which it occurs. While social support from the caregiver is frequently cited as aiding in

the creation of healthy self-care routines, additional research has shown that linking meaningful goals to self-care behaviors may increase client adherence to such practices. "A recent study found that clients with HF were more likely to adhere to their exercise plans when exercise related to their life goals." (Zhang, Dindoff, Arnold, Lane, & Swartzman, 2015). The use of habits, routines and meaningful occupations to increase client adherence to self-care behaviors is of particular interest to OT practitioners, as these factors fall under OT scope of practice (AOTA, 2014). In order to increase self-care behaviors, OT practitioners should address barriers to the incorporation of self-care behaviors into the client's daily habits and routines by relating said behaviors to meaningful life goals and participation in meaningful activities.

Client participation in meaningful activities and establishment of new habits and routines can encourage social support and self-efficacy. Increases in social interactions and self-efficacy are associated with positive self-care outcomes in HF clients. In one study, clients with HF who had non-adherence rates ranging from 47-77% in relation to medication management, diet, and exercise were assessed for perceived levels of social support and self-efficacy (Martos-Méndez, 2015). Individuals with higher levels of non-adherence to their discharge plans had lower levels of social support and self-efficacy (Martos-Méndez, 2015). A second study compared the effects of health literacy and self-efficacy on self-care behaviors. When comparing health literacy and self-efficacy, it was found that health literacy had an effect on the clients' knowledge of the disease, but not their self-care behaviors, whereas an increase in client self-efficacy was significantly related to an improvement in self-care behaviors (Chen et al., 2014). OT practitioners can help HF clients foster social support and self-efficacy by encouraging social interactions with other HF clients in the SNF. OT practitioners can encourage social interaction by engaging clients in group therapy sessions on topics relating to self-care. Group therapy may increase client perceptions of social support if they are able to make meaningful connections with peers, as well as increase their self-efficacy through providing further education and

training on different areas of self care. Social support and self-efficacy are two important factors for OT practitioners to address with their clients in order to increase self-care behaviors.

Motivational Interviewing (MI). OT practitioners can increase client engagement in self-care behaviors by addressing psychological client factors such as perceived social support and self-efficacy. Motivational Interviewing (MI) is a goal-oriented process in which the OT practitioner utilizes empathy, acceptance of client resistance, collaboration, and client autonomy to create changes in client behavior and increase self-efficacy. Methods such as asking open-ended questions, reflective listening, and affirming the clients beliefs are all used in MI (Chew, Cheng & Chair, 2018). One study assessed the effects of 15-20 minute MI sessions with clients who had chronic HF over the course of four sessions. The MI sessions focused on building rapport with the client, determining client perceived difficulties to changing self-care behaviors, establishing realistic, self-care goals as defined by the client, and creating a detailed, written plan to achieve client goals. During the MI sessions client concerns, such as inability to complete daily exercise routines due to work, were discussed and acceptable solutions were created by the client in conjunction with investigators, such as getting off the bus a few stops early and walking home. After the four MI sessions were complete, data was analyzed and showed that clients receiving MI experienced significant improvements in self-care behaviors compared to individuals receiving traditional health education (Chen et al., 2018). Comprehensive reviews of MI research has shown that MI is effective in improving client self-care behaviors, especially those relating to diet and exercise, and that MI may even be more effective than cognitive behavioral interventions (Chew et al., 2018). Taking this data into consideration, OT practitioners may be able to improve self-care behaviors through utilization of MI techniques in their current therapy plans.

The Canadian Occupational Performance Measure (COPM). The COPM is an individualized and client-centered outcome measure assessment tool that assists OT practitioners

in assessing occupational performance and satisfaction in areas of self-care, productivity, and leisure in clients (Duruturk et al., 2015). The use of MI with the COPM can emphasize personalized healthcare for HF clients' concerns in daily functioning (Duruturk et al., 2015). Declining ADL performance can be measured with standardized questionnaires, but client collaboration on goals will be absent (Nakken et al., 2017). The semi-structured interview format embraces clients' self-perception of occupational performance and personal life circumstances to set client-driven intervention goals from the beginning of the OT session. This process increases participation and involvement of the client in the therapeutic process (Pollock, 1993). The COPM is a tool that OT practitioners can utilize to include clients with HF in the planning of their goals and treatment process.

Incorporating the client in the goal setting and treatment planning processes can also increase client well-being and adherence to self-care. Ineffective self-care in HF clients increases hospital readmissions and health care cost (Zhang et al., 2015), so maintaining self-care activities and daily routines are important for HF clients to cease the deterioration of well-being. Zhang et al. (2015) found that HF clients are more likely to adhere to a list of health-related self-care recommendations and goals when concerns such as social participation, functional autonomy, and meaningful activities, were also considered during the goal-making process. Zhang et al. (2015) elucidate the importance of exploring clients' goals in different areas of life to enhance client participation in self-care adherence and interventions. The COPM provides opportunities for OT practitioners to explore the clients' goals and set up a client-centered and client-driven outcome measures. This assessment can establish client-centered goals for occupational performance and increase the adherence of HF clients to self-care tasks and performance in ADLs, all of which can lead to an increase in QOL and well-being.

Skilled Nursing Facilities

After hospitalization, clients who experience physiological and cognitive deficits secondary to HF may require additional, skilled therapy. Older clients with cardiac conditions often require rehabilitation at SNFs to promote independence in mobility and ADL performance (Dolansky et al., 2012). A SNF is an inpatient facility providing continuous nursing care and rehabilitation services including speech-language pathology, physical therapy, and occupational therapy (Dolansky et al., 2010). Over half of the clients in SNFs have a length of stay of 20 days or less (Bowblis, Horowitz, & Brunt, 2016). Clients receiving services in SNFs frequently have a goal to return home, although at times they may also transition to long-term care within the SNF, or another care setting. The payment model in SNFs has recently transitioned from a volume based model of care, in which facilities receive reimbursement based on the amount of service provided, to a value based model of care, in which reimbursement is tied to quality measures and patient outcomes. These changes have the potential to impact how OT practitioners and other healthcare professionals deliver care to clients.

Management of cardiac conditions in SNF. Cardiac rehabilitation (CR) is an evidence-based and effective intervention for clients with HF and other cardiac conditions. CR is traditionally offered in acute care and outpatient settings and divided into four phases of care. Phase I refers to acute rehabilitation in an inpatient setting that provides in-hospital mobilization education, and Phases II, III, and IV refer to outpatient or community-based programs that provide long-term maintenance planning including supervised exercise training and behavioral change counseling to reduce cardiovascular disease (del Pozo-Cruz, Carrick-Ranson, Reading, Nolan, & Dalleck, 2018). Despite the emphasis in inpatient and outpatient care within CR, approximately 24% of HF clients will receive post-acute care services in a SNF setting (Allen et al., 2011) where there has traditionally been a lack of standardization and holistic care provided by CR. The barriers to providing HF care in SNFs include a lack of standardized systems for HF

care, variabilities in SNFs' capacity to provide quality care, and the medical complexity of HF clients who tend to be older and frailer (Orr et al., 2016).

