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Development of a Pre-admission Screening Checklist to Minimize Acute Discharges from an Inpatient Rehabilitation Facility: A Quality Improvement Initiative

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ABSTRACT

Introduction: The aim of this study is twofold. Firstly, it attempts to examine the causes of the patient discharge from an inpatient rehabilitation facility (IRF) to an acute care hospital. Secondly, it is intended to develop a Pre-admission Screening Checklist (PSC) and examine its utility in minimizing the acute discharges to improve the care quality.

Materials and Methods: A retrospective chart review was completed, examining the data from the patients' medical charts admitted to an inner-city IRF over a 6-month period. A PSC was developed and implemented as a part of admission record review prior to deciding on the patient admission to the IRF. The PSC included information relevant to the patient's medical condition, rehabilitation potential, and the risk of acute discharge, which was completed over a 4-month period.

Results: According to the results, the rate of acute discharge in the IRF patients was 15.7% in the 6-month period prior to the implementation of the PSC, which included 549 referrals and 86 patients. Additionally, the PSC was applied for 324 referrals over the subsequent 4-month period. Out of the patients that were reviewed using the PSC, 37 cases were acutely discharged from the IRF during their rehabilitation (11.4%). The most common reasons for acute discharge were heart diseases, sepsis, and change in neurological status.

Conclusion: As the findings indicated, the PSC is a useful instrument that can improve the care quality by identifying the patients at the risk of acute discharge before admission to the IRF.

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Introduction

The goal of an inpatient rehabilitation program is to improve the functional status of the patient in order to achieve the maximum functional independence and quality of life after getting discharged (1). The discharge from an Inpatient Rehabilitation Facility (IRF) to an acute care hospital (acute discharge) is not only a cost burden measure, but also a significant setback in patient recovery (2).

An acute discharge from the IRF is detrimental for multiple reasons including placing a financial burden on the Medicare system, patients, and their families (3), decreasing care efficiency due to an increased length of rehab stay, not allowing patients to meet the functional goals, and placing unnecessary stress on the patients and staff due to repeated admissions. The identification of risk factors for acute discharge prior to IRF admission may allow for prompt intervention or further acute care, which decrease the incidence of acute discharge from the IRF (2).

To this aim, the additional pre-admission screening must take place within the first 48 h of admission in order to meet the guidelines of the Medicare and Medicaid services (4).

The utilization of a supplemental facility-specific Pre-admission Screening Checklist (PSC) can allow the IRF care providers to identify the patients at the risk of acute discharge. By screening these patients and identifying the potential risk factors prior to admission, the IRF care team can maximize their effort for delivering the appropriate care and focus on the rehabilitation issues in order to provide high-quality care. In a study conducted by Kalisky, they found

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deficits among the head-injury rehabilitation patients, which were not often identified during the acute care hospital stay (5). Patients judged at initial evaluation to have unstable comorbid conditions that require close monitoring were at 81% greater risk of an adverse event, compared to their stable counterparts (2). There are several studies investigating the specific risk factors increasing the likelihood of acute discharge (3, 6-8).

This study is an attempt to compile these studies into an organized and standardized checklist to screen admission. The PSC developed by the IRF studies was developed in an effort to improve the quality of the patient rehabilitation by decreasing the occurrence of the acute discharge, which can be detrimental to the patient (2). There are many factors to consider when admitting a patient to an IRF. The PSC tool can be a useful supplement to the decision-making process.

Regarding this, the present study is a quality improvement initiative working toward increasing the care quality for the IRF patients with potential to meet their functional goals and decreasing the risk of acute discharge.

Materials and Methods

There are two aspects to this study: 1) a retrospective chart review examining the causes of the acute discharge and 2) the development of a Pre-admission Screening Checklist with implementation results.

