University of Connecticut Health Center
Center on Aging

Donaghue Foundation
Another Look: Better Health for Elders in Care Facilities Progress Report

1. Grant Information
Grant number: 20130498
Name of Principal Investigator: Lisa C. Barry, PhD, MPH
Institution: UConn Health Center/Center on Aging
Project title: A Community-Based Skilled Nursing Facility for Difficult-to-Place Patients
Project period: January 1, 2014-December 31, 2015
Period covered in this report: January 1, 2014-December 31, 2015 (FINAL REPORT)

2. Research Aims:
The **primary objective** of the study was to use routinely collected data to determine the impact of transferring "difficult-to-place" patients from state-operated facilities to a specialized skilled nursing facility (SNF) on patients' quality-of-care and quality-of-life. Patients with serious mental illness and aging inmates/ex-offenders are difficult to place in traditional Medicaid-paid SNF settings. The opening of an SNF for difficult-to-place patients, "60 West" in Rocky Hill, Connecticut, created a previously non-existent option for the long-term care of these historically marginalized persons. In partnership with 60 West and Connecticut Department of Mental Health and Addiction Services (DMHAS) (i.e., the stakeholders), the proposed research project sought to use routinely collected data to evaluate pre-post quality-of-care and quality-of-life outcomes of individuals who transitioned from a State of CT-run psychiatric facility or a CT Department of Corrections (DOC) facility to 60 West. The project's specific aims were the following:
1) To evaluate pre-post change in key patient behaviors, including wandering and acts of aggression towards staff and other patients;
2) To assess pre and post quality of life indicators such as depression and cognitive status;
3) To determine pre and post change in health services use (e.g., ER visits).

3. Study Sample Results

Between May 1, 2013 and June 30, 2015, a total of 86 patients transitioned to 60 West. As shown in Table 1, patients were racially diverse and the majority of patients were male and transferred from a state psychiatric facility. Patients transferred from a correctional facility were significantly younger than those transferred from a psychiatric facility.

Table 1. Demographics of 60 West Residents Overall and by Pre-Transfer Facility.*

	Total Population n=86	Psychiatric Facility n=48	Correctional Facility n=38
Age, mean (SD)	58.4 (12.5)	61.3(10.4)	54.6 (13.8)†
Female, n (%)	9 (10.6)	6 (12.5)	3 (7.9)
Race, n (%)			
White	45 (52.3)	27 (56.2)	17 (44.7)
Black	27 (31.4)	13 (27.1)	14 (36.8)
Hispanic	14 (16.3)	8 (16.7)	7 (18.4)

* Residents admitted between May 1, 2013 and June 30, 2015.
†p=0.01, Age range 27 to 92

4. Project Results

Pre-Admission Findings

Before evaluating pre-post changes, we first considered pre-admission (i.e., baseline) differences by pre-transfer facility. Comparison of Minimum Data Set (MDS) data, as shown in Table 2, indicated that pre-admit cognition scores and depression symptom severity scores did not differ according to the pre-transfer facility. Whereas people selected for admission to the SNF had few behavioral issues by design, individuals who transferred from a psychiatric facility were more likely than those coming from a correctional facility to have had behavioral symptoms (e.g., hitting, cursing) prior to transfer to the specialized SNF.

Pre-transfer health services utilization, including hospitalizations and ER visits, was more prevalent among those who had been residing in a correctional facility. In contrast, pre-transfer antipsychotic medication use was more prevalent among those who were residing in a psychiatric facility. We concluded that:

- Pre-admission site is a better indicator than age of patients' previous health services and anti-psychotic medication use, behavior problems & cognitive status.
- Only 3% (n=1) of correctional facility patients had any behavior problems in the week before transition, but 56% had been hospitalized in the year prior to the transition to 60 West. These findings demonstrate that extreme care was used in selecting low-risk (i.e., minimal behavioral problems) patients with significant medical needs for admission.
- Among patients transferring to a specialized SNF from a psychiatric facility, monitoring their behaviors and antipsychotic medication use may be especially important.

Table 2. Minimum Data Set (MDS) Information According to Pre-Transfer Facility.