The SNF Cardiac Care Model (CCM) integrates the CR model into a program for cardiac clients within the SNF (Dolansky et al., 2012). The CR model aims to improve health-related QOL and functional capacity in clients with cardiac conditions, and phase IB was developed to implement the SNF CCM program for clients who need longer rehabilitation in the SNF setting (del Pozo-Cruz et al., 2018; Dolansky et al., 2012). SNF CCM programs, which include OT services, utilize each client's unique factors to determine appropriate methods of treatment under CR and provide educational intervention on lifestyle changes and self-management of cardiac symptom management including weight, diet, and medication management as needed (Dolansky et al., 2012). Nursing staff in SNFs monitor client symptoms and implement medication management (Riley, 2015). While HF clients may be dependent in these areas of management initially, as the clients prepare to discharge it is important to educate clients on how to perform these tasks as independently as possible. Older clients may wait for symptoms to get better naturally, resulting in a worsening of symptoms and function. Educating on self-management and symptom tracking for both clients and family members is important, especially if clients have CI and comorbidities (Jurgens et al., 2015). A potential cause of readmission of cardiac clients to the hospital setting is the absence of the SNF CCM for HF clients resulting in a lack of understanding of their condition and skills on monitor their symptoms (Jung, Yeh, & Pressler, 2012). The SNF CCM will provide client-centered treatment in SNFs and ensures appropriate care and education for each individual client on self-monitoring and management in HF symptoms.

Medicare payment model changes. Recent changes have been made to the CMS payment model for SNFs. Previously, CMS reimbursement to SNFs for post-acute rehabilitation clients was primarily determined by the number of therapy minutes provided (Understanding the

patient-driven payment model (PDPM), 2018), a method of reimbursement which was believed by CMS to incentivize over-provision of therapy services (*Skilled nursing facilities patient-driven payment model technical report,* 2018). The new CMS payment model, the Patient-Driven Payment Model (PDPM), utilizes the client's diagnosis and functional status at admission to determine reimbursement (*Skilled nursing facilities patient-driven payment model technical report,* 2018). The PDPM was implemented in SNFs in October of 2019 and incentivizes efficiency in service delivery models, including the use of group and concurrent treatment interventions. SNFs are also evaluated on various quality measures and may have their total Medicare revenue adjusted based on their aggregate quality measure scores. The rate of client readmission to the hospital following discharge to home is a quality measure that has been problematic for some SNFs and it impacts reimbursement.

Readmission rates. While the aim of physical and occupational therapists is to see the client return home safely, many clients are readmitted to the hospital within 30 days of their discharge from the SNF. In recent years, it has been shown that these readmission rates are increasing at alarming levels. The total number of SNF stays that ended in rehospitalization 30 days after discharge rose from 18.2% to 23.5% between 2000 and 2006 (Mor et al., 2010) and rose to 27% for HF clients between 2005 and 2006 (Allen et al., 2011).

Multiple studies have been performed to better understand the cause of these increasing readmission rates. Jeffs, Dhalla, Cardoso, and Bell (2014) discovered that medical professionals, patients, and primary caregivers listed multiple reasons believed to have caused what were deemed as preventable readmissions. These individuals cited problems such as the clients feeling unprepared to care for themselves at discharge, psychological status (i.e. anxiety) at discharge, client nonadherence to discharge plans, refusal of post-discharge services, lack of social support, and failures in communication between the healthcare team and the client and their caregivers as the direct cause of hospital readmission (Jeffs et al., 2014). Additional research shows that SNFs

are inconsistent in the care they provide, especially in the areas of goal and need assessment at home, reconciled medication lists, assessing primary caregiver needs, engaging caregivers in treatment planning, teaching written transitional care plans, and providing detailed instructions for home care (Toles, Colón-Emeric, Naylor, Barroso, & Anderson, 2016). Taken together, these factors have a significant impact on the clients' successful transition from the SNF to a home setting and hospital readmission rates.

Increases in hospital readmission rates have financially impacted CMS, which pays a large portion of the $15-25 million a year spent on hospital readmissions (McNeill & Hubbard, 2012). Due to this increase, CMS penalties for SNFs have been implemented as of October 1st in 2018. CMS penalties for SNFs who do not meet expected quality reporting standards, or those who exceed national readmission rate averages, have increased from 1% to 2%. The quality reporting standards for SNFs have been defined by CMS, and include changes in performance of self-care and mobility (CMS, 2017). These additional standards focus on change in the functional status of the client, as well as their ability at the date of discharge. OT practitioners can demonstrate the distinct value of OT by focusing on evidence-based interventions that address these new standards in their daily practice. Additionally, OT practitioners will need to be proactive and address aspects of care that are known to increase the risk of hospital readmissions. One way that OT practitioners accomplish this is through the use of evidence-based, standardized care to ensure that quality care is provided in SNFs across the country.

Clinical Pathways

Clinical pathways, also known as care pathways, critical pathways, integrated care pathways, and care maps, are protocols used in healthcare settings to organize, manage, and implement standardized care for a specific population of clients (Kinsman, Rotter, James, Snow, & Willis, 2010). Clinical pathways outline the order and timing of interventions (Atwal &

Caldwell, 2002) and provide transparency by holding care providers accountable for the services they have or have not administered (Duncan & Moody, 2003). Clinical pathways ensure that clients receive the best evidence-based care available for their specific condition (Duncan & Moody, 2003). Clinical pathways have been associated with increased collaboration between interdisciplinary teams, improved communication between the client and practitioner, and increased client satisfaction (Duncan & Moody, 2003). In addition, clinical pathways support improved treatment outcomes such as decreased hospital stays, reduced costs of treatment, and increased quality of service delivery (Romeyke & Stummer, 2012). A structured clinical pathway addressing gaps in practice for HF clients in the SNF setting will facilitate the provision of high quality care, increase efficiency of treatment, and reduce the likelihood of hospital readmissions. Efficient and effective evidence-based treatment has the potential to improve HF client outcomes, while also reducing costs of service delivery in SNFs.

Clinical pathways and reducing costs. The New England Healthcare Institute (NEHI) defines waste as "health care spending that can be eliminated without reducing quality of care" (2008, p. 1). NEHI identified that the lack of evidence-based decisions and decreased adherence to clinical guidelines were potential contributors to waste (NEHI, 2008). Currently, no clinical pathways exist in the literature for OT management of HF clients in the SNF. Inconsistency in treatment delivery can negatively impact the successful transition from the SNF to the home setting (Jeffs et al., 2014). The transition to PDPM, as well as the increase in quality reporting standards will require SNFs to incentivize efficiency and efficacy of treatment. The utilization of clinical pathways in the SNF has the potential to reduce waste through standardization of evidence-based treatments targeting improved client outcomes.

Clinical pathways in occupational therapy. OT practitioners have been slow to utilize clinical pathways due to the profession's client-centered perspective on care (Duncan & Moody, 2003). However, Duncan and Moody (2003) state that the pathway should not be viewed as a

replacement for client-centered care, but instead serve as a guideline to ensure evidence-based care is implemented for effective treatment. While OT practitioners value evidence-based practice, many do not actively incorporate it into their treatments due to perceived limitations in time, access to the literature, and knowledge on how to search the literature (Upton, Stephens, Williams, & Scurlock-Evans, 2014). In addition, the amount of medical research can be overwhelming to OT practitioners. Bastian, Glasziou and Chamber (2010) found that seventy-five new trials and eleven systematic reviews are published per day with numbers steadily increasing. A clinical pathway can guide OT practitioners treating HF clients with a care plan grounded in the current evidence (Upton et al., 2014). Clinical pathways will assist SNF OT practitioners in addressing the cognitive, psychosocial, and lifestyle factors of clients, areas which are often overlooked by OT practitioners who focus on ADLs and therapeutic exercise (Rafeedie et al., 2018). A HF focused clinical pathway that incorporates evidence-based tools and interventions has the potential to improve client outcomes while also resulting in reduced spending in SNFs.

