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An Inpatient Rehabilitation Interprofessional Care Pathway for Traumatic Hip Fracture: A Pilot Quality Improvement Project

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In partial fulfillment of the requirements for the degree of Doctor of Nursing Practice in the Doctor of Nursing Practice Program

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Abstract

Background: Each year over 300,000 older adults are hospitalized for hip fracture. The impact of the cost of hip fracture on the US health care system is estimated to be as high as $9 billion, with the typical cost of a hip fracture episode around $30,000. Formalized pathways have been developed and successfully utilized for many patient presentations, including hip fracture, in the acute setting. Although this research is important to the comprehensive care of the elderly hip fracture patient, very little research exists that outlines evidence-based best-practice for patients in the post-acute recovery period.

Purpose: The primary aim of this project was to develop an evidence-based, comprehensive, coordinated, and interprofessional care pathway for hip fracture patients in the acute rehabilitation setting to improve the percentage of patients discharging to community settings by 20% from current baseline by the end of the pilot period.

Methods: The design of this project was an observational cohort study. Descriptive statistics will be used to compare intervention groups to controls, including frequencies and distributions.

Results: The hip fracture tool itself had inconclusive results, the impacts of the effects on team work and enhanced coordination of the care team was realized through reducing institutionalized days for hip fracture patients in acute rehabilitation.

Keywords: hip fracture, subacute care, clinical pathway, quality improvement

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Problem Description

Hip fracture is a common event in older adults that results in significant morbidity and mortality, reduced quality of life, and substantial costs to the healthcare system. Alternative models of care have developed recently as a result of the ever-increasing number of patients expected to suffer the consequences from a fractured hip. Financial implications to healthcare facilities have also changed as the result of changing reimbursements. These new models seek to ensure that patient's care is optimized across the continuum to reduce cost, improve quality, and improve patient satisfaction. A major part of this complex equation involves after-care for patient's following an acute care hospital stay. The post-acute stage of the continuum can represent a large portion of the episodic cost, and is a significant contributing factor to patient's functional recovery. In the United States, approximately 90% of patients discharge to an institutional setting following a hip fracture, such as skilled nursing facilities (SNFs), or inpatient rehabilitation facilities (IRFs) (Leland et. al, 2015).

Unfortunately, these patients are particularly vulnerable to the hazards of institutionalization such as falls with injury and pressure ulcers; and morbidity and mortality have a negative relationship to the number of days a patient is unable to safely transition to the home setting. Also not surprising is the relationship between patient's level of function at discharge and likelihood for an institutional discharge. Institutionalization of frail elders greatly reduces quality of life, increases the risk for complications, and increases healthcare system costs (Carpintero et al., 2014; Leal et al., 2016).

Performance data at a local rehabilitation facility show that discharges to community settings following a hip fracture admission have been less than desirable. For fiscal year (FY) 2016, this IRF discharged 65% of hip fracture patients to community settings, versus 69% and 75% for regional and national case-adjusted benchmarks, respectively. This equates to more days in institutional settings,

higher episodic cost of care, and increased risk of potential harm. Furthermore, another significant metric that determines the effects of therapy intervention on a patient's level of functioning is the FIM® rating, or Functional Independence Measure. For internal hip fracture patients, the FIM® motor change for FY 2016 was 24.0 versus regional and national case-adjusted benchmarks of 27.7 and 28.5, respectively.

The intent of this quality improvement project is to develop a coordinated and interprofessional care pathway for hip fracture patients in the inpatient rehabilitation setting, to improve functional outcomes and thus reduce discharges to non-community settings.

Available Knowledge

In order to fully appreciate the current state of research on this issue, a comprehensive search of the literature was conducted. Using the MESH terms "hip fracture" and "subacute care", a broad net was cast in order to retrieve all relevant studies. The search as limited to English language, older adults age 65+, human subjects and timeframe of 2000-2017. The following databases were electronically searched and results retrieved are included: MEDLINE (12), CINAHL (17), Cochrane Register of Randomized Control Trials (3), Cochrane Systematic Review (0), Academic Search Premier (5) and PubMED (22). Citation lists and grey literature were also searched to ensure comprehensiveness. After removal of duplicate articles, 33 unique articles remained. After abstract review, 8 articles were selected for full-text review. After full text review, 3 articles were excluded due to low level of evidence (1) (Chong, Savige, & Lim, 2009), or no reference to subacute care (3) (Giusti et al., 2006; Deutsch et al., 2017; Sivakumar et al., 2013). The 4 remaining articles included 1 systematic review (Beaupre et al., 2005), 1 randomized-control trial (Yea-Ing et al., 2012) and 2 quality improvement articles relevant to the design of this proposal (Krichbaum, 2007 & Gonzalez-Montalvo et al., 2010).

None of the articles were specific to inpatient rehabilitation care pathways, but several common threads appeared throughout all articles. For example, the intervention from an interdisciplinary team focused on physical functioning and medical stability had a positive effect on patient outcomes (Beaupre

et al., 2005; Yea-Ing et al., 2012; Krichbaum, 2007; Gonzalez-Montalvo et al., 2010). Yea-Ing and colleagues (2012), Beaupre and colleagues (2005) and Krichbaum (2007) also sited coordinated, standardized care delivery as positively influencing outcomes such as improvements in activities of daily living (ADLs) and instrumental ADLs, nutrition status, pain and self-reported quality of life measures, respectively. Although this research is important to the comprehensive care of the elderly hip fracture patient, very little research exists the outlines evidence-based best-practice for patients in the post-acute recovery period (Beaupre et al., 2005).

Formalized pathways have been developed and successfully utilized for many patient presentations, including hip fracture, in the acute setting. The UK's National Institute for Health Care Excellence (NICE) developed a clinical guideline for hip fracture management in 2011, and several US-based organizations have adopted its recommendations for best-practice (National Clinical Guideline Centre, 2011). Unfortunately, there is little guidance as to what should happen to the patient once they transition to post-acute care. This leaves post-acute care providers ill-equipped to employ systematic changes to care delivery that could positively impact patient outcomes.

Along with the clinical management of the patient from a medical and functional perspective, the importance of having a coordinated and interprofessional team cannot be understated. Eduardo Salas and colleagues (2004, 2006, 2009, 2013) have published several landmark studies on the importance of teamwork to drive performance, improve patient safety and increase patient satisfaction. O'Leary and colleagues (2012) synthesized the research of Salas and others into five core components of high-reliability teams: leadership, mutual performance monitoring, back-up behaviors, adaptability and team orientation. Along with these core concepts, support for effective team functioning comes from a combination of trust, shared mental models and closed-loop communication. Elements of high-performing teams will be integrated into the pathway monitoring and follow-up processes in order to facilitate collaboration across disciplines.

