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The Bridge Project Improving Heart Failure Care in Skilled Nursing Facilities

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Abstract

Introduction—Re-hospitalization rates and transitions of care for patients with heart failure (HF) continue to be of prominent importance for hospital systems around the United States. Skilled nursing facilities (SNF) are pivotal sites for transition especially for older adults. The purpose of this study was to evaluate in SNFs both the 1) current state of HF management (HF admissions, protocols and staff knowledge) and 2) the acceptability and effect of a HF staff educational program

Methods—Four SNFs participated in the project, two the first year and two the second year. SNFs were surveyed by discipline as to HF disease management techniques. Staff were evaluated on HF knowledge and confidence in pre and post HF disease management training.

Results—All-cause rehospitalization rates ranged from 18% to 43% in the 2 SNF evaluated. Overall, there was a lack of identification and tracking of HF patients in all the SNFs. There were no HF-specific disease management protocols at any SNF and staff had limited knowledge of HF care. Staff pre and post test scores indicated an improvement in both staff knowledge and confidence in HF management after receiving training.

Conclusion—The lack of identification and tracking of patients with HF limits SNF ability to care for patients with HF. HF education for staff is likely important to effective HF management in the SNF.

Keywords

Heart Failure; Skilled Nursing Facility; Education

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Introduction

The SNF has recently been cited as the “revolving door of re-hospitalizations” as almost one-fourth of Medicare beneficiaries discharged from the hospital to a SNF were readmitted within thirty-days.¹ The rate of re-hospitalizations from SNF grew by 29% from 2000 to 2006. The percentage of HF patients who were re-admitted to the hospital from SNF’s was last reported in 2002 and had increased from 1999.² Since SNFs are a center of transitional care from hospital to home, quality initiatives to improve care of HF patients in these facilities can be a vital component to reduce re-hospitalization rates and improve health outcomes. Notably, the current efforts for transitions of care have not specifically addressed the SNF as the destination of many HF patients.^{3, 4}

The National Hospital Discharge Survey demonstrated that the percentage of patients discharged with HF going to long term care facilities (LTC) including SNF after hospitalization has steadily increased in the last 20 years. In addition, HF-related hospital discharges to other than home in the last 10 years has nearly tripled.⁵ In an analysis of the Medicare database (Medicare Provider Analysis and Review, MEDPAR) of the 1,188,711 patients who were discharged from an acute care with a diagnosis of HF in 2003, 25% went to a SNF.⁶ HF patients more likely to be discharged to SNF were older, female, had more than two co-morbidities and had a greater severity of illness as indicated by longer lengths of stay and higher hospital costs.⁶

SNF, with a slower pace and a focus on rehabilitation, is an ideal place to educate and coach a patient and their family on HF self-management. Patient education is an important component of the discharge process in acute care, although a patients’ retention of information given during a hospitalization is questionable. Teaching patients, however, requires that the staff is knowledgeable in HF care and has the ability to effectively pass this knowledge to the patients. There is little evidence in the literature about the level HF knowledge of SNF staff or SNF programs that direct efforts to educate SNF staff members who care for patients with HF. The purpose of the Bridge Program was to evaluate in SNFs both the 1) current state of HF management (HF admissions, protocols and staff knowledge) and 2) the acceptability and effect of a HF staff educational program.

Methods

Four SNFs in the Greater Cleveland area agreed to the evaluation and to participate in an educational program. SNFs were chosen based on the relationship with our academic institution. Since each facility has its own leadership and Board of Directors, those with medical directors from the academic geriatrics program from University Hospitals/Case Medical Center were the most amenable to the project and therefore evaluated.