Summary and Conclusion

Approximately 20% of individuals hospitalized for HF will be discharged to a SNF (Mozaffarian et al, 2016). HF patients within the SNF receive various levels of care from nursing services, speech therapy, physical therapy, and occupational therapy. OT practitioners work with clients who have HF to improve their health-related QOL and functional ability to perform occupations (del Pozo-Cruz et al., 2018; Dolansky et al., 2012). However, 27% of HF clients are readmitted to the hospital within 30 days of discharge, indicating treatment gaps in HF care. In the SNF, OT treatment emphasizes ADLs and therapeutic exercise (Rafeedie, et al., 2018). Gaps in treatment of HF patients stem from a variety of reasons: inconsistent cognitive screenings (Alagiakrishnan et al., 2016), a lack of client-centered assessments (Halliday, 2010), as well as a hyperfocus on the physical functioning of clients (Foster et al., 2011). In addition, OT

practitioners may not have the time, resources, or critical reasoning to incorporate evidence-based practice for HF clients (Upton et al., 2014). In response to high readmission rates and other concerns, CMS has recently reformed the payment model for SNFs. SNFs are subject to a greater focus on functional outcomes for reimbursement, as well as increased penalties for high readmission rates.

In order to address gaps in practice for HF clients and comply with CMS initiatives, focused, holistic, and evidence-based assessments and interventions are necessary. An OT clinical pathway that addresses not only the physical manifestations of HF, but also the cognitive and psychological conditions as well as client lifestyle management is needed to guide OT practitioners to improve the outcomes of HF clients within the SNF.

Statement of Purpose

The ultimate goal of post-acute rehabilitation services provided in a SNF is to help clients stabilize their medical conditions and reach their therapy goals so that they can return home (Orr et al., 2016). However, approximately 27% of HF clients are readmitted to the hospital after being discharged from the SNF (Allen et al., 2011). The high readmissions rate may be due to the cognitive, psychosocial, and lifestyle barriers HF clients frequently face. Changes in the brain due to reduced cardiac output can impair cortical areas supporting cognition, resulting in reduced capacity to participate in self-care, make decisions, manage medication, communicate, and monitor symptoms (Alagiakrishnan et al., 2016). Loss of autonomy and reduced engagement in occupations can trigger depression, emotional distress, hopelessness, further cognitive decline (Foster et al., 2011) and exacerbate physical signs and symptoms (Halliday, 2010). In addition, clients with HF face significant threats to their participation in leisure, social, and family related activity participation and role changes (Foster et al., 2011). Occupational therapy interventions in a SNF emphasize ADLs and therapeutic exercises (Rafeedie et al., 2018), and medical care tends to focus on physical disabilities and symptoms (Foster et al., 2011). A clinical pathway will improve client outcomes by ensuring OT practitioners utilize their holistic scope of practice by delivering treatments grounded in the current evidence.

This project aims to fill the gap in treatment by creating an evidence-based clinical pathway addressing cognitive, psychosocial, and lifestyle factors of HF clients. A clinical pathway will support OT practitioners to provide interventions that are holistic, thus, preventing potential readmissions and providing the best quality of care. With the transition to a value-based model of reimbursement, care must also be delivered efficiently and effectively. As a result, the clinical pathway will be developed to accommodate group modes of treatment which may facilitate social support and camaraderie within a cost-effective model of care. Social support and self-efficacy can help protect against the stress of chronic disease and help clients participate

in adaptive behavior leading to improved self-care behaviors, routines, and QOL (Martos-Mendez, 2015). Within the SNF, social support can be facilitated by encouraging social interactions with other HF clients in the SNF. A clinical pathway for HF clients in the SNF will incorporate the use of evidence-based assessments, and interventions to support occupation-based goals and outcomes and decrease hospital readmission rates of HF clients.

Theoretical Framework

The Person-Environment-Occupation (PEO) model informed the creation and selection of focused assessments and interventions for HF clients in the SNF. Law et al. (1996) introduced the PEO model to frame and guide client-centered practice in OT, focusing on occupational performance by acknowledging the dynamic interactions of the person, environment, and occupation across a client's lifespan (p.9). The PEO model was developed to expand occupational performance in meaningful activities that influence the health and well-being of clients (Bruce & Borg, 2016).

The person component in the PEO model can represent individuals, groups, organizations, or communities and considers the physical and cognitive, beliefs, spirituality, skills, cultural roots, personal experiences, and roles within the person (Law et al., 1996). Viewing HF clients holistically through the PEO lens requires consideration of their physical conditions, cognitive level, and psychosocial disruptions such as role changes and loss of independence, and self-efficacy.

The environment refers to the context that the individuals' occupational performance take place in including cultural, physical, social, political, socio-economic, and institutional contexts (Dunbar, 2007; Law et al., 1996). The physical environment includes buildings and natural surroundings of a person, and the cultural and social environment consist of norms, values, beliefs, and customs of society, ethnicity, and religion (Schell et al., 2014). The cultural environment also includes expectations and relationships with systems and significant individuals, such as family members, friends, caregivers, political, legal, economic, and institutional systems (AOTA, 2014). HF clients' physical environments include the SNF and home setting. The cultural and social environments include community resources and relationships between clients and significant others. Institutional contexts include Medicare plans and delivery of therapy services. To provide effective services, OT practitioners need to

incorporate the cultural and social environments of clients into interventions to increase occupational performance while also taking into consideration existing institutional contexts. In addition to addressing personal goals, clients learn to manage their HF condition within the SNF. Upon discharge, client's must transfer their new self-care behaviors to the home environment, however many barriers prevent this from occurring (Clark et al., 2014). A clinical pathway addressing performance patterns in new health management occupations may support client's successful discharge from the SNF to home environments.

The occupation component in the PEO model refers to self-directed, meaningful and purposeful activities that a person engages in throughout his or her life (Law et al., 1996). The occupation involves the behaviors and actions of the individual within domains of occupation in ADLs, IADLs, work, play, social participation, leisure, education, rest, and sleep (AOTA, 2014). The OT clinical pathway for HF clients in SNFs includes assessments such as the ACS and the COPM to identify client-centered goals, meaningful activities, and any affected domains of occupation for HF clients in SNFs. The assessments may help the OT practitioners to identify and provide therapeutic activities that are related to clients' meaningful activity that can be done in SNF settings.

The PEO model supports partnerships between OT practitioners and their clients through a client and family-centered approach to practice (Bruce & Borg, 2016). The PEO model supports and guides an OT clinical pathway for HF clients in SNFs, by implementing targeted assessments and interventions that address the client's personal factors, meaningful occupations, and the environment in which the client's life takes place in. This holistic view not only enhances partnerships between OT practitioners, clients, and their families, it also ensures that each therapy experience is individualized and involves the client in their treatment plan to a higher degree. When incorporated into the treatment plan, the PEO model encourages OT

practitioners to place more emphasis on the client and the environmental supports present and less emphasis on the client's condition.