Rationale

Bronstein's Model of Interdisciplinary Collaboration served as the theoretical framework for this quality improvement project. Bronstein's Model uses five theoretical components essential for creating interprofessional collaboration: interdependence, newly created professional activities, flexibility, collective ownership of goals, and reflection on the process. Contextual factors such as professional roles, structural characteristics, personal characteristics and history of collaboration were also considered as influencing factors in the design and implementation of the hip fracture pathway.

Specific Aims

The primary aim of this project was to develop an evidence-based, comprehensive, coordinated, and interprofessional care pathway for hip fracture patients in the acute rehabilitation setting to improve the percentage of patients discharging to community settings by 20% from current baseline by the end of the pilot period (2/28/18). A secondary aim is to improve the functional outcomes of hip fracture patients as measured by the Functional Independence Measure (FIM®) to regional weighted benchmarks by the end of the pilot period.

The purpose of this report is to outline the development for building the pathway, the workflow redesign that occurred as a result of the implementation, and the outcomes from the pilot stage. Analysis of results, interpretation of the interventions impact on outcomes, and implications for expansion and sustainability will be addressed.

Context

Setting

The organization is a for-profit, physician-owned rehabilitation network consisting of 4 Inpatient Rehabilitation Facilities (IRFs), outpatient services and a home care agency servicing New Hampshire and Massachusetts. The primary site for this intervention is a 33-bed unit located New Hampshire. The

unit is directed by a hospitalist, who manages the medical care of the patient, and a physiatrist, who manages the functional oversight of the patient. Every patient is followed daily by both the physiatrist and the hospitalist. Every patient is required to receive the services of at least two of the three therapy disciplines: physical therapy, occupational therapy, or speech therapy. Therapy is provided at least 15 hours per week, with most patient's receiving 3 hours per day, 5 days per week. Patients also receive nursing care from rehabilitation-certified nursing staff at a ratio of at most 7:1, depending on the patients' medical complexity. Unit leadership includes nurse manager, therapy team leaders and case management supervisor.

Staff Characteristics

The interdisciplinary team on the units consists of physiatrists, hospitalists, nurses, physical therapists, occupational therapists, speech and language therapists, nursing assistants, unit secretaries, and case managers.

In a recent Agency of Healthcare Research and Quality (AHRQ) Culture of Safety Survey, the inpatient unit involved in this project indicated that teamwork within the unit was noted as an area for improvement; specifically, in the areas of team mates supporting one another, working together to get tasks completed, and helping out teammates when the unit gets busy. It is for this reason that interdisciplinary involvement throughout the entire pathway development, rollout and measurement process was crucial to staff buy-in to enhance opportunities for success.

Patient Characteristics

Based upon historical admissions for hip fracture diagnosis during the implementation period for the previous year, there will be estimated 25-50 patients admitted to the Inpatient Rehabilitation Hospital that would be appropriate for the pathway.

Table 1:

Hip Fracture Patient Characteristics by Discharge Destination

			Discharge Setting		
	Characteristic	**Total**	**Institution (SNF)**	**Community (Home or Home with Services)**	***P* value**
	n	266	82	156	
	Age (years)	79.5 (9.83)	82.6 (1.1)	78.2 (0.8)	0.0039
	Gender %				
	Male	39	40.2	36.5	
	Female	61	59.8	63.5	
	Race/ Ethnicity, %				
	Hispanic	0.38	0	0.64	
	Asian	0.76	1.22	0.64	
	White	98.9	97.56	98.72	
	Marital Status, %				0.3853[1]
	Married	40.1	36.7	42.1	
	Not Married	59.9	63.3	57.9	
	Impairment, %				0.3473[1]
	Unilateral	99.6	98.8	100	
	Bilateral	0.4	1.22	0	
	Comorbidity (sum)	19.8 (5.4)	20.9 (5.1)	18.9 (5.62)	0.0231
	Length of Stay (days)	11.5 (4.2)	13.2 (3.5)	11.42 (3.62)	0.002
Admit	FIM cognitive	22.4 (5.8)	19.6 (5.3)	24.3 (5.0)	<0.0001
Admit	FIM Motor	29.3 (10)	23.8 (6.0)	32.9 (10.3)	<0.0001
Admit	FIM Total	53.6 (14.8)	44.8 (9.4)	59.3 (14.1)	<0.0001
D/C	FIM cognitive	25.3 (5.64)	23 (5.1)	27.3 (4.6)	<0.0001
D/C	FIM Motor	48.1 (17.4)	36.4 (9.9)	57.2 (14.8)	<0.0001
D/C	FIM Total	76.9 (22.8)	61.8 (13.2)	88.8 (19.2)	<0.0001
	FIM Change	22.5 (16.4)	16.7 (9.5)	29.5 (13.8)	<0.0001
	Lives Alone (Y/N), %				0.3943[1]
	Yes	62.5	60.6	63.8	
	No	37.5	39.4	36.2	
	Pre-Hospital Setting, %				0.00054[1]
	Home	93.2	86.6	97.4	
	Home w/ Services	6.8	13.4	2.6	

Values reported as mean (SD) unless otherwise noted

P values obtained from oneway ANOVA or Fisher's Exact test

[1]Fishers Exact Test

Table 1 provides an analysis of the patient characteristics from calendar year 2016 that were admitted to the rehabilitation hospital for hip fracture. In regard to discharge destination (home versus skilled nursing facility) age, sum of comorbidities, length of stay, and functional and cognitive outcomes (as measured by the FIM®) all appear to be statistically significant factors. Based on this information, design of the pathway will focus on modifiable risk factors that can improve a patient's likelihood for a home discharge- FIM® scores and length of stay.

Interventions:

The interventions for this project consisted of:

- Convening an interdisciplinary team dedicated to improving care for hip fracture patients as described in detail below
- Designing care interventions for hip fracture patients that include decision support for nursing, therapists, case management and physicians
- Educating staff on the new pathway which included in-servicing for 45 licensed clinicians from nursing, physical, occupational and speech therapy. Physician education was conducted on a 1:1 basis.
- Designing data collection tool to track patients throughout their rehabilitation stay, to include functional goals, medical stability and discharge planning milestones
- Measuring success of the program through patient-level review, weekly data reviews and progress towards the rehabilitation goals
- Disseminate pathway to other sites within the Network, if appropriate

Pathway Development

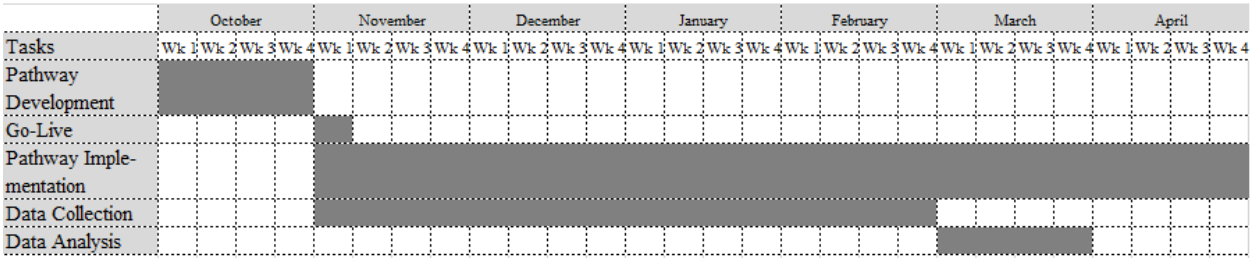
An interprofessional team was created under the leadership of this author to design a post-acute care pathway for hip fracture patients. The team consisted of the following members:

Team Member	Role/ Responsibility
Doctor of Nursing Practice Student	Team leader, oversight for the pathway, project manager, tracking outcomes
Chief Medical Officer	Executive oversight for medical staff
Chief Nursing Officer	Executive oversight for nursing staff
Physician Champion (Physiatrist)	Direct physician patient care for all pathway patients
Director of Inpatient Therapy	Oversight of all therapy disciplines, accountable for any changes in documentation or practice change at the bedside
Nursing Manager	Direct oversight for nursing care on the unit
Director of Education	Design and implement comprehensive training plan for staff
Inpatient Physical Therapy Team Leader	Direct oversight for physical therapy care on the unit
Inpatient Occupational Therapy Team Leader	Direct oversight for occupational therapy care on the unit
Home Care Physical Therapist	Post-discharge coordination, conduct home visits as appropriate, ensure safe transition to home, monitor progress
Director of Outpatient Therapy Clinical Operations	Monitor progress for patients requiring outpatient services
Case Manager	Discharge planning activities, communication with insurers, utilization review

The timeline for the pathway development and implementation can be found in Figure 1.

Figure 1:

Hip Fracture Project Timeline



The team met weekly to develop the pathway, and progress was reported to the executive oversight team weekly. Each discipline was responsible for reviewing literature for best practice for the treatment of hip fracture and making recommendations based on their expertise. Interventions were broken down by discipline into daily tasks (monitoring), rehab days 1-3, rehab days 4-6 and rehab days 7-10+. Each segment of the pathway is intended to address the following goals:

Daily Tasks	Rehab Days 1-3	Rehab Days 4-6	Rehab Days 7-10+
• Encourage progression of function • Prevention of harm • Management of ongoing medical conditions	• Mitigate patient risks and deficits related to hospitalization • Promote mobility and pain management • Assess and prevent cognitive dysfunction	• Address factors related to the cause of the trauma • Maintain mobility and pain control • Prevention of future harm • Engagement of patient and family in the plan of care	• Prepare the patient/ family for discharge • Ensure post-discharge wrap-around services in place • Maintain safe care transition using evidence-based best practice

The pathway is formatted in such a way that each discipline is accountable to perform and document their interventions for each segment of the pathway, although segments of the pathway are

intentionally designed to overlap in an effort to facilitate interprofessional collaboration. As previously mentioned, daily huddles and Team meetings with the care team were used as a venue to discuss any deviations from the pathway and review and troubleshoot any barriers to a home discharge. Representation from each discipline is expected to attend daily huddles and Team meetings. A copy of the pathway that was developed can be found in Appendix A.

Not only was it critical for the implementation team to develop the interventions needed for an effective pathway, the team had to rethink the formatting to make the pathway functional for the disciplines that are expected to follow it. For this reason, the pathway was broken down into one page checklists for each discipline for each segment of the pathway. The "functional pathway" can also be found in Appendix B. The "functional pathway" was printed on bright paper, and was not a part of the patient's permanent medical record. Daily tasks are indicated by bulleted items in the left column, the right column is reserved for segment-specific (time-sensitive) tasks that must be completed within the specified rehab day(s).

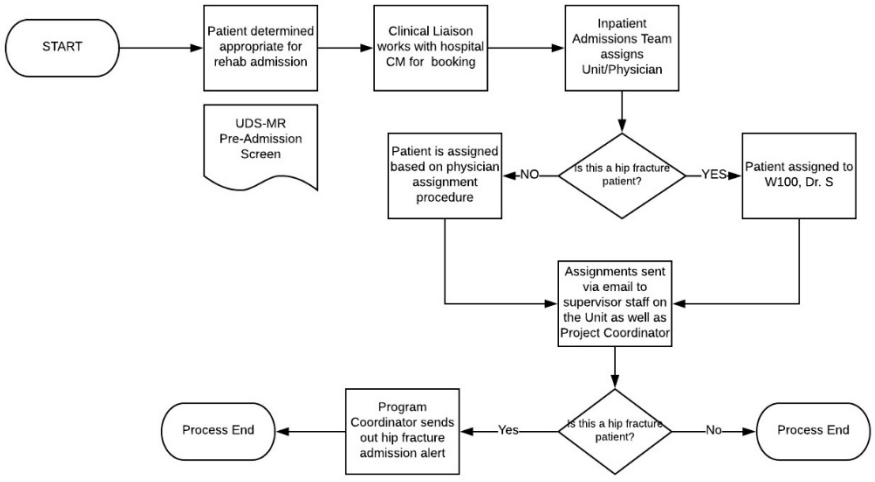
A challenge to the implementation of this pathway was the lack of a standardized location for interprofessional documentation. The intent of this project is to facilitate that interprofessional and cross-continuum collaboration, so the implementation team made the decision to house the pathway documentation in a centralized location, and to create a central patient "warehouse" for clinical and outcomes data, so that it is available for the entire care team, regardless of physical location. Mandatory in-service trainings occurred over the course of three days, on all shifts. 45 direct care clinical staff attended these trainings.

Patient Identification

A new workflow for identifying appropriate patients had to be created. The process for identifying patients appropriate for the pathway is outlined below:

Figure 2:

Patient Identification Algorithm



The process for patient identification starts prior to admission when the field liaison receives a referral from the acute care hospital. The field liaison reviews the patients chart to determine if the patient needs criteria for inpatient rehabilitation level of care (i.e. must meet medical necessity for 24 hour physician oversight, and must be reasonably able to participate in and benefit from 15 hours of therapy per week). Once a patient was determined to be eligible for inpatient rehabilitation, the in-house admissions team assigned the patient to a unit and a physician, based on the clinical presentation of the patient and the specialty of the physician. For this pilot, all hip fractures were admitted to one unit, under the service of the physiatrist physician champion on the project team. Communication of admission decisions and patient assignment are primarily via email. Once the project team leader (this author) receives a notification that a hip fracture patient is booked, an admission alert is sent to the project implementation team.

Pathway Initiation

The initiation of the pathway includes the involvement of staff nurses and therapists, the unit educator and the unit secretary. Patient charts are flagged with a sticker to broadcast to the staff that the

patient is on the pathway. The "functional pathway" and supporting assessments as part of the pathway are filed in the interprofessional documentation binder that is kept at the nurse's station.