Retrospective Chart Review

A retrospective chart review was completed, examining the data from the patients' medical charts (mean age: 67.7) admitted to an inner-city IRF over a 6-month period. These patients were acutely discharged due to worsening of their medical conditions. The data taken from the charts entailed such information as the risk factors for acute discharge, presence of a Centers for Medicare and Medicaid comorbidity tier, functional status (using the Functional Independence Measure), admission diagnosis (defined by impairment code), and the reason of readmission.

Examining the causes of the previous acute discharges helps the rehabilitation team to learn about the possible areas of improvement for delivering higher care quality in the future. The data were collected using a Uniform Data System for Medical Rehabilitation. This universal tool allows for the comparison of the rehabilitation outcomes against the industry benchmarks and facilitates the documentation of the severity of the patients' disability and rehabilitation results. This information was used as an objective component to the discussion performed by the entire rehabilitation unit as the PSC was developed.

Development of the Pre-admission Screening Checklist (PSC)

The PSC was developed as an interdisciplinary checklist to review the causes of acute discharge. The common health issues in acute discharges were explored using the retrospective chart review. In addition, these issues were discussed through an interdisciplinary dicussion to gain perspective from all the members of the rehab team including nurses, occupational and physical therapists, social workers, case managers, rehab residents, and attending physicians.

Due to the negative effect of acute discharge on the patient's health status and prognosis (2, 3), the IRF care providers realized a need for a comprehensive Pre-admission Screening Checklist to help decrease their occurrences. Having a screening checklist in the IRF to screen the potential rehab patients allows the team to discover any health issues prior to admission and be more aware of the patients' problems.

The PSC is an objective analysis of the patients' conditions that can be used prior to decision on admission to the IRF. A key component of rehabilitation is that the patient is able and willing to perform the rehab exercises. The issues previously addressed in items 1-3 of the PSC are absolute contraindications to rehab admission, which pertain to the patient's motivation and ability to safely perform a 3-hour therapy per day. Item 4 of this checklist addresses hypotension or significant hypertension of the patient as this would limit the physical activity and impede any rehab progress.

Several parts of the PSC investigate whether a patient has completely resolved his acute health issues. Items 6-10 address if the patient has shown resolution of acute pneumonia, congestive heart failure, electrolyte disturbances, or stabilization of glucose. Item 11 of this checklist addresses that the patient must have been in a Step Down Unit for at least 48 h prior to the rehab admission after receiving care in the Intensive Care Unit or Cardiac Care Unit. Item 12 of the PSC enquires whether a patient is in contact isolation, which is a relative contraindication to acute rehab admission.

To optimize rehab, a patient should be alert and oriented and not have an extensive wound (two issues addressed in items 13-14). Item 15 of the PSC addresses important factors regarding the predictability of functional gains in the current admission. If a patient is recently admitted to the IRF, the reasons and goals for the current rehab admission must be clearly identified before admission to optimize functional gains. The last issue on the PSC addresses the intensity of the rehabilitation program.

Once developed, the PSC was used to screen all admissions to the IRF. Following the consultation to the IRF by a rehab resident, the PSC is filled in by an attending physician within the process of the admission.

After four months of using the PSC, the rate of acute discharges were reviewed in order to determine the significance of this checklist.

The PSC was designed considering that the most significant contributing factors to acute discharge at the institution under investigation were medical complexity and cardiopulmonary decompensation. The relative

contraindications to the IRF admission were developed and added to the checklist after analyzing the length of stay, the diagnoses resulting in the greatest number of acute discharges, and the complication precipitating acute discharge.

Results

Retrospective Chart Review

According to the findings of the present study, 15.7% of the patients were acutely discharged prior to PSC implementation. The most common admission diagnosis for an eventual discharge during the time of the study was cerebrovascular accident affecting the right and left side of the body, respectively (Figure 1).