Ethical and Legal Considerations

AOTA has created a code of ethics, which OT professionals are expected to uphold during all aspects of practice (Occupational Therapy Code of Ethics, 2015). This project aims to address specific, ethical considerations that OT professionals feel are not currently being addressed within SNFs. The needs assessment defined three ethical principles, including beneficence, nonmaleficence, and autonomy, through discussion with professionals working in Ensign affiliated SNFs. Beneficence, or the demonstration of concern for the well-being and safety of the client by the OT practitioners (Occupational Therapy Code of Ethics, 2015), is addressed in the clinical pathway by ensuring that the OT practitioners address psychosocial factors, lifestyle factors, and occupations that have meaning to the client. By addressing these areas, the OT practitioner shows beneficence through demonstrating interest in the client's life and interests, as well as their psychological well-being. Nonmaleficence, or refraining from causing harm to the clients (Occupational therapy code of ethics, 2015), is addressed in the clinical pathway by providing OT practitioners with guidelines and tools for addressing psychosocial aspects of the client. Through addressing the psychosocial aspects of clients, OT practitioners will provide preventative mental health interventions and prevent harm caused by readmission or worsening of symptoms related to lack of self-management. Autonomy, or the respect OT practitioners show to their clients in regards to their individual rights to self-determination, privacy, confidentiality, and consent (Occupational therapy code of ethics, 2015), is addressed in the clinical pathway through having the OT practitioner ask clients about meaningful leisure occupations and incorporating those occupations into therapy sessions. Through this, the OT practitioner incorporates the client fully into the therapeutic process and gives them control over the activities they participate in. Additionally, by providing interventions that support successful home discharges, the OT practitioners are supporting client autonomy and preventing institutionalization.

When working together with Ensign affiliated facilities, several legal considerations were kept in mind. The process of creating the project involved going onsite to SNFs and sitting in on discharge meetings, which exposed the project team to sensitive information regarding clients. To maintain confidentiality, the project team did not write down sensitive client information such as names, addresses, or other identifying information. Students did not take any pictures with SNF clients present. The clinical pathway was incorporated into an existing post-acute cardiac care program called HeartParc and the students respected the intellectual property of Ensign when utilizing resources that were part of the HeartParc program. Copyright laws were also maintained, as all copyrighted assessments included in the clinical pathway and trainings were used with permission from their respective creators (See Appendix G).

Project Methodology

Agency Description

The Ensign Group is an independently operating, affiliated entity that offers post-acute care through assisted living, skilled nursing, rehabilitative care, home health, home care, and hospice. The Ensign Group's goal is to establish and design best-practice solutions to provide improved quality of care for clients at an adequate cost. The Ensign Group has over 200 affiliated SNFs across the country. The Ensign affiliated SNFs provide 24-hours a day and 7-days a week care with health professionals such as medical doctors, nurses, and caregivers and rehabilitation therapy with a full-time in-house therapy team including physical therapy, OT, and speech-language therapy. This project was designed for OT practitioners treating HF clients within the Ensign affiliated SNFs.

Project Design

The lack of appropriate interventions in the areas of psychosocial wellbeing and lifestyle management for clients with cognitive impairment, two factors causing high readmission rates, inspired the creation of a clinical pathway with HF focused assessment tools and interventions to support the provision of evidence-based practice that meets the specific needs of HF clients who are preparing to discharge home and are receiving services within SNFs. The collaborating agencies were Ensign Facility Services, and Ensign affiliated SNFs, devoted to providing high-quality post-acute care across the country. There are currently over 200 Ensign affiliated SNFs throughout the United States. OT practitioners treating HF clients in these facilities may have access to this evidence-based clinical pathway and the associated training materials. The clinical pathway was incorporated into an existing program called HeartParc, an interdisciplinary cardiac recovery program developed by Ensign affiliated SNFs that is designed to treat, educate, and ultimately prepare clients to manage their condition after discharge. The research and needs

assessment demonstrated that OT practitioners often feel unable to utilize evidence and occupation-based interventions due to constraints in time, resources, and training. The creation of a holistic clinical pathway fits well into the structured nature of a SNF and can support the need for increased efficiency within the new payment model. Clinical pathways have been beneficial to OT practice and HF client care by outlining the order and timing of treatments (Atwal & Caldwell, 2002), holding OT practitioners accountable for the services they have provided (Duncan & Moody, 2003), and ensuring that clients receive the best evidence-based care available for their condition (Upton et al., 2014). By utilizing a clinical pathway, OT practitioners within SNFs will be able to follow a standardized, daily schedule for therapy that ensures the inclusion of psychosocial factors, cognition, lifestyle factors, and leisure occupations.

The clinical pathway contains recommended assessments in the areas of cognition, meaningful engagement, psychosocial wellbeing, and management of self-care behaviors for heart failure. For example, assessments recommended for supporting engagement in meaningful activities include the occupational profile, COPM, and ACS, as well as a recommendation for OT practitioners to utilize the MoCA for cognitive assessment. In the needs assessment, most OT practitioners strongly agreed with the statement, "I believe the cognitive and psychosocial aspects of each HF patient should be considered to treat their conditions," however, they did not always address these aspects during treatment due to limited time and emphasis on improving functional outcomes. As a result, interventions have been designed for efficient and quick delivery for the fast-paced culture of the SNF. Interventions were also designed to accommodate concurrent and group treatment mode options when possible. Because social support has been identified as an important factor contributing to self-care habits in HF clients (Martos-Méndez, 2015), group interventions provided in the clinical pathway were developed to facilitate group discussion, sharing of experiences, and collective problem solving. Interventions that address participation in meaningful and self-care occupations, cultivating self-efficacy, and increasing

social support were also included. Because MI has been associated with improvements in self-care behaviors, resources have been provided to the OT practitioners to utilize MI principles effectively in therapy practice (Chen et al., 2018). To help address the importance of holistic practice, an evidence table with research article summaries supporting the validity of the interventions is included with the clinical pathway. The body of evidence is constantly changing with numerous studies and reviews posted each day (Bastian et al., 2010). The clinical pathway will have to be updated periodically to make sure the most current research is being utilized.

Target Population

The target population of this project was OT practitioners working in Ensign affiliated SNFs. During the needs assessment process, the project team identified that OT treatment of HF clients within the SNFs was varied. OT practitioners interviewed were lacking in interventions addressing the psychosocial factors, lifestyle factors, and meaningful occupations of the clients. OT practitioners within Ensign SNFs benefited from an evidence-based, clinical pathway to address these gaps in practice and standardize the intervention process.

To develop a relevant clinical pathway for Ensign OT practitioners, the project team also researched characteristics of HF clients in the SNF. The literature revealed that the majority of HF clients discharged to a SNF were previously living at home (Allen et al., 2011). Criteria for discharge from the hospital to the SNF includes poor mobility, impairments in cognition, frailty, and poor in-home support (Allen et al., 2011). As a result, HF clients within the SNF tend to be older, frailer, and have comorbidities (Orr et al., 2016). More than half of individuals discharged to the SNF pass away within a year (Allen et al., 2011). Medically complex HF clients will benefit from a client-centered, evidence-based, and standardized approach that addresses all aspects of occupational engagement instead of focusing solely on ADL performance.

Project Development

The structure of the project was informed by the experiences of occupational and physical therapists currently working in Ensign SNFs. Through talking to these professionals, it was determined that a gap in practice existed regarding adults with chronic conditions. Further discussion with these professionals determined the population with the greatest need were individuals with HF in Ensign SNFs. A clinical pathway was chosen for the project design after these initial discussions, in order to create the most impact on the clients while at the same time maintaining ease of incorporation for the OT practitioners implementing the project. To create the specifics of the clinical pathway, needs assessments were completed at the two Ensign-affiliated SNFs in Santa Rosa, California, through the use of verbal interviews and a Likert scale survey (see Appendix A). The Likert scale survey was also provided to online OT communities (see Appendix B) on the Ensign website, Facebook, and Reddit in order to gain additional direction for OT practitioners working in non-Ensign-affiliated SNFs around the country.

