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Preventing Hospitalization-Associated Disability

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Preventing Hospitalization-Associated Disability

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NURS 670 Internship – K13

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Abstract

Problem: Hospital-associated disability (HAD) affects one-third of hospitalized adults, diminishing post-discharge independence and contributing to high mortality rates. Identifying at-risk patients through early assessment of nutritional and functional status upon admission is critical to personalizing care and improving discharge outcomes.

Context: A 24-bed adult medical-surgical unit in a 173-bed suburban hospital in Northern California is part of a large not-for-profit healthcare organization.

Interventions: Nursing staff received education on the Enhanced Recovery Medicine (ERM) pathway designed to prevent HAD. A visual display board, maintained and updated by unit champions, gave staff performance feedback. Nursing leadership reviewed admission assessments and addressed barriers daily.

Measures: Outcome measures included the percentage of seven-day readmission rates and the percentage of patients discharged to home versus skilled nursing facilities. Process measures involved the percentage of completed admission Malnutrition Screening Tests (MST) and Previous Level of Function (PLOF) assessments.

Results: By April 2024, MST completion rates had increased to 91%, and PLOF assessments had risen to 94%. During the intervention period, the percentage of patients discharged to home increased from 79% to 83%. Seven-day readmission rates remained unchanged.

Conclusions: Completing nutritional and physical functional assessments upon admission allows customized care planning, enhances the patient's ability to maintain independence during hospitalization, and promotes discharge to home rather than skilled nursing facilities.

Keywords: *Hospitalization-Associated Disability (HAD), Enhanced Recovery Medicine (ERM), malnutrition screening, malnutrition, previous level of function, functional status*

Personal Leadership Statement

The choice of focus on reducing hospital-acquired disability (HAD) is rooted in my values, experiences, and the organization's mission. Addressing HAD risk factors through proactive assessments upon admission personifies my commitment to delivering high-quality, cost-effective healthcare services prioritizing patient satisfaction and well-being. Recognizing the significant repercussions of reduced independence, I am committed to adopting and deploying tools that customize nursing care based on the patient's needs to maintain functional status during hospitalization.

My values are evident throughout the project, as I emphasize personalized care, staff empowerment, and driving evidence-based initiatives. My leadership strengths lie in influencing and developing others. Feedback received from others includes having an "infectious" positive perspective that improves engagement among those I interact with. Throughout this project, I employed those strengths to bolster front-line staff in advancing a culture of engagement and collaboration to enhance nurse job satisfaction and retention, align with organizational priorities such as pursuing Magnet status, and promote consistency across units.

The quality improvement project furthered my capacities as a clinical nurse leader, outcomes manager, communicator, and team leader in implementing evidence-based best practices. Lastly, this project's potential to improve patient satisfaction and outcomes boosts the unit's reputation and contributes to overall organizational success, for which I have been honored to help lead.

Preventing Hospitalization-Associated Disability

Acute hospitalization has emerged as a prime cause of functional decline in older adults, irrespective of the primary admission diagnosis (Admi et al., 2015). Patients presenting to the hospital because of an acute illness such as exacerbation of congestive heart failure or community-acquired pneumonia may achieve symptom resolution within several days; however, these same patients may be unable to return home due to a new or worsened state of physical deconditioning resulting in what is termed hospital-acquired disability (HAD). To mitigate the deleterious effects of HAD, many healthcare organizations have adopted various frameworks and care models, such as Nurses Improving Care for Health System Elders (NICHE), Acute Care for Elders (ACE), and Hospital Elder Life Program (HELP), aimed at curbing or forestalling the onset of HAD. These models of care prioritize the preservation of physical and cognitive capacities to optimize discharge independence and reduce the far-reaching repercussions of HAD on patients, families, and healthcare systems (Admi et al., 2015).

Problem Description

Background

Hospital-acquired disability (HAD) is defined as “new or additional disabilities in activities of daily living (ADL) at hospital discharge compared to preadmission baseline”(Chodos et al., 2015). One-third of adults over 65 incur some HAD when hospitalized and are less able to care for themselves (Chodos et al., 2015; Loyd et al., 2020). These patients are at an increased risk of readmission, prolonged rehabilitation after acute hospitalization, and death (Chodos et al., 2015; Covinsky et al., 2011; Loyd et al., 2020). One study showed that a year after discharge, 29% of patients discharged with a HAD remained disabled while 41% had died (Boyd et al., 2008). The repercussions of diminished independence are far-reaching; thus, reducing HAD is a healthcare imperative and aligns well with the healthcare organization's mission of providing high-quality, cost-effective care.