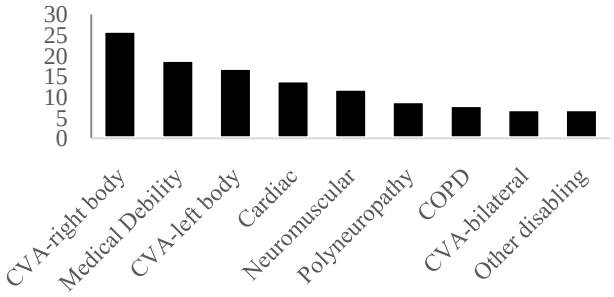


Figure1: PreimplementationAdmission Impairment Code and Frequency of Discharge.

Comparing the admission diagnosis, pulmonary diseases were found to be the most common cause of acute discharge, which accounted for 27.8% of the discharges from rehab to acute care hospitals within the 6 months of the study.

Amputation (24.2%) and lower extremity fractures (21.7%) were also recognized to be the other problems exposing the patients at the high risk of diagnoses for acute discharge.

As shown in Figure 2, the complexity of medical care and cardiac decompensation were the most common causes of acute discharge. While a number of the acutely discharged patients were referred from an outside IRF (n=25), the majority of these patients (80%) were from the same medical center (n=101).

Furthermore, the first 7 days of rehabilitation was found to be the most frequent period of acute discharge as 42% of these discharges occurred on the 7th day or before this time.

There was a noticeable decline in the rate of acute discharges during days 8-10. This rate underwent an increase and a decrease on days 11-14 and after day 14, respectively.

The level of functioning was measured by the Functional Independence Measure (FIM) to determine the functioning variations from admission to discharge. The mean FIM changes of the patients was 11.2.

The mean FIM score on admission was 51.5, which increased to 62.7 on discharge. In addition, the mean FIM efficiency was found to be 1.34 for all the participants.

The acute discharge rate for IRF patients was 15.7% in the 6-month period prior to the implementation of the PSC, which included 549 referrals and 86 patients discharged from the IRF to an acute care hospital.

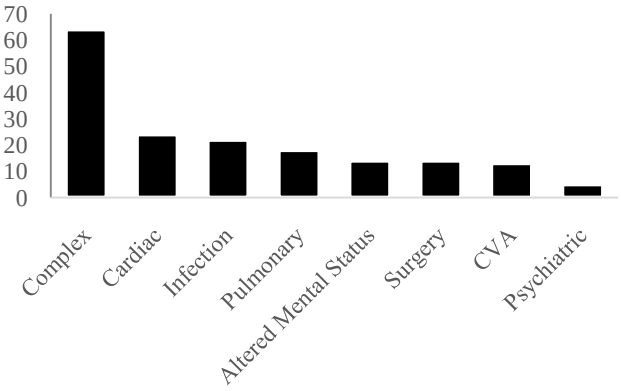


Figure2: Reason for Acute Discharge and Frequency of Occurrence: Preimplementation of Preadmission Screening Checklist

Pre-admission Screening Checklist implementation results

The PSC was used as a part of the medical record review prior to admission for 324 referrals over a subsequent 4-month period. Based on this tool, 37 patients were acutely discharged from the IRF during their rehabilitation (11.4%).

Figure 3 presents the frequency of acute discharges after a month of PSC implementation. The most common causes of acute discharge during this time were heart diseases, sepsis, and change in neurological status.