Project Implementation Plan

The directors of rehabilitation (DOR) at two Ensign SNFs in Santa Rosa were contacted through email to schedule an interview. Interviews with the DORs were conducted in each SNF to gain insight into the unique needs of Ensign-affiliated OT practitioners. The interviewees stated that time constraints were a major barrier to treatment and described ADLs and therapeutic exercise as the main focus of interventions for HF clients within the SNF. Within the fast-paced SNF environment, the OT practitioners had difficulty finding and applying the most recent evidence-based interventions for their HF clients. The DORs expressed a need for structured, evidence-based guidance to provide optimal treatment for HF clients.

After interviewing the DOR's and several OT's at the Ensign-affiliated facilities, it was decided that OT practitioners would benefit from an effective and efficient clinical pathway to

guide HF care. An online survey was created, and covered topics relating to HF client care that were not consistently being utilized in Ensign-affiliated SNFs despite the literature supporting their importance in the treatment of HF clients. After posting the survey to the Ensign website and various OT related Facebook pages, 33 responses were gathered with 12 responses being from Ensign OT practitioners. Gaining secondary opinions from OT practitioners out of the two Ensign-affiliated facilities visited, was important to ensure that the clinical pathway was well rounded and addressed all gaps in practice experienced by OT practitioners that may not have been mentioned during the initial interviews. Additional interviews were conducted over the phone, with eight survey participants (two of which were Ensign OT practitioners) in order to gain further insight into their responses and comments. Each interview lasted between 30 and 60 minutes and was essential in gaining real-time feedback about aspects of the clinical pathway, as well as what each clinician personally felt should be included to help support OT practitioners working with HF clients in the SNF.

The project team created an early version of the clinical pathway and presented to the clinical developers of the HeartParc Program to ensure that the pathway was practical for OT use within the fast-paced environment of the SNF. The developers of HeartParc were enthusiastic about the incorporation of psychosocial elements to treatment and the emphasis on educating clients on self-care management. Additional guidance was provided to implement the finalized version of the clinical pathway.

The final version of the clinical pathway (see Appendix E) was created based on OT responses from the interviews and survey, feedback from the HeartParc developers, as well as information gained from the literature review in relation to gaps in current OT practice. The finalized clinical pathway was divided into four phases, each of which contained assessments and skill checks as well as individual, group and concurrent intervention plans (see Table 4). The timing of the various interventions within the clinical pathway was designed to be flexible, as

each client requires an individualized plan of care and may require certain interventions (i.e. fear of falling) to occur sooner in their treatment than others.

Table 4 The clinical pathway phases

Phases	Assessment	IND Intervention	Group/Concurrent INT	Focus of Each Phase
One	Occupational Profile, ACS, COPM, MoCA, Self-Care of HF Index	Symptom management	Weight monitoring and vital teach-back	Gain insight about cognitive level and self-care occupations
Two	Falls Efficacy Scale	Skills check on symptom management	Anxiety and stress management, fear of falling	Focus on psychosocial aspect of client care
Three	Multidimensional Scale of Perceived Social Support	N/A	My Typical Weekday/Weekend, exercise	Initiate preparation for client's discharge to home
Four	N/A	Skills check on fall prevention	Medication management, community resources	Continue preparation for discharge

After the clinical pathway and subsequent materials were finalized, a presentation time, date, and place were decided, and a flyer (see Appendix C) was created and distributed to two Ensign SNFs in Santa Rosa through the Therapy Resources. Also, postcards and online invitations (see Appendix D) were sent out into the community and posted on Ensign's Facebook page to invite OT practitioners within Sonoma County to the presentation.

On April 12, 2019, the project team held an hour and a half training workshop at one of the Ensign-affiliated SNFs in Santa Rosa. As shown in Table 5, nine OT practitioners, three certified occupational therapy assistants (COTA), and three occupational therapy students (OTS) attended the training. The training consisted of a 20 minute lecture portion covering insurance changes, rising readmission rates, gaps in health practice for HF clients, and an introduction to the clinical pathway. For the remaining training time, participants were engaged in hands-on

workshop components covering various parts of the clinical pathway including: motivational interviewing, administering the modified occupational profile, BP education and intervention, BORG education and intervention, and a time management group intervention.

Binders of the clinical pathway, including assessment materials and supporting evidence were prepared for each OT practitioner. During the presentation, the project team provided context about the need for focused and holistic interventions for HF clients. The presentation included information about the high readmission rates of HF clients, changes in Medicare reimbursement and penalties, the indications of group modes of treatment for the HF population, and how addressing the cognitive, psychosocial and lifestyle factors of HF clients can improve outcomes after discharge and prevent future readmissions. The team then presented an overview of the clinical pathway and engaged the attendees in an interactive workshop. The workshop included practicing components of the clinical pathway such as conducting the modified occupational profile, training clients on self-monitoring of blood pressure (BP) and weight, and introducing a possible group/concurrent session on daily routine. Attendees were given a link to the clinical pathway in Portable Document Format.

Because there are over 200 Ensign affiliated SNFs in the United States, the project team created a video portion of the project for Ensign OT practitioners who could not attend the in-person training.

In addition, the team submitted an application and was accepted to present a three-hour training at Occupational Therapy Association of California (OTAC) in Pasadena, California on October 18, 2019. This training was an expanded version of the training held at the Ensign affiliated SNF with more time spent exploring the current evidence on gaps in HF practice, practicing the interventions, and considering documentation. Approximately fourteen participants composed of OTs and OTAs attended. Eleven participants requested access to the training PowerPoint for reference and for disseminating the tool to other OT practitioners and

OTAs within their workplaces. A DOR in attendance stated that she intends to implement the clinical pathway at her SNF. Participants verbally expressed concerns with documenting psychosocial aspects of intervention. In response, the capstone advisor facilitated a brief discussion on documenting skilled interventions related to cognition, psychosocial aspects of occupation, and lifestyle factors. After the OTAC presentation, the project team received positive feedback from the participants through an OTAC post survey. The participants expressed the educational value and the relevance of the materials due to the payment model changes. One of the participants appreciated the inclusion of interactive aspects and the use of visual aids within the presentation. Another participant recommended the creation of a chronic obstructive pulmonary disease clinical pathway.

Project Evaluation Plan

A survey (see Appendix F) was created to give to the workshop participants after attending the training and receiving the clinical pathway. The survey included Likert Scale components as well as a section for open-ended questions to determine participant opinions on the relevance and practicality of clinical pathway use within SNF settings. The survey collected feedback from OT practitioners on the strengths of the pathway, areas to improve, gaps to be addressed, areas of concern, and the likeliness that the pathway could be used effectively in a SNF.

A post-presentation survey was given to the 15 event participants. Out of the 15 attendees, 12 surveys were returned with a total of six OT practitioners, three COTAs, and three OTS responses (see Table 5). The survey was anonymous and included an area for the participant to leave his/her email and phone number if he/she was willing to have a phone interview to discuss his/her impressions of the clinical pathway. The participants did not provide

contact information however, several participants recommended monetizing the clinical pathway.

Questions on the survey were presented in checkbox, Likert scale, and short answer format, and focused on perceived practicality and likelihood of use of the clinical pathway during OT practice. Additional questions were posed relating to possible ways to improve the clinical pathway and what video modules the practitioners would be interested in seeing first. As shown in Figure 1, the majority of participants expressed that they were very likely to utilize the tools and assessments recommended in the clinical pathway. One participant was an OT working in a mental health setting, and rated themselves as not likely to use the interventions and education provided in their practice. The project received positive feedback from those attending the presentation. Additional suggestions to improve the clinical pathway were provided by several participants, and included adding additional information relating to working with clients with varying levels of MCI and problems with energy conservation,

Table 5 The number of participants and returned surveys

The Participants	The number of Participants Attended	The Number of Returned Survey
OTs	9	6
OTAs	3	3
OTS	3	3

Note. 15 participants attended and out of 15 attendees, 12 surveys were returned.