Evaluation of the Current State of HF Management in the SNFs: HF Admissions

Initially, HF admission rates as well as the re-hospitalizations rates were requested from each facility for the calendar year of 2008. This was important in order to learn the prevalence of a HF diagnosis in the facilities. Gaining this information proved to be a challenge since none of the facilities tracked the diagnosis of HF, identified patients with HF on their SNF unit, or HF related symptoms/diagnosis as reason for rehospitalizations. Therefore we identified patients with a primary or secondary diagnosis of HF administratively using the Minimum Data Set (a federal/state required quality assessment tool), the site-specific database of rehospitalizations maintained by the Director of Nursing (DON) and a third administrative database by ICD codes or MIDS dataset. No tracking of HF patients was required by either facility. Since the DON maintained a database for their own quality improvement initiatives in two of the facilities we were able to acquire data on

rehospitalizations. This provided an estimate of re-hospitalization rates for these two facilities. Since HF was not specifically followed, these are all- cause hospitalizations. From this merged database, major co-morbidities (pulmonary disease, diabetes, and dementia) and rehospitalization rates were identified.

Evaluation of HF Management in the SNFs: HF Protocols and Staff Knowledge

In order to evaluate the staff knowledge and facility protocols for HF management, we used discipline specific surveys to collect information from managers of several departments. Departments surveyed included nursing, physical therapy, social work, dietary, administration and medical records. Survey questions reflected standard HF management techniques emphasized in National HF Guidelines^{7, 8}

Design and Implementation of the Bridge Project HF Education Program

Based on the needs assessment, a HF disease management education program was designed specifically for SNF staff. The multidisciplinary team that developed the program included a geriatrician, nurse, educator, and cardiologist. The staff educational program was supported by the National Heart Failure Training Program (www.NHeFT.org). The mission of NHeFT is to educate health care professionals in best practices for HF. In the last five years the NHeFT curriculum has expanded to include sites of transitional care including home care agencies.

Five major objectives were identified as vital to the curriculum for HF management and these included:

1. Identification of patients with HF
2. Recognition of the signs and symptoms of HF
3. Identification, inter-professional communication, and tracking of clinical measures in patients with HF
4. HF self-management processes for patients and caregivers
5. HF specific discharge plan for the transition to home

The educational program was designed with two different tracks: an Advanced program for licensed nurses, dieticians, and physical therapists and a Basic program for STNAs, social workers and medical records staff. Each track was subdivided into one hour sessions for the advanced curriculum and six 20 minute sessions for the basic curriculum. Pharmacists were included in the plan but did not participate because they were outsourced and not available for training. We identified the STNA as “caregivers” for the patients, since they had the most frequent and direct contact. Therefore, the STNAs were trained to model the caregiver role for the patient’s actual caregiver in the home. The STNAs were taught about the importance of daily weight vigilance, medication adherence and a low sodium diet to control fluid retention. We considered this self-care coaching to be an important part of the patient’s rehabilitation and recovery. For summative evaluation, staff was evaluated with pre and post tests on both knowledge and confidence in the management of HF in order to assess the immediate impact of the educational program. Pre and post tests were given following each module as well as at the beginning and the end of the program.

In order to maximize the success of the education program, we recognized the challenge of a 24/7 schedule. In our first year we taught face to face educational sessions during all three nursing shifts (both weekdays and weekends) to facilitate feedback from the staff. Each facility had its own development staff member who was responsible for education programs and assisted us in scheduling. Face to face education was time consuming and costly

although necessary to gauge the response to the program. We modified our originally planned face to face sessions into web-based modules. The web-based online training was made available on the NHeFT™ website. The online system was designed to fit the needs of busy staff with the following options: 1) individual modules were brief and could be completed easily in one sitting 2) staff could log on and off at will with a placeholder that returned them to the place they left each time they logged back on, and 3) staff could start over with no penalty. The program also was designed to track participation and pre and post test results for each facility and generate reports.

After the staff educational program was completed, facilities identified volunteers to be HF Champions who would participate in further training and coaching and ultimately lead the implementation of new policies and procedures once for HF management once they were developed. HF Champions would also be responsible for assuring that new staff were trained. We requested that the HF Champions represent as many disciplines as possible. Volunteers were solicited during the introductory meetings and again later during their educational sessions. We recommended that institutional leadership approve and/or recommend the Champion volunteers so that staff in good standing and with some leadership skills took the position. The main task of the Champions is to perpetuate the program within the facility and within their departments in the spirit of “training the trainers”. Forty HF Champions representing the multidisciplinary team at each facility attended an additional 4 hour workshop on teaching others how to manage HF to prepare for their role. At this workshop, standardized patients were used to demonstrate patient education techniques to improve HF self-management. The workshop also provided a venue for the champions from all facilities to meet and discuss successes and challenges specific to their facility.