	Psychiatric Facility n=48	Correctional Facility n=38
Cognition score, mean (SD)	9.9 (4.0)	13.6 (1.9)
Depression symptom severity score, mean (SD)	3.6 (3.5)	3.7 (4.0)
Behavioral symptoms, n (%)	7 (14.9)	1 (2.6)*
Health Services Use Data		
Pre-admit hospitalization, n (%)	11 (22.9)	20 (56.2) †
Pre-admit ER visit, n (%)	1 (2.1)	11 (29.0) ‡
Antipsychotic medication use, n (%)	37 (77.1)	6 (15.8)‡

*p<0.10; †p<0.01; ‡p<0.001

Cognition and depression assessed using the Brief Interview for Mental Status (BIMS) and the PHQ-9, respectively. Higher scores on the BIMS indicate better cognition; higher scores on the PHQ-9 indicate more depression symptoms. Examples of behavioral symptoms are hitting, kicking, and cursing.

Pre-Post Findings

We were pleased to have a UCONN Medical Student, Erin Kalla, utilize data from this research project to evaluate changes in antipsychotic medication use from pre-admission to 6-months post 60 West admission. A total of 73 residents had pre-post data available. Of these, 33 (45.2%) were taking an antipsychotic medication at admission to 60 West. Table 3 presents a comparison of patients who were and were not taking an antipsychotic medication at admission. Patients who were taking an

Table 3. Comparison of admission characteristics for those taking and not taking an antipsychotic medication.

Characteristics	On Antipsychotic n=33	Not on Antipsychotic n=40
Age ≥60, n(%)	19 (57.6)	13 (32.5)*
Behavioral symptoms, n(%)	7 (21.2)	1 (2.5) †
Taking another class of psychotropic medication, n(%) ‖	24 (72.2)	24 (60.0)
MDS cognition score, mean (SD) §	9.4 (3.9)	12.6 (3.0) ‡
MDS depression score, mean (SD) §	3.9 (3.7)	4.1 (4.0)

*p<0.05; †p<0.01; ‡p<0.001; Cognition and depression assessed using the Brief Interview for Mental Status (BIMS) and the PHQ-9, respectively. Examples of behavioral symptoms are hitting, kicking, and cursing. Among the 65 residents who could complete the assessment.

‖ Include antidepressants, anti-anxiety medication, and mood stabilizers

antipsychotic medication were more likely to be age ≥60, to have a history of behavioral symptoms, and have lower MDS cognition scores. These findings suggest that residents with dementia, indicated by low cognition scores or inability to complete assessments, were frequently prescribed antipsychotics pre-transition to address behavioral symptoms.

As shown in Table 4, there were16 (21.9%) patients who experienced a pre-post change in the number of antipsychotics they were prescribed. Of the 40 who were not taking an antipsychotic at admission, 4 of them were taking at least 1 antipsychotic by 6 months. Among the 33 who were taking an antipsychotic at admission, 9 (27.2%) had a decrease in the number of antipsychotic medications they were taking by 6 months.

Table 4. Changes in Number of Antipsychotic Medications (Admission to 6-months)

	At 6 months
No antipsychotic at admission n=40	
0 to ≥1, n (%)	4 (10)
On antipsychotic at admission n=33	
1 to ≥2, n (%)	3 (9.1)
≥1 to 0, n (%)	4 (12.1)
≥2 to 1, n (%)	5 (15.2)

Given the national focus on reducing antipsychotic use as an important quality-of-care indicator for SNF residents, facility staff should consider best practices aimed at reducing antipsychotic use, particularly among residents with dementia, following transition into the facility.

Among the 70 patients who had one-year of post-admission data available (admitted between May 1, 2013 and December 31, 2014), hospitalization rates declined significantly after admission to the specialized SNF: 36.5% in 12 months pre-admission versus 10.6% in 12 months postadmission (p-value for difference in proportions <0.001). Between admission and the first quarterly assessment, mean cognition (11.6+3.7 vs. 11.5+4.1) and depressive symptoms scores (3.3+3.4 vs. 3.1+3.8) assessed using the Minimum Data Set did not differ significantly. Patients selected for admission to the SNF had few behavioral issues by design and only 4 people had recorded incidents of physical or verbal behaviors over the subsequent 12 months.

Transitioning from state psychiatric or correctional facilities to a more appropriate and lower cost site of care (i.e., SNF) does not result in negative behaviors such as aggression or to increased symptoms of depression or worse cognition. In addition, the skilled nursing facility is better able to prevent hospitalizations.

Table 5. Specialized SNF Resident Outcomes

	N=40*
Died, n (%)	11 (27.5)
Discharged to community, n (%)	13 (32.5)
Transferred to another SNF, n (%)	7 (17.5)
Transferred back to prison, n (%)	6 (15.0)
Other, n (%) **	3 (7.5)

* Total number of residents transferred out of 60 West between May 1,2013 and June 30, 2015
**Transferred to hospital or a state psychiatric facility.