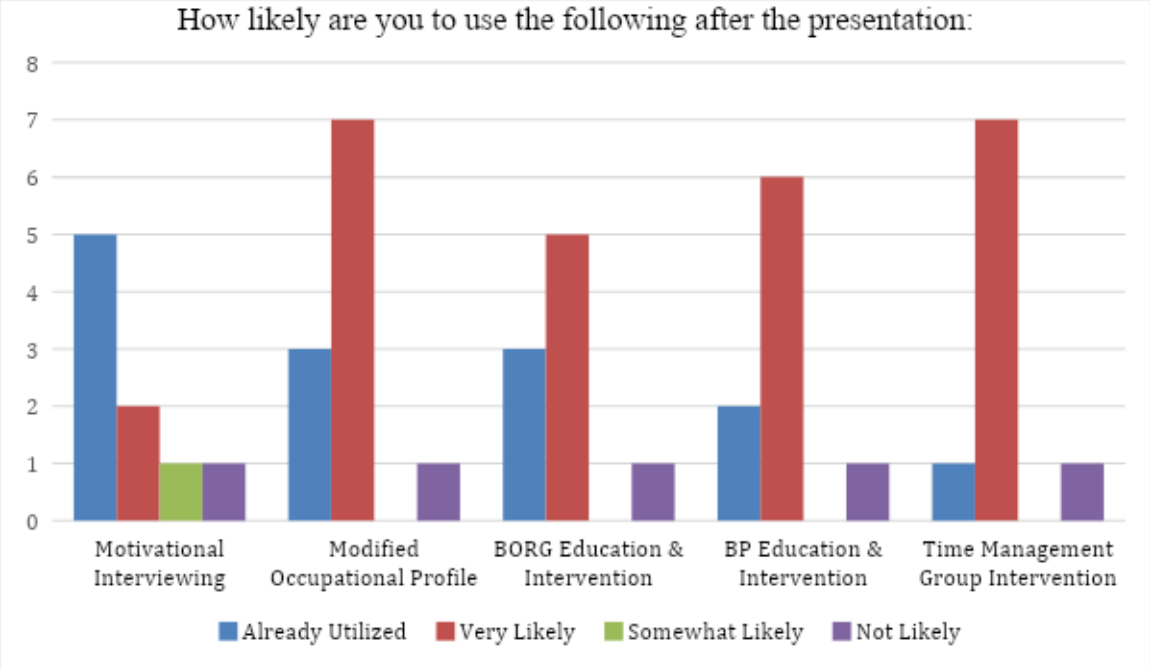

Figure 1 Post-survey responses of participants after the training at the Ensign affiliated SNF

Discussion, Summary, Recommendations

The finalized clinical pathway followed the original plan set out by the capstone team with some minor deviations. During the creation of the clinical pathway, additional research on the influence of lifestyle management and self-care practices was found. The introduction of new evidence directly led to the creation of the "my typical weekday/weekend" intervention as a method of improving HF client adherence to their plan of care throughout their stay in the SNF and upon discharge. The capstone team originally planned to interview and survey HF clients, in order to gain insight on gaps in OT practice, this was not pursued due to perceived complications regarding confidentiality agreements, accuracy of self-report from clients with MCI, and a lack of time to interview clients within a SNF setting.

Despite the lack of client input, the clinical pathway contributes to the effectiveness of OT treatment for clients with HF. Inclusion of cognition, psychosocial, and lifestyle factors of HF clients directly addresses a gap in practice which negatively impacts hospital readmission

rates. A clinical pathway grounded in the current literature will ultimately result in reduced hospital readmissions, and therefore reduced CMS penalties for skilled nursing facilities.

The clinical pathway's emphasis on lifestyle provides OT practitioners with tools to expand the scope of their practice into treatment areas that are crucial for successful discharge and demonstrate the distinct value of OT. For example, in phone interviews, some OT practitioners conveyed their perception that nursing is in charge of measuring vitals and weight, as well as the management of medications. Some OT practitioners deferred these health management behaviors to home health OT practitioners. Moreover, a clinical pathway may encourage the creation of evidence-based clinical pathways for other chronic conditions in the SNF. While research supports that OT practitioners value evidence-based practice, many do not actively incorporate it into their treatments due to limitations in time, access to the literature, and research skills (Upton, Stephens, Williams, & Scurlock-Evans, 2014). A clinical pathway is a method that allows OT practitioners to easily access evidence-based care and ensure the best possible treatment for clients.

The project team encountered challenges during the creation of the clinical pathway. The first challenge was the question of how to incorporate assessment and intervention tools that could be utilized in the fast paced SNF environment. One solution included creating an encapsulating occupational profile that could be administered in approximately five to ten minutes. In addition, the majority of the interventions in the clinical pathway were designed to accommodate individual, concurrent and group modes of treatment to promote efficiency based on the OT practitioner's clinical judgement. Another challenge included identifying treatment interventions appropriate for clients with cognitive impairments. As a result, a worksheet on tips for clients with MCI was created and included in the clinical pathway informational booklet. In addition, the ICON-Fall Efficacy Scale (ICON-FES), a pictorial version of the International-Fall Efficacy Scale for adults with MCI, was included in the pathway as well.

Opportunities to improve and expand upon the current clinical pathway include:

- Providing more training on documenting the use of tools and interventions within the clinical pathway.
- Developing further capacity to grade interventions based on cognition
- Adding more information regarding energy conservation in relation to HF care as requested in the post-presentation survey.
- Assessing the effectiveness of the clinical pathways use in practice through quantitative and qualitative studies. Research groups could study the usefulness of the clinical pathway in reducing hospital readmission rates, client perception of quality of care within the SNF with and without the use of the clinical pathway, and OT perception of the efficiency and effectiveness of the clinical pathway after utilizing it in practice.
- Advocating for the inclusion of current procedural terminology (CPT) codes that reflect psychosocial and lifestyle interventions and more accurately represent the work and value of OT practitioners within the SNF.

Conclusion

The mission of this project is to address the gaps in occupational therapy practice when treating HF clients in the SNF. Current OT treatment focuses on functional outcomes through therapeutic exercise and ADLs, even though HF clients may experience impaired cognition, emotional distress, and reduced engagement in meaningful occupations due to their condition. OT practitioners are not utilizing their full scope of practice when working with HF clients. Evidence-based assessments and interventions addressing reduced cognitive levels, psychosocial distress, and lifestyle barriers provided in the format of a clinical pathway will assist OT practitioners in delivering holistic and effective care.

There are currently no occupational therapy clinical pathways in the literature for HF clients in the SNF. OT practitioners want to utilize evidence-based practice, but do not always have the time, resources, or knowledge to thoroughly analyze the existing research (Upton et al., 2014). An evidence based clinical pathway will support SNF OT practitioners to address factors shown to support successful transitions from the SNF to home, resulting in improved client outcomes, and reducing preventable readmissions.

The project team sought to create a clinical pathway which fits into the fast paced and functionally-focused culture of the SNF. The need for efficiency is especially urgent due to the transition to PDPM and increased CMS penalties for readmissions. However, some OT practitioners may not be receptive to new treatments. They could be uncomfortable with administering or documenting psychosocial or lifestyle interventions, or may simply feel that they do not have the time to add more goals into their sessions.