Results

SNF characteristics are described in Table 1. Three of the facilities were urban and 1 suburban. SNF 3 did not have long term care services and primarily admitted patients from an associated acute care. The other three facilities had both long term care and skilled services.

Evaluation of HF Management in the SNFs Heart Failure SNF Admissions

In SNF 3 18.4% of patients with HF were hospitalized and in SNF 4 43% of patients were hospitalized. Data also reveal that in SNF 4 the patients with HF were assigned more diagnosis codes than those in SNF 3 which may indicate a more complex and sicker population of patients. The dual diagnoses with the highest rehospitalization rates for SNF-3 was 21% for patients with HF and diabetes and in SNF-4 was 75% with HF and COPD. (Table 2)

Evaluation of HF Management in the SNFs: HF Protocols and Staff Knowledge

All staff who were interviewed recognized HF as a common condition for their patients but were unaware of the existence of national HF guidelines or disease management programs. Staff also reported that they did not integrate HF interventions in the care of their patients. The SNF admissions coordinators did not receive nor request specific HF related clinical data from the referring acute care facilities. Hand-off information included standard physical and social information important in rehabilitation. HF specific information was only received passively by the SNF and no request was made for information such as left ventricular function, weight trends, plans for HF medication up-titration, and dietary and physical activity recommendations. Certain standard policies and procedures in the SNF units were opposed to adequate HF management, particularly when it came to managing

volume status. One of the most important was that of weighing patients. Standard procedure in all the SNFs was to weigh their patients weekly. Weekly weights easily can miss the patient who is getting into trouble with volume status. Additionally the policy in all SNF was for diets to be developed according to patient preferences. The regular diets in all SNF were high in sodium (>2000 mg a day with max >5000 mg a day), and since patients were not being educated as to the effect sodium has on HF exacerbations an appropriate low sodium diet was not appreciated. Table 3 describes the survey responses of each discipline in relation to HF management.

Results from all four facilities indicated that staff needed basic education in HF pathophysiology and management. Inclusion of all staff from all departments helped promote the team approach necessary to improve care for these patients. We expected all staff to recognize worsening signs and symptoms of HF. For example the STNA (State Tested Nurses Aide) would notice worsening lower extremity edema when providing care or a social worker may notice a patient to be more short of breath during an interview.

Acceptability and Evaluation of the Bridge Project HF Education Program

The test results from the online educational program and the confidence assessment are depicted Tables 4 and 5. The administration at the SNFs strongly encouraged all staff to complete the coursework. The administrators did have access to which staff completed the coursework and those who did not. Sixty-five percent of staff completed the program. (In contrast to only 12% of staff who completed the live program). Many staff assigned to the Basic curriculum did not complete the program accounting for the differences in numbers. Although the Basic curriculum was designed in 20 minute segments we suspect it was too lengthy and staff dropped it before completion. In the Advanced program, most individuals did complete the curriculum. In both programs, scores indicated that there was an improvement in the staffs' knowledge and confidence to care for patients with HF. The scores on the post tests for both knowledge and confidence in HF management were significantly better than the pretests for both the Basic and Advanced curricula.

DISCUSSION

Results from the surveys of HF management in SNF were surprising in light of the extensive national quality improvement programs to reduce rehospitalization rates for HF.³ We expected SNF to have some type of HF management protocols in place. In the two SNFs assessed, the rates for rehospitalization were surprisingly different from one another. SNF-3 had lower rates. This observation could be related to its location, i.e., hospital-based with access to many hospital services and specialists. SNF-4 is community based and admits patients from a number of different acute care facilities. The higher patient comorbidities in SNF-4 vs. SNF-3 (Table 2) also likely contributed to this difference.