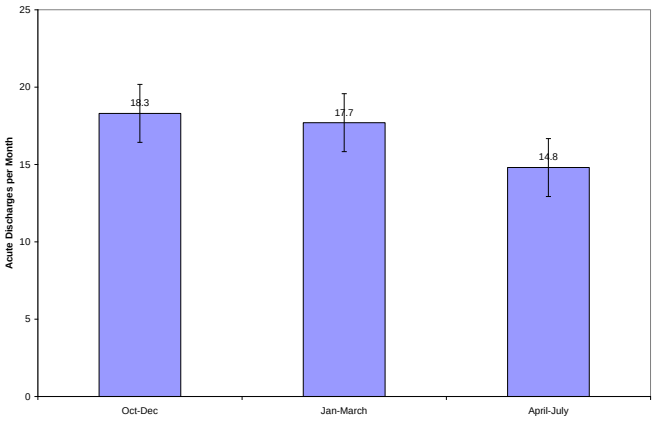
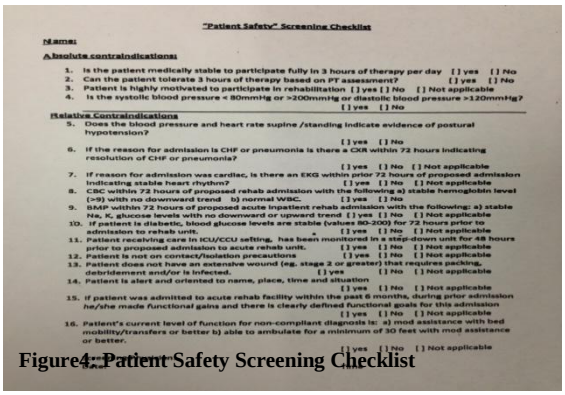


Figure3: Post PSC implementation: Acute Discharges from October 2013 – July 2013

The PSC helps the IRF team members attend to any issues and facilitates the monitoring of any possible complications to prevent any acute discharges. The PSC used in this study is shown in Figure 4, outlining the absolute and relative contraindications for admission to the IRF.



"Patient Safety" Screening Checklist

Name:

Absolute contraindications:

1. Is the patient medically stable to participate fully in 3 hours of therapy per day [ ] yes [ ] No
2. Can the patient tolerate 3 hours of therapy based on PT assessment? [ ] yes [ ] No
3. Patient is highly motivated to participate in rehabilitation [ ] yes [ ] No [ ] Not applicable
4. Is the systolic blood pressure < 80mmHg or >200mmHg or diastolic blood pressure >120mmHg? [ ] yes [ ] No

Relative Contraindications

5. Does the blood pressure and heart rate supine /standing indicate evidence of postural hypotension? [ ] yes [ ] No
6. If the reason for admission is CHF or pneumonia is there a CXR within 72 hours indicating resolution of CHF or pneumonia? [ ] yes [ ] No [ ] Not applicable
7. If reason for admission was cardiac, is there an EKG within prior 72 hours of proposed admission indicating stable heart rhythm? [ ] yes [ ] No [ ] Not applicable
8. CBC within 72 hours of proposed rehab admission with the following a) stable hemoglobin level (>9) with no downward trend b) normal WBC. [ ] yes [ ] No
9. BMP within 72 hours of proposed acute inpatient rehab admission with the following: a) stable Na, K, glucose levels with no downward or upward trend [ ] yes [ ] No [ ] Not applicable
10. If patient is diabetic, blood glucose levels are stable (values 80-200) for 72 hours prior to admission to rehab unit. [ ] yes [ ] No [ ] Not applicable
11. Patient receiving care in ICU/CCU setting, has been monitored in a step-down unit for 48 hours prior to proposed admission to acute rehab unit. [ ] yes [ ] No [ ] Not applicable
12. Patient is not on contact/isolation precautions [ ] yes [ ] No [ ] Not applicable
13. Patient does not have an extensive wound (eg. stage 2 or greater) that requires packing, debridement and/or is infected. [ ] yes [ ] No [ ] Not applicable
14. Patient is alert and oriented to name, place, time and situation [ ] yes [ ] No [ ] Not applicable
15. If patient was admitted to acute rehab facility within the past 6 months, during prior admission he/she made functional gains and there is clearly defined functional goals for this admission [ ] yes [ ] No [ ] Not applicable
16. Patient's current level of function for non-compliant diagnosis is: a) mod assistance with bed mobility/transfers or better b) able to ambulate for a minimum of 30 feet with mod assistance or better. [ ] yes [ ] No [ ] Not applicable

Figure4: Patient Safety Screening Checklist

Discussion

The cute discharge from the IRFs has a significant impact on the patients, units, and staff of these centers. The current quality improvement initiative attempted to evaluate the acute discharges by reviewing the causes of discharging the patients to the acute care hospital.