Well-established Enhanced Recovery After Surgery (ERAS) protocols, including nutrition and mobilization, are evidenced-based interventions that decrease complications, length of stay, and readmission rates in surgical patients (Gramlich et al., 2017; Martin et al., 2018). Building on the success of the ERAs protocols, one hospital system developed the Enhanced Recovery Medicine (ERM) pathway. This pathway aims to aid non-surgical patients in retaining prehospital levels of physical and cognitive functional status, thereby reducing the incidence of HAD. The ERM pathway incorporates two acute care admission assessments: the nutrition and physical function screening. Both are essential to improving patient outcomes as they help clinicians identify patients at high risk of deconditioning and muscle wasting while promoting nutritional support and mobility (Diep-Pham et al., 2023; Swoboda et al., 2020; Urquiza et al., 2020). Furthermore, preventing HAD allows patients to return home more quickly after hospitalization, reducing costs and readmissions while improving the patient experience (Chodos et al., 2015; Covinsky et al., 2011; Loyd et al., 2020).

Setting

The microsystem chosen to implement this quality improvement initiative is a 23-bed unit and one of five medical-surgical nursing units in a 173-bed suburban hospital in Northern California. The hospital is part of an extensive not-for-profit hospital system. The unit cares for older patients and has a higher discharge rate to long-term care facilities when compared to other similar medical-surgical units within the local community (Healthconnect, 2022).

Quality Gap

In 2023, this microsystem's hospital scored lowest among the health systems 21 Northern California hospitals for the ERM Composite Bundle, scoring 84 out of 100 (TPMG Consulting Services, 2024). This score is obtained from the admission assessment in the electronic health record (ERH), where nurses document the previous level of function (PLOF), the malnutrition screening tool (MST), daily mobility, sleep, and confusion scoring. Completing these screenings is vital as they provide relevant

information about the patient's baseline level of independence. Practitioners use the information recorded to customize care plans to maintain the patient's independence. Analysis of the low composite scores identified that the two admission assessments, MST and PLOF, were incomplete for 15% of patients (TPMG Consulting Services, 2024). Notably, this hospital has a 13% readmission rate, one of the highest compared to the other 21 Northern California acute care hospitals within the larger healthcare organization (TPMG Consulting Services, 2024). Based on the data, this quality initiative's primary focus was improving MST and PLOF screening, which drives further clinical interventions to prevent HAD.

Organizational Priorities

Maintaining patients' independence during hospitalization is a healthcare priority. This ERM pathway demonstrates the healthcare system's mission and vision "to advance and promote healing hospitals to help our patients get back to their lives." (Kaiser Permanente, 2022). Maintaining patients' independence in their activities of daily living (ADL) allows them to be discharged home instead of to a rehabilitation or skilled nursing facility and may prevent additional hospitalizations. Reducing readmission rates is another top priority for the organization and a national healthcare focus, as it lowers healthcare costs and improves outcomes (Centers for Medicare & Medicaid Services, 2023).

Specific Project Aim

This quality improvement initiative aimed to prevent Hospitalization-Associated Disability (HAD) in adult patients by increasing assessment rates on both the malnutrition screening tool (MST) and the patient-reported level of function (PLOF) tool at the time of admission from 85% to >90% by May 1, 2024

Available Knowledge

Search Strategy

A population, intervention, comparison, outcome, and time (PICOT) question was developed to guide the literature search for this quality improvement project. The PICOT question asks: In medical-surgical nurses (P), does education, data wall display, and audit feedback (I), compared with no intervention (C), increase rates of nutrition and physical function assessments upon admission (O) over one month?