One of the most unexpected challenges shared by all facilities was the absence of any system which could identify and track patients with HF. Presently Medicare data shows that all-cause rehospitalization rate is 18-20% and HF represents the largest number of 30 day rehospitalizations.^{4,9} Recognition of the frequency of a HF diagnosis in SNF is critical to allocation of resources, staff acceptance of practice change, and integration of the lessons learned in the educational program. We were unable to glean more specific details on rehospitalizations than all-cause rehospitalization rates. Due to limited data it is unknown whether patients were being rehospitalized for HF or for other causes. In addition, billing data is frequently skewed towards the highest reimbursed diagnosis (often HF). Therefore a patient by patient prospective analysis is the only way to truly know what is happening with HF patients in SNF. These patients are likely the most vulnerable HF patients to adverse outcome.

The implementation of the project was designed to be dynamic and was based on the premise that all staff would attend all sessions. However, we found that initial enthusiasm by the facility leaders did not necessarily convert to action or to the attendance of staff. The knowledge and confidence testing also presented a problem for the live training. The pretests were channeled through the DON for distribution prior to the educational sessions in order to reach all shifts. Staff was confused by the role of the testing procedures and at one facility staff took the test as a group thereby limiting the interpretation of the results. Others completed the post tests but did not attend the sessions. We therefore only present the data for the online training.

Attendance at the sessions was unpredictable and highly variable. Often the nurse manager or the most senior nurse would cover the facility while the others came to the live education sessions. This created a problem by excluding the facility clinical nurse leader. In addition, the same staff members were not necessarily coming to all 4 sessions. In general there was poor comprehension of the totality of the program and therefore many staff members were not receiving the didactics entirely. The facility leadership was charged with communicating and coordinating the sessions and assuring attendance. This communication, unfortunately, was not always effective. In addition the staff turnover frequently impacted our ability to confirm that all clinical staff had been trained. Ultimately, the need for a web-based online curriculum with electronic tracking of participation became readily apparent to both ensure that all staff received the training, assess knowledge and to track success of completion.

Barriers to a Successful HF Educational Program in SNF

The biggest challenges to the Bridge Project HF educational program were the SNF staffing patterns and organizational structure. The high turnover of staff diluted the training and implementation of the educational program. For example, one facility had 3 different DON in 18 months. Some of the facilities had the nurses and STNAs rotating on different floors (some SNF and some LTC floors) with one facility turning staff over every 21 days, the staff assigned to SNF may not be the same staff assigned to SNF in the upcoming weeks so this thwarted the continuity of learning for these staff members.

Based on the immediate response to many of the educational modules, we were surprised to find a hierarchical culture amongst staff which was a barrier to the team approach to HF care. The STNAs in particular questioned why we were teaching them to assess HF signs and symptoms such as edema and weight gain since the nurses would not request the STNAs assessment. The STNAs were uniformly overwhelmed by the task of weighing patients daily to assess volume status. Daily weights are important for the SNF HF patient to help staff identify when a patient is becoming either volume overloaded or dehydrated from an over-aggressive diuretic regimen. Several nurses voiced lack of self-efficacy and felt they were just there “to pass medications”.

The lack of inter-facility communication put the SNF staff at a handicap since they were not given enough HF relevant details about their patients. In all four facilities there was little medical information transfer from the acute care facility. Communication of patient information between sites of care has been found to be a critical component of effective transitional care.¹⁰ Effective communication of clinical information requires an adequate knowledge base between all sites of care so appropriate information is provided and received. Specific HF information, such as echocardiogram, weight trends and goals were not uniformly sought nor received from the acute care hospital. Within the facility, the nurses, physical therapists and dieticians were aware of who had a diagnosis HF only if it was their primary diagnosis at admission. STNAs, who have direct contact with the patients, were routinely unaware of their patient’s diagnosis and therefore did not know when to look for symptoms.