This study particularly attended to the measures that could be taken to prevent the occurrence of these discharges.

The PSC was developed as a tool to help inspect the potential risk factors for an acute discharge based on the information attained in the retrospective review.

The potential for the acute discharge is one of the multiple factors that must be considered when deciding which patient will benefit from the IRF admission and the PSC is one of the tools that can be useful in this decision making process.

There are a number of studies investigating the issue of acute discharge from the IRF. Faulk examined the effect of multiple factors on the return to an acute care hospital. They found the rehabilitation admission time (i.e., patient admission at the end of the day resulted in higher rate of return to acute care hospital) and FIM scores as two significant factors affecting the acute discharge (9).

In 2013, Hoyer demonstrated that low FIM scores, particularly the motor section scores, on admission was strongly associated with unplanned discharges from the IRF to acute care hospitals (10).

Regarding the traumatic brain injury rehabilitation, it was demonstrated that 9% of the patients with history of coronary artery diseases and congestive heart failure, acute care diagnosis of depression, and old age were required to return to an acute care hospital during their rehab (11).

The PSC pilot project resulted in an overall decline in the rate of acute discharges (i.e., from 15.7% to 11.4% obtained six months prior to the implementation of this checklist and four months after its implementation, respectively).

As pressures to decrease the length of stay in the acute care hospital setting, the patients may get increasingly unstable during the transfer to inpatient rehabilitation. Regarding this, certain measures must be taken to reduce the burden placed on IRFs in this regard (8). The PSC should enable the care providers to recognize the potentially unsafe patients. Each IRF should tailor a screening tool to their particular setting after reviewing the causes of acute discharges.

The patients with cerebrovascular accidents comprised the largest group of those transferred from rehabilitation to an acute care setting. Medical debility was found to be the second most common cause that led to the acute discharge (12).

Comorbidities commonly contribute to emergency transfer from the IRF to acute care hospital (5-8). The number of comorbidities, in addition to their severity, increases the risk of the unexpected transfers (13). Male gender (8, 13), coronary artery diseases, congestive heart failure, 7 old age (8), reduced capacity to perform activities of daily living (8), and the presence of a neoplasm (14) increase the likelihood of transfer from an IRF to an acute care hospital. After getting transferred, the patients not only had longer hospital stays due to more complex treatment regimens, but also utilized a higher level of resources from the admitting hospital because of the fragility of their state (15).

Motor function significantly predicted the risk of acute discharge (16) and a lower motor FIM score correlated with a higher rate of return to the acute care hospital (17) In addition, comorbid pneumonia was associated with poorer rehabilitation outcomes (18) and contact precautions increased the length of hospital stay and decreased FIM scores (19).

Consequently, an accurate PSC can be helpful in decreasing the costs by improving the admission practices of the IRF.

The checklist developed in this study can elucidate the risks factors and potential preventive measures for the acute discharge. Additionally, this checklist may prevent the functional status decline during the acute care hospital stay by ensuring the optimized status of the patient before his transfer (20). A physician must evaluate the needs, functional status, and disability of the patient to determine the type of rehabilitation services needed including frequency, intensity, and duration of care necessary to maximize the functional independence of the patient after discharge (21).

Conclusion

As the findings indicated, the patients admitted to the IRF with a neurologic, cardiopulmonary, or debility diagnosis and a low level of function are at the risk of acute discharge within the first week of their admission and achieve minimal functional gains prior to getting discharged.

The fundamental importance of the PSC is that it focuses the attention of the admitting physiatrist on the key aspects of the patient's primary diagnosis, co-morbid conditions, and risk factors for potential acute illness and discharge prior to admitting the patient.

Consequently, this tool can be helpful in addressing the underlying risk factors for acute discharge prior to accepting the patient to the IRF.

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