Post-Initiation Follow-Up

Daily follow-up on the pathway is conducted by the DNP student. Prior to the implantation of the pathway, daily huddles were unstructured and shared patient goals were sporadic and varied by discipline. The intent of the pathway was to facilitate teamwork and interprofessional collaboration by providing a synchronous communication tool for goal-setting and patient progress. Daily follow-up typically includes just-in-time education, ensuring that documentation is being completed, and reviewing and troubleshooting barriers to discharge in real time. Daily review of patient progress occurs at huddles that occur on the unit with one representative from each discipline: physiatry, therapy, nursing, & case management.

Post-Discharge Follow-Up

Bi-Weekly meetings with the interprofessional pathway development team discussed patient's transition to home care, any barriers to transition from home care to outpatient therapy, and cross-continuum care planning. 90-day follow-up phone calls were conducted to assess for any need for further support in the community, or to identify any possible incidences of readmission to the acute setting.

Study of the Interventions

The design of this project was an observational cohort study. Effects of the interventions as a whole unit (i.e. effects of the pathway in its entirety, rather than effects of the individual interventions) will be studied as a cohort of enrolled patients. Effects of the pathway outcomes will be measured against historical baseline performance metrics of the same population from the previous calendar year. In order to establish that the observed outcomes were the result of the interventions, outcomes for all non-enrolled patients for the project implementation period will be compared to the enrolled hip fracture population. The data collection period (implementation period) ran from 11/1/17-2/28/18. Daily surveillance on use

of the pathway was conducted by the DNP student during huddles. Daily surveillance included evaluating for incomplete documentation, ensuring hazard prevention interventions were in place and real-time data tracking.

Measures

Functional disability was measured using the Functional Independence Measure (FIM®). The FIM® is a reliable and validated tool used by all IRF facilities to measure a patient's level of disability before and after admission to an IRF. The FIM® is scored on 13 motor tasks and 5 cognitive tasks. Motor tasks include eating, grooming, bathing, upper body dressing, lower body dressing, toileting, bladder and bowel control, transfers and locomotion. Cognitive tasks include comprehension, expression, social interaction, problem solving and memory. Each task is scored on a 7-point Likert scale with a score of 1 meaning patient is dependent on caregivers, and a 7 being patient is independent (no assist needed). Sum scores are between 18 and 126, representing the range of total dependence to total independence. Administration of the FIM® does require specialized training which is required of all clinical staff who administer the questionnaire. The FIM® takes approximately 30 minutes to complete and is a shift to shift expectation for all therapists and nurses at the organization (Linacre et. al, 1994).

For the purpose of determining a community discharge, the CMS definition of "community" was used. This includes all patients who discharged home without services (self-care), home with home health services, home with outpatient services and discharges to assisted living facilities (RTI International, 2016).

Analysis

Results will be analyzed descriptively using the JMP software. Baseline demographic data will be analyzed using discharge location as the dependent variable. Where applicable, *P* values were obtained using one-way ANOVA and Fisher's Exact test. Descriptive statistics will be used to compare intervention groups to controls, including frequencies and distributions. Sample size was too small for

hypothesis testing, but this analysis should be performed in the future using discharge location as dependent variable and functional improvement as the independent variable.

Ethical Considerations

University of New Hampshire (UNH) Internal Review Board (IRB) approval was sought, but not required after review from the Board determined this project was quality improvement and not research. IRB approval will also be sought by the organization in which the project was conducted, and was approved. Ethical considerations with this project will include protection of personal health information (PHI). Organizational policy regarding Federal HIPAA rules and regulations, NH State Law and Medicare's Conditions of Participation (NH RSA 151.21 and CFR 164.508-165.514.) will be followed as outlined in internal hospital-wide policy "Confidentiality of Patient Information, Access to Patient Health Information". Due to the nature of the project, special considerations such as HIV/AIDS status, substance abuse and mental health, sexually transmitted diseases and genetic testing results, will not be applicable. All patients under study are protected by HIPAA and authorize consent to treat on admission. All data collected as part of this project will be collected according to the standards of privacy and confidentiality as outlined in internal policy. Any transcription of data will be de-identified. No patient-identifying information shall leave the building. The risks to patients participating in this project is no different than the risks of patients receiving standard care. All electronic files of patient information will be password-protected and only accessible to the project implementation team.

Results

Table 2 includes the outcomes for hip fracture patient's pre and post implementation of the pathway. Again, the historical data was taken from the previous calendar year.

Table 2:

Hip Fracture Outcomes Pre & Post Intervention

	Measure	Historical Hip Fracture	Hip Fracture Pathway
	n	266	27
	Length of Stay (days)	11.5 (4.2)	13.1 (3.6)
Admit	FIM cognitive	22.4 (5.8)	22.1 (5.6)
Admit	FIM Motor	29.3 (10)	29.2 (9.2)
Admit	FIM Total	53.6 (14.8)	52.9 (13.4)
D/C	FIM cognitive	25.3 (5.64)	25.9 (6)
D/C	FIM Motor	48.1 (17.4)	52.5 (16.9)
D/C	FIM Total	76.9 (22.8)	81.6 (4.7)
	FIM Change (D/C-Admit)	22.5 (16.4)	28.7 (16.4)
	D/C Community (Home or Home with Services)	156 (58.6%)	21 (77.8%)
	D/C to Skilled Nursing Facility	82 (30.8%)	5 (18.5%)

The minimal variation in admission FIM® suggests that the disability level of historical cases versus current cases is similar. Improvements is discharge FIM® scores post-implementation suggest that improvements made to the functional status of the patient, or improvements in use of the FIM® tool itself resulted in this change. Also important to note is the increase in length of stay (LOS) pre and post implementation period. In order to control for increased LOS in influencing discharge FIM® scores, the

FIM® change is divided by the LOS to determine the metric of "FIM® efficiency". The FIM® efficiency scores pre and post implementation are 1.95 and 2.19, respectively. This modest increase in FIM® efficiency suggests that the results of the positive FIM® discharge scores were not the result of increasing length of stay alone. Although this modest increase in patient functional outcomes is promising, the largest change that occurred as the result of the pathway implementation is the improvements in discharge to community settings.

In order to better understand this increase in discharges to community settings, and to control for the impact of systematic practice change variation, hip fracture pathway patients were compared to all other non-pathway patients for the same implementation period.

Table 3 shows the functional and discharge location outcomes for the implementation period for patients on the pathway and patients not on the pathway.