Despite the potential limitations of a client-centered and occupation-based clinical pathway, more than half of OTs and OTAs who completed a post survey responded that they were “very likely” to utilize each tool presented in the workshop component of the training. Based on the participant feedback, SNF OT practitioners are receptive to new evidence-based

practices are interested in incorporating tools from the clinical pathway into their practice. A fast paced SNF culture may be a current barrier to seeking out and practicing evidence-based treatment. A clinical pathway may support OT practitioners who want to utilize evidence-based practice but may not have the time or the resources to do so.

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Appendix A: Needs Assessment Survey

Survey for OTs in SNF Setting

Invitation for the Survey

Hello, our names are Camille Schilling, Elena Vaccaro, and In Hwa Chae, and we are students from Dominican University of California. We are currently in the second semester of our capstone project. Our project aims to reduce readmission rates for the heart failure (HF) population within SNFs, by creating a clinical pathway to assist OTs in their therapeutic treatment of HF clients. We are looking for OTs who currently or previously worked within the SNF setting with heart failure (HF) clients, to assist in our research process through an online survey. The survey will take approximately 10-15 minutes and will cover the topics of cognition, psychosocial, and lifestyle factors of HF clients within the SNF and how the OTs who work with these clients address those three factors in their treatment. We thank you all for your time, and we look forward to reading your responses!

Please choose the option that best describes you

I currently work in an *Ensign* affiliated SNF with HF clients
I currently work in another SNF setting with HF clients
I have previously worked in a SNF setting with HF clients
Other

1. I provide educational programs to HF clients on the following topics (check all that apply):
   Cause of HF
   Precautions
   Signs and Symptoms such as: SOB, fatigue, swelling, weight gain
   Causes of symptom exacerbation
   Home Safety
   Importance of monitoring vitals and weight
   Other

2. How would you rate your level of skill in treating HF clients?
No level of competence ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ ◯ High level of competence
1 2 3 4 5 6 7 8 9 10

3. On average, do you feel that clients are capable of managing their condition (such as calling a doctor, monitoring vitals, etc) when they are discharged?

◯ **Extremely Incapable** ◯**Incapable** ◯ **Somewhat Capable** ◯ **Very Capable** ◯**Extremely Capable**◯**Other**

4. How would you rate the interprofessional communication amongst staff members (Nurses, PT, OT, etc.) at your site in relation to HF clients (i.e. change in condition, daily schedule, precautions, barriers to discharge, changes in/effects of medication, etc.)?

◯**Poor** ◯**Fair** ◯**Good** ◯**Very Good** ◯**Excellent** ◯**Other**

5. What could be done to improve interprofessional communication at your site?

6. How often during the client's stay in the SNF do you communicate to family members and/or caregivers about the client's barriers to occupational performance including cognitive, physical, and psychosocial barriers?

◯**Never** ◯ **Rarely** ◯ **Occasionally** ◯**Frequently** ◯ **Always** ◯**Other**

7. What could be done to improve communication between staff members and family members at your site?

8. What percentage of your total treatment time with HF clients includes targeting psychosocial (ex. Depression, anxiety, etc) wellbeing?

◯Less than 10% ◯10-25% ◯ 25-50% ◯50-75% ◯ 75-100% ◯Other

9. What percentage of your total treatment time with HF clients includes targeting cognitive functioning?

◯Less than 10% ◯10-25% ◯ 25-50% ◯50-75% ◯ 75-100% ◯Other

10. Does each HF client receive a cognitive assessment (ex. MoCA, SLUMS, MMSE, Allen Cognitive Levels, etc.)?

◯Yes ◯No ◯ It depends/it varies

10-a. If so, which cognitive assessments do you use?

11. Do you currently use the Canadian Occupational Performance Measure (COPM) assessment with your HF clients?

◯Yes ◯No ◯ It depends/it varies

11-a. If you answered "no", why not?

12. Do you currently use (or have previously used) the Activity Card Sort (ACS) with your HF clients?

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

13. Do you currently use Motivational Interviewing (MI) in sessions with your HF clients?

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

13-a. If you do NOT currently use MI with your HF clients, how likely would you be to use MI if provided with the materials, evidence, and knowledge to do so? (If you already use MI, skip ahead to question 14)

◯ Extremely Unlikely ◯Unlikely ◯ Neutral ◯ Likely ◯Extremely Likely ◯Other

14. Do you currently create occupational profiles -a client's occupational history and experiences, patterns of daily living, interests, values, and needs (AOTA, 2014)- with your HF clients?

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

14-a. If so, how comfortable are you creating an occupational profile to reflect the unique needs of HF clients?

◯ Extremely Uncomfortable ◯Uncomfortable ◯Neutral ◯ Comfortable ◯Extremely Comfortable ◯Other

14-b. If so, how much time do you typically spend making an occupational profile for a HF client?

◯1-5 min ◯5-10 min ◯ 10-15 min ◯15-20 min ◯ more than 20 min ◯Other

14-c. If more than 20 min, how much time do you take?

14-d. Do you feel that any time constraints currently limit your ability create an occupational profile for HF clients?

◯Yes ◯No ◯ Other

15. Do you have your HF clients practice taking their own vitals and weight?

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

15-a. If so, during what activities (ex. before toileting training) do you have your HF clients practice taking their OWN vitals?

16. How often do you address how to incorporate self-monitoring (ex. taking vital signs and weight) into the HF client's daily habits and routines?

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

17. How often do you provide concurrent modes of therapy (defined as one OT administering two clients at the same time who are performing different activities)? If you do not utilize concurrent modes of therapy, please skip to question 18.

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

17-a. How much of the total treatment time (%) is spent on concurrent modes of therapy?

17-b. How confident do you feel administering interventions utilizing concurrent modes of therapy with two HF clients?

◯ Extremely Unconfident ◯Unconfident ◯Neutral ◯ Confident ◯Extremely Confident ◯Other

17-c. Do you agree that concurrent modes of therapy are beneficial to your interventions with HF clients?

◯Strongly Disagree ◯ Disagree ◯ Undecided ◯Agree ◯ Strongly Agree ◯Other

18. How often do you provide group modes of therapy (defined as one OT administering two to four clients at the same time while performing the same or similar activities) to your HF clients? If you do not utilize group modes of therapy, please skip to question 19.

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

18-a. How much of the total treatment time (%) is spent on group modes of therapy with HF clients?

18-b. How confident do you feel administering interventions utilizing group modes of therapy to HF clients?

◯ Extremely Unconfident ◯Unconfident ◯Neutral ◯ Confident ◯Extremely Confident ◯Other

18-c. Do you agree that group modes of therapy are beneficial to your interventions with HF clients?

◯Strongly Disagree ◯ Disagree ◯ Neutral ◯Agree ◯ Strongly Agree
◯Other

19. Which mode of therapy do you find most effective in your interventions with HF clients?
◯Concurrent (One OT administering TWO clients at the same time while performing DIFFERENT activities)
◯Group (One OT administering TWO to FOUR clients at the same time while performing SAME or SIMILAR activities)
◯Both Concurrent and Group
◯Individual
◯All of the above
◯Other

20. How much do you agree with the following statement: "I am concerned about Medicare reimbursement changes and their impact on the modes of treatment (ex. concurrent and group therapy) used"?

◯Strongly Disagree ◯ Disagree ◯ Neutral ◯Agree ◯ Strongly Agree
◯Other

21. What percentage of your total treatment time for HF clients focuses on social connection opportunities with other HF clients in the SNF?