Additional Barriers Identified to Improving HF Management in SNF—Three of the SNF assessed are part of a larger LTC and the number of beds designated as “SNF beds” varies and are not necessarily clustered together on the same floor. This makes it difficult to provide a higher level of care which HF patients need post-hospitalization. Often the SNF patients are managed very similarly to the LTC patients but have more rehabilitation requirements depending on their level of care and skilled needs. These patients will return to the same facility and same bed but have an increase in other services such as physical and occupational therapy. The nursing care team does not differ necessarily from the LTC patients since often beds are flexible. For those on LTC units, the staff may not be as well equipped to manage the level of acuity of a SNF patient with HF. The ratio of patient to nurse within SNF varies and in our facilities from 1:8 to 1:25. There are no mandatory federal staffing ratios for SNF, and state requirements vary. Overall, the structure of integrating SNF patients into LTC beds and the low staffing ratios result in care delivery that does not necessarily meet the needs of SNF patients with HF.

Presently, there is no impetus to improve HF care in SNF. All four of the SNF assessed focus on meeting regulatory requirements for their facilities. The highly regulated SNF environment, both state and federal, presents an obstacle and challenge to the implementation of HF educational or disease management programs. Since none of the regulations are chronic disease specific, there is no obvious gain (i.e. regulatory compliance or financial) for a SNF to enact a disease management program. Most facilities design their care to meet regulatory requirements and spend the majority of their time assuring that they successfully meet those requirements. Any program that falls outside these regulations will be difficult to implement and may be seen as a burden. As such, preparation for regulator inspection was a frequent barrier to scheduling our educational sessions and meetings with staff. The inattention to specific disease management programs in SNF presents a great problem as SNF are a major site of transitional care for patients with multiple chronic conditions. With the change in the health care environment and a focus on reducing 30 day rehospitalization rates for patients with HF, transforming the focus of care in the SNF needs to be recognized as an integral component of transitional care. The SNF is an important partner for acute care facilities tasked with reducing their 30 day rehospitalization rates. Based on our assessment and pilot educational program, the current regulations and barriers to change indicate that SNF and their staff are not ready and need education and assistance to effectively manage HF.

Summary of the Bridge Project Experience, Future Directions and Challenges

In summary, SNFs are at the center of transitional care for patients with HF requiring additional rehabilitation. Rehospitalizations from SNF are common and those with HF have high all-cause readmissions. HF education and disease management programs are greatly needed. Staff in SNF is uniformly under-educated on HF management. The staff may recognize that it is important to deliver specific interventions for patients with HF but lack the knowledge, skills, and tools to successfully transition these patients from acute to intermediate to chronic care. The Bridge Project Educational Program demonstrated that web-based online modules are a better way to deliver education to the staff. Challenges exist with getting all staff to complete the modules and shorter more focused modules for the BASIC curriculum may be the answer. Of those staff that did complete the modules, knowledge was gained and satisfaction confirmed.

Limitations

Our assessment of four SNFs may not be representative of SNFs in general. Whether or not HF education and program development for SNF staff will reduce re-hospitalization rates is unknown. Since there is no impetus or mandate to track SNF patients, it was difficult to

attain data from the SNFs in their present state. This is a major obstacle that must be overcome for future analyses. Further study is also needed to understand SNF culture and program implementation in order to successfully educate staff and change practice.

Conclusion

HF is common in older adults and a major cause of hospitalizations. Unfortunately, there are presently no federal or state mandates for monitoring HF in SNFs. Unless SNFs implement disease management programs to lower the rate of re-hospitalizations, these rates will continue increase along with the costs. Finally, as the population continues to age, and the number of patients admitted to SNF continues to grow, the burden of unmanaged HF on the healthcare resources will be devastating. Educational programs to improve coordination of care and increase staff knowledge regarding the management of HF in the SNF is the first step to ensuring that SNF patients receive the evidenced based care they need to transition to home. Transitions to SNF must be added to the current national initiatives to improve the rehospitalization high rates.