Table 3:

Outcomes During Implementation Period

	Measure	Total	Non-Pathway Patients	Hip Fracture Pathway Patients
Admit	n	1065	1038	27
	Length of Stay (days)	12.4 (6.8)	12.4 (6.9)	13.1 (3.6)
	FIM cognitive	23.4 (6.2)	23.5 (6.2)	22.1 (5.6)
	FIM Motor	32.6 (21.1)	32.6 (12.1)	29.2 (9.2)
	FIM Total	58.2 (16.9)	58.3 (16.9)	52.9 (13.4)
D/C	FIM cognitive	27.2 (5.7)	27.2 (5.7)	25.9 (6)
	FIM Motor	54.8 (18.9)	54.9 (18.9)	52.5 (16.9)
	FIM Total	85.7 (24.3)	85.8 (0.75)	81.6 (4.7)
	FIM Change (D/C-Admit)	27.5 (15.3)	27.5 (15.2)	28.7 (16.4)
	D/C Community (Home or Home with Services)	732 (68.7%)	710 (68.4%)	21 (77.8%)
	D/C to Skilled Nursing Facility	217 (20.4%)	212 (20.4%)	5 (18.5%)

The increase in length of stay for patients on the pathway is an obvious deviation from usual care. Also important to note as well is the dramatic difference in admission FIM® scores from pathway and non-pathway patients. This suggests that pathway patients enter rehabilitation with a greater burden of care than the general population, which could in part explain the increase in length of stay. Using the same methodology to determine FIM® efficiency as a means to control for variation in length of stay, we

actually observe a mild decline in FIM® efficiency for pathway patients versus the general population of 2.20 and 2.22 respectively.

Again, we see a large variation in discharges to community settings from patients on the pathway and patients not on the pathway. Since we cannot point to functional gains or increasing length of stay as the cause for this variation, this increase in discharges to community settings must be the result of other consequences of the pathway; such as the interprofessional collaboration and enhanced discharge planning activities.

Summary

The improvement of FIM® scores and increase in discharges to community settings for historical versus current hip fracture cases is likely the result of systematic changes to clinical care delivery. The little variation in admission FIM® scores for this population suggests that the inter-rater reliability likely remained consistent and therefore could not be a probable explanation for the changes in FIM® discharge improvement in pathway patients versus historical baseline. The modest improvement in FIM® efficiency scores for the intervention group versus the historical hip fracture cases demonstrates functional improvement overall regardless of patients length of stay. When we couple that improvement with the fact that the hip fracture intervention group actually performed slightly less favorably to the usual care group during the same implementation period, we can reasonably conclude that improvements in overall function in hip fracture patients from baseline was not the result of the pathway itself, but from systematic changes to care delivery that impacted all patients.

The improvement of discharges to community settings without a resulting improvement in overall FIM® scores when the intervention group was compared to the usual care group was the most surprising finding. Since we are not able to point to FIM® improvements as a casual factor for this increase, we must conclude that those increased scores were the result, not of the pathway itself, but the

interprofessional teamwork, collaboration and enhanced discharge planning that occurred as a result of its development and implantation.

Interpretation

Although this study was able to identify sequenced activities to direct patient care, we cannot draw conclusions as to the impact of the specific interventions on patient functional achievements and long-term effects such as morbidity and mortality. In regards to the identified project aims, at this time, we cannot point to improvements in FIM® scores as an influencing factor, we can potentially infer that the hip fracture pathway had an impact on discharges to community settings, however, the small post-implementation sample size limits the ability to draw firm conclusions. A consistent theme throughout the literature suggests that an interprofessional approach to patient recovery can improve outcomes in the acute setting, and that a post-acute and interprofessional approach can maximize patient functional abilities over time. Although not formally measured, the impact of the interprofessional collaboration on discharges to community settings shows promise for future research and scalability to other diagnostic groups in the inpatient rehabilitation setting. Systems-level interventions designed to improve teamwork and interprofessional collaboration may be more beneficial and efficient than designing and monitoring disease-specific pathways that show mixed potential for improvement in outcomes. Taking into account the context of the organization under study, the design of the physician-led rehabilitation model and implementation of location-based care teams that are already in place would position the organization favorably for systems-level change in discharge planning and care transitions improvements.

Limitations

The sample size of this study is too small to determine statistical significance to other populations. This work was limited to patients in the inpatient rehabilitation setting only, although the interventions could be implemented at additional levels of care at organizations with direct daily physician and therapy oversight. Care was taken to ensure that the intervention group was compared to a control group for the

intervention period to determine if changes in FIM® scores were the result of systematic practice changes or the new pathway. Systems changes clearly had an impact on FIM® outcomes, although it is unclear how those practice change interventions affected hip fracture patients specifically, and exactly which interventions had the most impact on the FIM® scores. This project also assumed scoring on the FIM® tool itself was consistent across disciplines. Variations in the interrater reliability on FIM® scoring by discipline or by individual user may have had an impact on the findings, and should be considered a limitation of this project.

Conclusion

Although the hip fracture tool itself had inconclusive results, the impacts of the effects on team work and enhanced coordination of the care team was realized through reducing institutionalized days for hip fracture patients in acute rehabilitation. Interventions to improve teamwork and interprofessional collaboration can be beneficial in any patient care setting. Care should be taken to directly link specific interventions to care outcomes. Practice implications for the care of the traumatic hip fracture patient in the rehabilitation setting should include assessing and improving interprofessional collaboration of the rehabilitation team. Designing a pathway may assist in the development of the collaborative process, but the effects on patient outcomes remains unclear. Efforts to sustain this project include the development of a hip fracture pathway champion to serve as the team leader, similar to role of the DNP student in this pilot. Efforts should be made to reduce the amount of manual data tracking and daily monitoring of incomplete entries in documentation through use of electronic documentation systems, if available.

References

Beaupre L., Jones C., Saunders L., Johnston D., Buckingham J., Majumdar S. (2005) Best Practices for Elderly Hip Fracture Patients: A Systematic Overview of the Evidence. *JGIM: Journal Of General Internal Medicine,* 20(11):1019-1025.

Bentler, S, Liu, L., Obrizan, M., Cook, E., Wright, K., Geweke, J., Chrischilles, E., Pavlik, C., Wallace, R, Ohsfeldt, R., Jones, M., Rosenthal, G., & Wolinsky, F. (2009) The Aftermath of Hip Fracture: Discharge Placement, Functional Status Change, and Mortality. *American Journal of Epidemiology*, 170:10. https://doi.org/10.1093/aje/kwp266

Bowers, C. A., Salas, E., & Jentsch, F. (2006). Creating high-tech teams: practical guidance on work performance and technology. Washington, DC: *American Psychological Association*.

Bronstein, L. (2003). A Model for Interdisciplinary Collaboration. *Social Work,* 48(3): 297-306.

Cameron, I., Crotty, M., Currie, C., Finnegan, T., Gillespie, L., Gillespie, W., Handoll, H.; Kurrle, S., Madhok, R., Murray, G., Quinn, K. & Torgerson, D. (2000). Geriatric rehabilitation following fractures in older people: a systematic review. *Health Technology Assessment*, 4(37), 1-105

Carpintero, P., Caeiro, J. R., Carpintero, R., Morales, A., Silva, S., & Mesa, M. (2014). Complications of hip fractures: A review. *World Journal of Orthopedics*, 5(4), 402–411. http://doi.org/10.5312/wjo.v5.i4.402

Chong, C., Savige, J., & Lim, W. (2009). Orthopaedic-geriatric models of care and their effectiveness. Australasian Journal on Ageing, 28(4), 171-176. doi:10.1111/j.1741-6612.2009.00368.x

Chudyk, A., Jutai, J., Petrella, R., & Speechley, M. (2009). Systematic review of hip fracture

rehabilitation practices in the elderly. *Archives Of Physical Medicine & Rehabilitation*, 90(2), 246-262. doi:10.1016/j.apmr.2008.06.036

Deutsch, A., Granger, C., Fiedler, R., DeJong, G., Kane, R., Ottenbacher, K., & ... Trevisan, M. (2005). Outcomes and reimbursement of inpatient rehabilitation facilities and subacute rehabilitation programs for Medicare beneficiaries with hip fracture. Medical Care, 43(9), 892-901.