Finally, as shown in Table 5, 40 (46.5%) individuals were subsequently discharged from 60 West or died. Remarkably, of the 29 patients who were discharged, 13 (44.8%) were to community-based settings, indicating that 60 West served as an intermediate step from a more intense and expensive setting (psychiatric or correctional institution) to ultimately an even less restrictive community level. Thus 60 West is playing a significant role in Connecticut's efforts to rebalance its long-term care system for this difficult-to-place population. Further, another 28% of the subsequent "discharges" were due to death. Arguably, the transition to a SNF for this subgroup allowed for a heightened quality of end-of-life care, compared to their previous location. Only a few people were hospitalized (medical or psychiatric) (3% of total) and did not return to 60 West or returned to prison (7% of total), again demonstrating the appropriateness of 60 West for the individuals identified as likely to benefit from this care setting.

5. Budget Variances:
We have a total of $1,251 remaining. We spent slightly less than we originally indicated in our budget in Personnel. In addition, the laptop computer and attachments (e.g., mouse) cost about $330 less than what was originally budgeted.

6. IRB Approval:
The proposed project was not deemed to be Human Subjects research by the UConn Health IRB. Alternatively, we had a Human Subjects Research Determination Form. We also received approval from the DMHAS IRB.

7. Intellectual Property:
None

8. Publications and Presentations:

- Barry LC, Glick J, Robison J. A Community-Based Skilled Nursing Facility (SNF) for Difficult-to-Place Patients: Preliminary Data. Gerontological Society of America Meetings, Washington, DC 2014.

- Barry LC, Glick J, Robison J. Pre-Admission Characteristics of Patients Admitted to a Specialized Skilled Nursing Facility (SNF) for Difficult-to-Place Patients. Gerontological Society of America Meetings, Orlando, FL 2015.

- Kalla E, Robison J, Glick J, Barry LC. Antipsychotic Medication Use in Difficult-to-Place Patients before and after Transfer to a Specialized Skilled Nursing Facility (SNF). Accepted to be presented as a poster in the Academy Health Student Poster Session and in the Long Term Care Interest Group Session which will take place in June 2016 in Boston, MA.

- Barry LC, Glick J, Robison J. Pre-Post Outcomes Among Those Admitted to a Skilled Nursing Facility for Difficult-to-Place Patients. Submitted in March 2016 as an abstract to the 2016 Gerontological Society of America Meetings.

We are in the process of preparing a manuscript for submission and expect to submit findings to a peer-reviewed journal by September 2016.

9. How the program is working

We feel that this “Another Look” grant has Helped 60 West facility staff to identify areas where improvements to best practices could enhance outcomes. For example, 60 West staff are now requesting that the transferring facility (i.e., state psychiatric hospital or correctional facility) provide information regarding hospitalizations and ER visits in the year before transfer. Consequently, the process for collecting important pre-admission data has been streamlined and the staff have a better picture of each new patient upon admission.

We have provided 60 West with a tracking database that can continue to be used to track patient outcomes and create reports. In addition to fields for data that was used specifically for this project (e.g, Minimum Data Set data), the tracking database includes fields requested by 60 West (e.g., sex offender status; history of a violent offense) that may help them to better understand their patient population.

60 West is clearly better able to prevent hospitalizations among its residents, while not increasing problem behaviors, depression or cognitive deficits. The prescribing of anti-psychotics among residents with dementia has been discussed with 60 West staff, in the context of national efforts to reduce this practice. 13% of 60 West residents died during the study period, about half the one year rate of nursing home mortality for older adults. This lower mortality rate is likely because 60 West residents are younger on average than the typical nursing home population; nevertheless, for prison inmates or psychiatric hospital patients near the end of life, this specialized SNF certainly provides more appropriate end-of-life care for this good-sized subgroup. Finally, the use of 60 West as an intermediate step to eventual community transition for 15% of people admitted during its first 2 years of operation indicates an important and unique role for this facility in the state's larger rebalancing goals, for this difficult-to-place population.

10. Other

In conclusion, this evaluation of the first specialized SNF for difficult-to-place patients from correctional and state psychiatric institutions has 1) identified areas where transfer to a specialized SNF may be most beneficial to overall patient health/well-being, such as patients with frequent hospitalizations, patients with dementia but with minimal behavioral problems, patients at the end of life and patients needing an interim step before final transition to the community; and 2) informed the development of an evidence-based model for establishing specialized SNFs for difficult-to-place patients in other states.