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Table 1

Characteristics of SNF Identified by Numbers

Facility	1	2	3	4
Location	Urban	Urban	Urban	Suburban
Facility Structure	Not for profit	Not for profit	Not for profit	Not for profit
Race (%)	74% AA	95% AA	NT	99% Caucasian
Sex (%)	80% women	NT	NT	NT
Mean Age (years)	NT	NT	NT	80
RN/LPN: patient ratio	1:25	1:25 nights; 1:15 days	1:8-9	1:15
# of Hospitals referring to SNF	10, mostly from 4	6	8 mostly from 1	10
# of SNF admits/yr	150	NT	935	720
# of SNF beds	All beds flexible	49	50	60
# of HF readmissions	NT	NT	NT	NT

NT=not tracked

* Flexible bed = any LTC bed can take a be converted to a skilled bed

Table 2

Data for Heart Failure Diagnosis, Co-morbidity, and Re-hospitalizations in Two SNFs* for 2008

Patients	SNF 3 n=1042			SNF 4 n=389		
	% (n)	Average # ICD-9 codes	% with re-hospitalization	% (n)	Average # ICD-9 codes	% with re-hospitalization
HF	13.0 (141)	6.9	18.4	20.3 (79)	8.6	43.0
No HF	86.5 (901)	5.0	9.5	79.7 (310)	6.5	17.8
DM	20.0 (208)	5.8	14.4	22.6 (88)	8.8	25.0
COPD †	12.2 (127)	5.6	8.7	16.2 (63)	9.9	33.3
Dementia ‡	6.0 (63)	6.3	14.3	17.2 (67)	8.4	31.3
HF + DM	3.6 (38)	6.7	21.1	6.9 (27)	9.4	40.7
HF + COPD †	2.5 (26)	6.9	7.7	4.1 (16)	10.0	75.0
HF + Dementia ‡	1.2 (13)	6.4	7.7	2.8 (11)	10.6	54.5
HF, DM or COPD †	61.9 (645)	4.8	8.7	54.5 (212)	5.2	17.5

* Two SNFs only were included because data were available. DM= Diabetes, HF= Heart failure, COPD= Chronic obstructive pulmonary disease

† COPD includes all chronic obstructive lung diseases, including bronchitis, asthma, and emphysema

‡ Dementia includes dementia, delirium, psychosis, and "organic brain syndrome"; does not include schizophrenia, bipolar, anxiety, depression Data from SNF 4 is only from their SNF unit. Data from flexible beds were not available. ICD-9 codes were used to determine the number for diagnosis per patient. The diagnosis categories are not exclusive of one another. For example, many of the patients with HF also have DM, so they are included in both categories. All data on re-hospitalization are all-cause re-hospitalizations. The re-hospitalizations represent the % of patients with the diagnosis listed in the first column for each SNF.

Table 3

Departmental Assessment of HF Management in Skilled Nursing Facilities

Department	Assessment	SNF -1	SNF-2	SNF-3	SNF-4
Nursing and STNAs *	Are patients with HF identified on admission to the facility?	Yes ICD-9 code or history history	Yes ICD-9 code or history history	Yes ICD-9 code or history history	Yes ICD-9 code or history history
	Are the patients with HF tracked by facility staff?	No	No	No	No
	Do you receive HF specific information from the acute care facility?	No specific HF information	No specific HF information	No specific HF information	No specific HF information
	What processes are currently in place for care of HF patients?	None	None	None	None
	How often are weights taken and by whom?	STNA measures patients weight on admission q weekly	STNA measures patients weight on admission q weekly	STNA measures patients weight on admission q weekly	STNA measures patients weight on admission q weekly
Dietary	What is the protocol for an increase in weight?	None	None, dietitian reviews weights regularly	If 5% increase/day or 7% increase/wk the practitioner, dietitian and family are notified	Practitioner called for a 3 kg weight gain
	Are flexible diuretic regimen orders available?	No	No	No	No
	Is patient HF education available or mandated?	No	No	No	No
	What HF specific information do you receive from acute care about diet and fluids?	Usually cardiac, 2 gm sodium, no fluid recommendations	Unknown	Usually cardiac, 2 gm sodium.	Usually no recommendations.