Giusti, A., Barone, A., Oliveri, M., Pizzonia, M., Razzano, M., Palummeri, E., & Pioli, G. (2006). An analysis of the feasibility of home rehabilitation among elderly people with proximal femoral fractures. Archives Of Physical Medicine & Rehabilitation, 87(6), 826-831.

González-Montalvo, J., Alarcón, T., Gil-Garay, E., Gotor, P., Martín-Vega, A., & Mauleón, J. (2010). The orthogeriatric unit for acute patients: a new model of care that improves efficiency in the management of patients with hip fracture. Hip International, 20(2), 229-235.

Krichbaum, K. (2007). GAPN postacute care coordination improves hip fracture outcomes...Gerontologic Advance Practice Nurse. Western Journal Of Nursing Research, 29(5), 523-544.

Leal, J., Gray, A. M., Prieto-Alhambra, D., Arden, N. K., Cooper, C., Javaid, M.; Judge, A. and The REFReSH study group. (2016). Impact of hip fracture on hospital care costs: a population-based study. Osteoporosis International, 27, 549–558. http://doi.org/10.1007/s00198-015-3277-9

Leland, N., Gozalo, P., Christian, T., Bynum, J., Mor, V., Wetle, T. F., & Teno, J. (2015). An examination of the first 30 days after patients are discharged to the community from hip fracture post-acute care. Medical Care, 53(10), 879–887. http://doi.org/10.1097/MLR.0000000000000419

Linacre, J., Heinemann, A., Wright, B., Granger, C., & Hamilton, B. (1994). The structure and stability of the Functional Independence Measure. Archives Of Physical Medicine & Rehabilitation, 75(2), 127-132.

Lynch, G., Tower, M., & Venturato, L. (2015). Identifying outcomes associated with co-managed care models for patients who have sustained a hip fracture: an integrative literature review. *International Journal of Orthopaedic and Trauma Nursing*, 19(3), 140-154. doi:10.1016/j.ijotn.2014.07.002.

National Clinical Guideline Centre (2011). "The Management of Hip Fracture in Older Adults". London: Nation Clinical Guideline Centre. Available from www.ncgc.ac.uk.

Neuman, M., Archan, S., Karlawish, J., Schwartz, J., & Fleisher, L. (2009). The relationship between short-term mortality and quality of care for hip fracture: a meta-analysis of clinical pathways for hip fracture. *Journal of The American Geriatrics Society*, 57(11), 2046-2054. doi:10.1111/j.1532-5415.2009.02492.x

O'Leary, K. J., Sehgal, N. L., Terrell, G., & Williams, M. V. (2012). Interdisciplinary teamwork in hospitals: A review and practical recommendations for improvement. *Journal of Hospital Medicine*, 7(1), 48-54. doi:10.1002/jhm.970

RTI International. (2016). "Technical Expert Panel Summary Report: Development of a Discharge to Community Quality Measure for Skilled Nursing Facilities (SNFs), Inpatient Rehabilitation Facilities (IRFs), Long-Term Care Hospitals (LTCHs), and Home Health Agencies (HHAs). Prepared for the Centers for Medicare and Medicaid. Retrieved from: https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Post-Acute-Care-Quality-Initiatives/Downloads/Technical-Expert-Panel_-Discharge-to-Community-Quality-Measure.pdf

Salas, E., & Fiore, S. M. (2004). *Team cognition : understanding the factors that drive process and performance*. Washington, DC : American Psychological Association.

Salas, E., & Frush, K. (2013). *Improving patient safety through teamwork and team training*. New York : Oxford University Press.

Salas, E., Goodwin, G. F., & Burke, C. S. (2009). *Team effectiveness in complex organizations: cross-disciplinary perspectives and approaches*. New York : Routledge.

Sivakumar, B. S., McDermott, L. M., Bell, J. J., Pulle, C. R., Jayamaha, S., & Ottley, M. C. (2013). Dedicated hip fracture service: implementing a novel model of care. *ANZ Journal of Surgery*, 83(7-8), 559-563. doi:10.1111/j.1445-2197.2012.06201.x

Yea-Ing L., S., Jersey, L., Ming-Yueh, T., Hsiao-Juan, L., Chi-Chuan, W., Huey-Shinn, C., & Ching-Tzu, Y. (2013). Comprehensive and subacute care interventions improve health-related quality of life for older patients after surgery for hip fracture: A randomized controlled trial. *International Journal of Nursing Studies*, 50(8), 1013-1024. doi:10.1016/j.ijnurstu.2012.11.020