◯Less than 10% ◯10-25% ◯ 25-50% ◯50-75% ◯ 75-100% ◯Other

21-a. How often do you provide information about social support (in a wider community) in your treatment to benefit the client's wellness and healthier living? (ex. Support groups in the community, Mentor program, etc)

◯Never ◯ Rarely ◯ Occasionally ◯Frequently ◯ Always ◯Other

22. Are there specific protocols, procedures, clinical pathways or practice guidelines that you use to treat your HF clients (such as through the use of structured interventions, sequencing of interventions, requiring use of specific assessments or educational handouts, etc.)? If so, please describe the protocol used and your satisfaction with its use.

22-a. What do you perceive as being the strongest barriers to the implementation of additional/new cognitive, psychosocial, and lifestyle assessments and elements of treatment? (ex. Time constraint, absence of materials and supplies, SNF's policy, insurance reimbursement, requiring additional education, etc)

22-b. What would support your implementation of additional/new cognitive, psychosocial, and lifestyle assessments and elements of treatment? (ex. Access to online and in-person training, information booklet on assessments and treatments, documentation examples etc.)

23. If you are willing to be briefly interviewed over phone or email, please leave your name and email and/or phone number in the answer box below.

Thank You!

Appendix B: Locations the Needs Assessment Survey was Posted

Locations Survey Posted

Table 6 Locations where the needs assessment survey in appendix A was posted.

Site Source	Site Name	Website Address
2/11/2019		
Facebook	DSOTA	https://www.facebook.com/groups/297148294033566/
	Dominican Occupational Therapy	https://www.facebook.com/groups/392933297438923/
	Occupational Therapy	https://www.facebook.com/groups/242349789962072/
	Occupational Therapy Treatment Ideas & Information	https://www.facebook.com/groups/OTtreatmentideasandinformation/
	OT in Primary Care and Health Promotion	https://www.facebook.com/groups/323579324877922/
	OT4OT	https://www.facebook.com/groups/311439915949/?multi_permalinks=10156566392255950&notif_id=1549932878204287&notif_t=feedback_reaction_generic
	My OT Spot	https://www.facebook.com/groups/myotspot/
	Geriatric OT, PT, and SLP Collaborative Group	https://www.facebook.com/groups/Geriatrictherapycollaborative/
Reddit		https://www.reddit.com/r/OccupationalTherapy/comments/appvtt/we_are_mot_students_who_want_to_hear_from_snf_ots/
Ensign	Ensign Therapy	https://ensigntherapy.com/

Appendix C: Training Flyer

Figure 2 Flyer created for the training at the Ensign affiliated SNF in Santa Rosa

Appendix D : Ensign Invitations to the Community

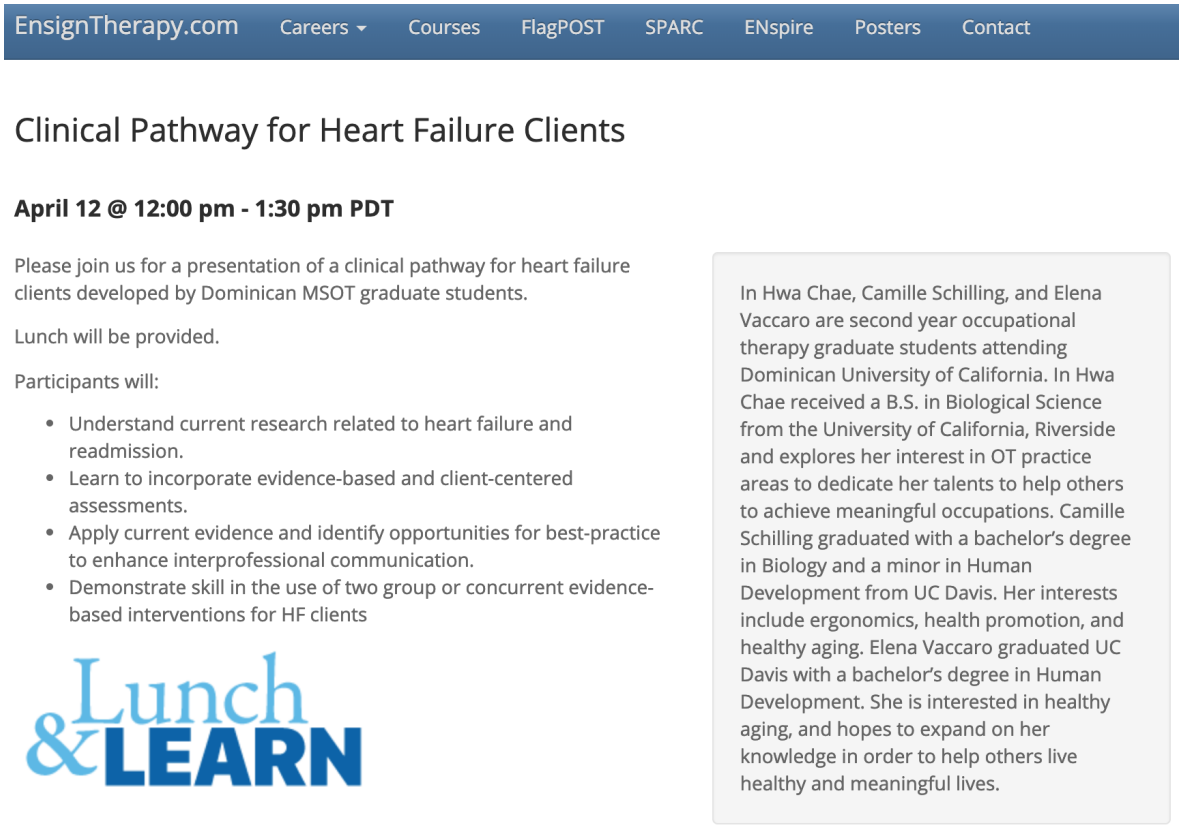

Figure 3 Ensign invitation to the community which was displayed on Ensign Therapy website

Appendix E : Post-Presentation Survey

Post-Presentation Survey

Thank you for attending our presentation! We would like to get your feedback on the Clinical pathway and the materials used today. Your insight will help us with the next steps of our project, as well as assist future in future projects/research!

I am a….

OT OTA PT PTA Student Other:_____

1. In your opinion, what were the most helpful part(s) of the presentation & workshop? Check all that apply:

Presentation Component	Workshop Component
Readmissions/Upcoming insurance changes Cognitive impairment in HF clients Psychosocial decline in HF clients Lifestyle changes in HF clients Using the Clinical pathway Other_____ Other_____	Motivational Interviewing Modified Occupational Profile BORG Education and Intervention BP Education and Intervention Time Management Group Intervention Other_____ Other_____

3. Please mark how likely you are to use the following after the presentation and workshop:

	Already Utilize in Practice	Very Likely	Somewhat Likely	Not Likely
Motivational Interviewing				
Modified Occupational Profile				
BORG Education and Intervention				
BP Education and Intervention				
Time Management Group Intervention				

4. How would you rate the practicality of using motivational interviewing in your practice?

Poor fair neutral good excellent

5. How would you rate the practicality of using the modified occupational profile in your practice?

Poor fair neutral good excellent

6. How would you rate the practicality of using the modified Borg Scale in your practice?

   Poor fair neutral good excellent

7. How would you rate the practicality of using the time management handouts in your practice?

   Poor fair neutral good excellent

8. What could be added and/or adjusted to improve the clinical pathway in the future?

9. We are planning on creating a set of video modules to instruct professionals on how to use the clinical pathway. What materials would you want to be uploaded first? See the clinical pathway (pg 1) in the manual for video module options.

10. Do you have any additional comments?

Please leave your name and phone number and/or email if you would be willing to discuss your impressions of the clinical pathway with us! All feedback welcomed.

Name:_____

Email/Phone #_____