Department	Assessment	SNF -1	SNF-2	SNF-3	SNF-4
Physical Therapy	<i>What do you know about HF and the role of diet?</i>	†	Little to none	Little to none	Little to none
	<i>Do you develop a dietary plan for each resident?</i>	†	Yes	Yes	Yes
	<i>How much control does the resident have over their diet?</i>	Patient preferences favored over dietary plan.	Patient preferences favored over dietary plan.	Patient preferences favored over dietary plan.	Patient preferences favored over dietary plan.
	<i>What constitutes a low sodium diet?</i>	2-4 gm sodium diet	No salt shaker available at the meal	No salt shaker available at the meal	No salt shaker available at the meal
	<i>Is education regarding sodium intake provided to patients?</i>	†	Sometimes	No, but handouts are available	If requested
Physical Therapy	<i>Is dietary education pertaining to reading food labels provided to patient while in SNF?</i>	†	No	Sometimes	No
	<i>Are there specific protocols you use for a patient with HF?</i>	No specific protocols for HF	Unavailable for interview	No specific protocols for HF	No specific protocols for HF
	<i>Are the acute care facilities required to send HF specific information to the SNF?</i>	No	No	No	No
Medical Records	<i>Who is in charge of the discharge plan?</i>	Social Work	Social Work	Social Work	Social Work
	<i>What HF education and discharge planning is provided to the patients and caregivers?</i>	Nothing specific to HF	Nothing specific to HF	Nothing specific to HF	Nothing specific to HF

* STNA: State Tested Nurses Aids;

† Facility 1 had an outside dietary service and would not be surveyed; the Director of Nursing provided some of the Information

Table 4

Pre and Post Test Scores For Basic and Advanced Curricula

BASIC Curriculum			
Overview of HF			
Recognizing the Signs and Symptoms of HF			
The HF Treatment Plan			
Weight and Fluid Management for HF			
The Caregiver and Medications for HF			
The Caregiver and Diet for HF			
	Pretest	Posttest	p-value *
Knowledge mean score (n)	82.8%(57)	96.2%(26)	<.01
Confidence mean (n)	3.99(30)	4.69(20)	<.001
ADVANCED Curriculum			
Introduction to HF			
Clinical Assessment of the Patient with HF			
Medication Management of the Patient with HF			
Transitions of Care			
	Pretest	Posttest	P-value *
Knowledge mean score (n)	82.6%(54)	95.7%(46)	<.001
Confidence mean (n)	3.46(46)	4.87(43)	.055

Basic Program was for STNAs, social workers, dietary, admissions staff Advanced Program was designed for nurses, physical therapists and pharmacists

* p-values were determined with paired t-tests and results are based on only those participants with both pre and post tests completed

Table 5**Content of Confidence Pre and Post-tests**

BASIC Pre and Post Confidence Assessment included the following:

- I can describe the common symptoms of HF.
- I know how to identify low salt foods.
- I know why a low salt diet is important to the patient with HF.
- I know how to read a food label.
- I know what to do if I the patients has too much salt.
- I know when to call the doctor.
- I know why it is important to weigh the HF patient every day.
- I can discuss at least one way I can support the HF team.
- I can explain the benefit of physical activity for my HF patient.
- I am an important part of the care team.

ADVANCED Pre and Post Confidence Assessment included the following:

- I can describe how the heart works.
 - I can explain the two kinds of HF.
 - I can list some of the common causes of HF.
 - I can describe the common symptoms of HF.
 - I can identify the common medications used to treat HF.
 - I know why these medications are important for the HF patients.
 - I know why a low salt diet is important to the patient with HF.
 - I can explain the harmful effects of salt to the patient's family.
 - I know when to call the doctor.
 - I know why it is important to weigh the HF patient every day.
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Confidence is along a Likert Scale with 1 being "no confidence" and 5 being "Strongly Confident"