Appendix A

Traumatic Hip Fracture Rehabilitation Clinical Pathway

Interventions and care pathway to be supported by physician orders

	Daily	Rehab Day 1-3	Rehab Day 4-6	Rehab Day 7-10
OBJECTIVES	• Progression of function • Prevention of harm • Management of ongoing medical conditions	• Mitigate patient risks and deficits related to hospitalization • Promote mobility and pain management • Assess and prevent cognitive dysfunction	• Address factors related to the cause of the trauma • Maintain mobility and pain control • Prevention of future harm • Engagement of patient and family in plan of care	• Prepare patient/family for discharge • Ensure post-discharge wrap-around services in place • Maintain safe care transition using evidence-based best-practice
Discipline				
Physician	Assessment and preventions of hazards of hospitalization, including: VTE prophylaxis, multi-modal pain management, bowel regimen, restoration of sleep/wake cycles Assessment and prevention of cognitive decline (use of CAM) Minimize use of opioids for pain control	Consider interdisciplinary consultations as appropriate, including: Vision clinic, therapeutic recreation, Speech therapy, Pharmacy, Vestibular, Dietary, Psychology, etc. Monitor lab values, CBC, BMP	Continuation of daily monitoring and address any barriers to progress as identified by the interdisciplinary team	Complete medication reconciliation prior to discharge Complete required paperwork to transition patient to the next level of care Refer patients to appropriate outpatient services (i.e. physiatry follow-up within 30 days, outpatient therapy, pulmonary rehab & cardiac rehab, if appropriate) If patient is discharging to SNF, ensure all appropriate controlled substance prescriptions are included to minimize disruption in medication delivery times
Nursing	Assessment and prevention of cognitive dysfunction (i.e. delirium) through screening and prevention measures Encourage mobility by ensure patient is out of bed for meals and transfer-toileting Ensure adequate intake through monitoring of I&O and encouraging PO fluids, as appropriate Restoration of elimination regularity through frequent bowel/bladder monitoring Continuous monitoring of patient self-reported pain and frequent assessment of treatment effectiveness with overall goal of reducing utilization of opioid pain medication Continuous monitoring of co-morbid medical conditions Efforts to minimize hazards of hospitalization such as prevention of PNA, VTE, falls, and pressure ulcers through use of screening tools and evidence-based interventions			Ensure satisfactory patient/family "teach back" for all education materials Ensure transition to next level of care is supported by best practice interventions (i.e. warm hand-off, thorough medication reconciliation)
Physical Therapy	Ensure pain control with initiation of ice and assessment of pain pre and post therapy Encourage patient pain self-report/management Prevention of cognitive dysfunction through collaboration with nursing on delirium prevention measures Ensure appropriate VTE prophylaxis	Establish initial home exercise program (HEP) including patient education and documentation tools for self-management Balance and coordination activities, as appropriate Assess patient for ability to transfer safely with nursing/support staff especially as it relates to toileting Education on WB restrictions, fall safety	Establish group therapy if patient unable to maintain consistency with HEP Implement full HEP program including instructions on completion of tracking grid Encourage family at the bedside to observe and participate in therapeutic activities	Gait training on uneven surfaces Completion of home visit, if determined to be beneficial Vehicle transfer training Don/Doff compression stockings Demonstration of HEP activities for discharge
			Progress therapeutic activities to include: stairs, balance and coordination, and progression of weight bearing Determine needs for assistive devices for discharge and plan for delivery	
Occupational Therapy	Prevention of cognitive dysfunction through collaboration with nursing on delirium prevention measures and completion of evidence-based screening tools Education on fall safety: patient/family Assess for hazards of hospitalization including screening and prevention of pressure ulcers Continuous monitoring of patient self-reported pain and frequent assessment of treatment effectiveness	Encourage mobility by ensure patient is out of bed for meals, and evaluation of toileting with least assistive device (i.e. commode) Assess patient for baseline assistance with activities of daily living (ADL), including shower-level Establish initial home exercise program (HEP) including upper extremity mobility and tools for self-management Address lower-extremity dressing with assistive device Balance retraining exercises	Determine home accessibility barriers through collaboration with the patient/family and schedule home visit, if appropriate Ensure patient is ambulating to toilet with all disciplines Establish group therapy if patient unable to maintain consistency with HEP Address lower extremity dressing with assistive device Balance retraining exercises	Demonstration of HEP activities for discharge Facilitate patient/family teaching sessions for discharge planning and safety Address home accessibility barriers
			Promote standing ALDs, if patient is at sink level Determine needs for assistive devices for discharge and plan for delivery	
Case Management		Assess current patient supports in the community including outside agencies, family supports, and other relevant providers (i.e. behavioral health) Facilitate family/caregiver presence at the bedside Request all legal documentation regarding patient Directives, Powers of Attorney, and working insurance applications	Assess current status of legal documentation and plan for completion Assess for discharge placement and begin family teaching (home care, SNF, AL, etc.) Ensure OT/PT assistive device recommendations are coordinated with patient/family Assess for food security at discharge and plan to address Assess for transportation needs at discharge and plan to address	Ensure alternative discharge plan in place for patients going home Plan for post-transition case management (i.e. follow-up phone calls, PCP appointments scheduled, transportation planning, medication pick-up, OP referral appointments made) Consider team discharge with therapy and pharmacy for high-risk patients

Appendix B

HIP FRACTURE PATHWAY- DAYS 1-3 Admit Date: _____ Day 1: _____ Day 2: _____ Day 3: _____

			Comments
Physician	☐ If pain level is consistently >4, or if pain is interfering with therapy consider scheduled opioid at lowest dose ☐ Consider supplementation of Calcium and Vitamin D as appropriate ☐ Consider lab profile to asses CBC and Chem-7 post-admission ☐ Address VTE prophylaxis ☐ Assess bowel regimen, ensure medications are scheduled unless contraindicated ☐ Minimize use of opioid pain medications unless pain is interfering with therapy ☐ Order ice 5x/day and PRN ☐ Consider scheduled Acetaminophen (if not contraindicated) ☐ Consider Lidoderm patch ☐ Consider Celebrex, if indicated to minimize opioid use especially in patients at risk for falls	☐ Consider Melatonin 3 mg at HS ☐ Implement delirium screening protocol ☐ Consider Vision/Vestibular to assess cause of initial fall or injury ☐ Consider pharmacy in patient on >10 medications, or medication that increases risk for falls or adverse drug reactions ☐ Consider Speech therapy evaluation for cognitive assessment or MoCA screening < 26 ☐ Consider Dietary for nutritional evaluation ☐ If psych history, consider Behavioral Health consultation ☐ Consider Supportive Care for pain management	
Nursing	• *Delirium prevention interventions* • *OOB for meals* • *No bedpans/ urinals* • *Encourage use of IS* • *Skin Assessment QD* • *Assess pain logs for effectiveness before/after therapy* • *I & O* • *Monitor bowels* • *Notify physician if pain >4, x2*	☐ CAM Assessment daily; if +, then Q shift, notify MD of any change in mental status ☐ Assess for foley removal ☐ PVRs x1- initiate protocol if + ☐ Initiate Hip Fracture education ☐ Orthostatic vital signs X 1 RN initials: _____ Date: _____	
PT	• *Address toileting (no bedpans/ urinals)* • *Fall safety education* • *OOB for meals* • *Encourage patient pain self-management* • *Venodyne boots in use* • *Assess for TEDS when OOB as appropriate* • *Incentive spirometry in use*	☐ Establish initial HEP- glute sets, quad sets, ankle pumps ☐ Establish/ educate on HEP tracking grid ☐ Balance and coordination activities ☐ Icing if appropriate ☐ Assess for transfers w/ nursing ☐ Effectiveness of multi-modal pain control ☐ Education on WB restrictions/ precautions ☐ Admit T.U.G & Functional Reach PT Initials _____ Date: _____	
OT	• *Address toileting (no bedpans/ urinals)* • *Fall safety education* • *OOB for meals* • *Daily skin assessment*	☐ MoCA Assessment (day 1) ☐ Assess need for commode if necessary (day 1) ☐ Shower level ADL assessment ☐ Establish HEP for upper extremities ☐ Establish VHI Tracking Grid ☐ Address lower extremity dressing w/ AE ☐ Balance retraining exercises ☐ Effectiveness of multi-modal pain control OT Initials: _____ Date: _____	
CM	☐ Access current community supports ☐ Identify comm. caregiver- i.e. ESMV ☐ Schedule caregiver observation ☐ Identify community MH provider, if applicable	☐ Request Advanced Directives ☐ Request DPOA paperwork if available ☐ If appropriate, start Medicaid application process CM Initials: _____ Date: _____	

Comments:

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Physiatrist: _____ Hospitalist: _____

Primary OT: _____ Primary PT: _____

Case Manager: _____ RN: _____

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PATIENT STICKER

HIP FRACTURE PATHWAY- DAYS 4-6 Day 4: _____ Day 5: _____ Day 6: _____

			Comments
Physician	• *If pain level is consistently >4, or if pain is interfering with therapy consider scheduled opioid at lowest dose* • *Assess bowel regimen, ensure medications are scheduled unless contraindicated* • *Minimize use of opioid pain medications unless pain is interfering with therapy*		
Nursing	• *Delirium prevention interventions* • *OOB for meals* • *No bedpans/ urinals* • *Encourage use of IS* • *Skin Assessment QD* • *Hip Fracture education* • *I & O* • *Monitor bowels* • *Assess for foley removal* • *PVRs x1- initiate protocol if +* • *Notify physician if pain >4, x2*	☐ **CAM Assessment daily; if +, then Q shift, notify MD of any change in mental status** ☐ **Assess pain logs for effectiveness before/after therapy** RN Initials: _____ Date: _____	
PT	• *Address toileting (no bedpans/ urinals)* • *Fall safety education* • *OOB for meals* • *Encourage patient pain self-management* • *Venodyne boots in use* • *Incentive spirometry in use* • *Icing if appropriate* • *Education on WB restrictions* • *Assess for TEDS when OOB as appropriate*	☐ **Assess initial HEP flowsheet- consider group format if patient is inconsistent** ☐ **Implement full HEP program** ☐ **Implement full HEP flowsheet and assess daily** ☐ **Family observation to determine d/c needs** ☐ **Determine discharge DME needs** ☐ **Stair negotiation** ☐ **Balance and coordination activities** ☐ **Progress WB activities** ☐ **Assess for transfers w/ nursing** ☐ **Effectiveness of multi-modal pain control** PT Initials: _____ Date: _____	
OT	• *Address toileting (no bedpans/ urinals)* • *Fall safety education* • *OOB for meals* • *Effectiveness of multi-modal pain control* • *Perform upper extremity exercise program independently* • *Daily skin assessment*	☐ **Determine home accessibility barriers (day 4)** ☐ **Ensure ambulate to toilet w/ all disciplines** ☐ **Assess HEP flowsheet- consider group format if patient is inconsistent** ☐ **Family teaching sessions** ☐ **Determine discharge DME needs** ☐ **Promote standing for ADL if at sink level** ☐ **Address lower extremity dressing w/ AE** ☐ **Balance retraining exercises** OT Initials: _____ Date: _____	
CM	☐ **Begin DPOA paperwork if not already in place** ☐ **Assess for discharge placement and begin family teaching** ☐ **Work with PT/OT on DME needs- ensure DME will be in place prior to d/c** CM Initials: _____ Date: _____	☐ **Begin discussion of discharge with NRHHC** ☐ **Assess food security at discharge- set-up MOW if possible** ☐ **Determine transportation plan- begin PT-1 form if necessary** ☐ **Advocate for discharge M-F** ☐ **Assess for SNF/AL needs if pt unlikely to go home**	

Comments:

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Physiatrist: _____ Hospitalist: _____

Primary OT: _____ Primary PT: _____

Case Manager: _____ RN: _____

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PATIENT STICKER

HIP FRACTURE PATHWAY- DAYS 7-10 Day 7: _____ Day 8: _____ Day 9: _____ Day 10: _____

			Comments
Physician	☐ **Med Rec day before discharge- please notify nursing, pharmacy and CM** ☐ **Complete F2F, Pg 1 to be completed by CM (assess for nursing needs vs. PT/OT only)**	☐ **Refer patients for 30-day follow-up physiatry appt** ☐ **Refer to OP pulmonary or cardiac rehab, if appropriate** ☐ **If going SNF, ensure all controlled scripts are in the chart**	
Nursing	• *Delirium prevention interventions* • *OOB for meals* • *No bedpans/ urinals* • *Encourage use of IS* • *Skin Assessment QD* • *Hip Fracture education* • *Assess pain logs for effectiveness before/after therapy* • *I & O* • *Monitor bowels* • *Notify physician if pain >4, x2*	☐ **CAM Assessment daily; if +, then Q shift, notify MD of any change in mental status** ☐ **Complete teaching record, ensure patient has all d/c paperwork** ☐ **Warm-hand off at discharge** ☐ **If going SNF, ensure med rec and scripts are faxed 1 day prior to d/c** RN Initials: _____ Date: _____	
PT	• *Address toileting (no bedpans/ urinals)* • *Fall safety education* • *OOB for meals* • *Effectiveness of multi-modal pain control* • *Encourage patient pain self-management* • *Venodyne boots in use* • *Incentive spirometry in use* • *Icing if appropriate* • *Education on WB restrictions* • *Assess for transfers w/ nursing* • *Assess for TEDS when OOB as appropriate* • *Continue to assess full HEP flowsheet*	☐ **Stair negotiation** ☐ **Balance and coordination activities** ☐ **Progress WB activities** ☐ **Gait training on uneven surfaces** ☐ **Home visit, if applicable** ☐ **Car transfer training** ☐ **Schedule for falls safety class** ☐ **Assess patients ability to self-manage pain** ☐ **Don/Doff compression stocking** ☐ **Finalize DME recommendations** ☐ **Patient education on next level of care** ☐ **Demonstrate HEP activities for discharge** ☐ **Discharge T.U.G & Functional Reach** PT Initials: _____ Date: _____	
OT	• *Address toileting (no bedpans/ urinals)* • *Fall safety education* • *OOB for meals* • *Effectiveness of multi-modal pain control* • *Perform upper extremity exercise program independently* • *Address lower extremity dressing w/ AE* • *Balance retraining exercises* • *Daily skin assessment*	☐ **Address home management tasks** ☐ **Finalize DME recommendations** ☐ **Address home accessibility barriers** ☐ **Promote standing for ADL if at sink level** ☐ **Assess HEP flowsheet- patient must effectively demonstrate at discharge** ☐ **Family teaching sessions** OT Initials: _____ Date: _____	
CM	☐ **SNF paperwork in Curaspan for alternative D/C plan for pt going home** ☐ **Referral to NRHHC** ☐ **Add patient to Case Aid F/U calls list** ☐ **Ensure PCP f/u apt was made** ☐ **Ensure POLST/MOLST to next LOC**	☐ **Assess Pg. 1 for nursing needs, if not required- PT/OT only** ☐ **If going OP- ensure apt is made prior to D/C** ☐ **Finalize transportation plan** ☐ **Work with nursing/pharmacy to ensure patient has plan to pick-up medications** ☐ **For high risk pts, consider team discharge w/ nursing and pharmacy** CM Initials: _____ Date: _____	

Comments:

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Physiatrist: _____ Hospitalist: _____

Primary OT: _____ Primary PT: _____

Case Manager: _____ RN: _____

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