An in-depth literature review was conducted in CINAHL, PubMed, and Scopus databases. Search terms included *hospitalization, disability, nursing, data wall, visual board, audit, education, malnutrition, functional screening, and enhanced recovery medicine*. Truncation was used. The search was initially limited to articles from 2019 forward but broadened to include three influential articles published between 2011 and 2017. Articles from outpatient settings were discarded. The Johns Hopkins Nursing Evidence-Based Practice Appraisal Tools (Dang & Dearholt, 2018) were used to appraise the evidence and presented in an evaluation table (Appendix A).

Critique of Evidence

Hospitalization-Associated Disability occurs in one-third of adults (Chodos et al., 2015; Loyd et al., 2020). Chodos et al. (2015) studied over 500 adult patients over 55 admitted to San Francisco General Hospital between 2010 and 2012. This level III A study analyzed patient data from a previously reported prospective cohort study for HAD. The researchers found that half of the 191 patients with new disabilities attributable to their hospitalization had not recovered 30 days after discharge. Similarly, a level II meta-analysis by Loyd et al. (2015), which included studies with a combined sample size of 7,375 adults over 65, concluded that even with shorter lengths of hospital stay, patients over the age of 65 still had a 30% chance of developing HAD.

In 2011, the American Medical Association published an influential study containing a comprehensive risk stratification tool for Hospitalization-Associated Disability (HAD) and practice recommendations (Covinsky et al., 2011). The study reinforced the importance of nutrition, mobility, sleep, and cognitive assessment in preventing HAD. The authors recommend models of care, including the Acute Care of Elders (ACE), Geriatric Evaluation Management (GEM) units, and Hospital Elder Life Programs (HELP) to mitigate HAD. This literature review is rated Level V B on the JHEBP rating system and is the basis for this project's Enhanced Recovery Medicine (ERM) model.

Gramlich et al. (2017) conducted a qualitative study to develop a model to sustain enhanced recovery after surgery (ERAS) protocols. Their work highlighted that changing clinician behavior depends on communication, teamwork, audit feedback, and unit champions. Barriers to change included a lack of coordination between departments and clinicians' adaptation to change. This JHEBP Level III B study was supported by Martin et al. (2018), who also examined ERAS implementation and found that time constraints were the most significant barrier to clinicians' sustained use of protocols (Martin et al., 2018) and was rated as a Level III B utilizing the JHEBP tool.

Emerging Themes

The findings of Chodos et al. (2015) and Loyd et al. (2020) demonstrate how more than half of patients who developed HAD experienced prolonged recovery with persistent deterioration even after 30 days post-discharge. Additionally, persons aged 65 or older are at greater risk of developing HAD even when hospital stays are brief. The work of Covinsky et al. (2011) provides a pathway for preventing the deterioration of patients' independence in the hospital. Gramlich et al. (2017) and Martin et al. (2018) guide the successful sustainment of initiatives that are the basis for this quality improvement project's interventions.

Clinicians innately know that patients deteriorate during hospitalization and understand the importance of nutrition and mobility in maintaining the quality of their patient's lives. However, the

hospital is a place of competing priorities, and in that environment, even well-intentioned individuals may not prioritize actions that preserve independence. The work of these authors draws attention to nurses' ethical responsibility to maintain patients' independence and provide a path to preventing HAD.

Rationale

John Kotter's method of leading change provides the conceptual framework for this project. This change theory is comprised of sequential, sometimes overlapping, steps. Kotter differentiated leaders and managers in his work: "Leaders (1) set a direction, (2) align people, and (3) motivate and inspire people" (Nelson et al., 2007). Kotter's Eight-Step Process for Leading Large-Scale Change reflects a commitment to transformational leadership. These eight steps guided each phase of this project. Step one, *tension for change*, was implemented by sharing knowledge about how many of the unit's patients could not go home after discharge. Once staff realized that many formerly independent patients were leaving the facility dependent on caregivers, there was a desire for change. Step two, *coalition*, was established by clinical nurses drawn to the work, quality nurse consultants, nurse educators, unit managers, and directors. *Vision*, step three, brought the coalition together to develop strategies that could direct the change effort. A data wall was implemented in step four, *communication*, to share weekly performance metrics with staff. This step also included communication from the coalition during staff huddles and meetings. In step five, *empowerment*, bedside nurses shared challenges to admission assessments, and leadership reduced or removed those barriers. Limited staff time, language barriers, and confused patients were the most common barriers. The coalition developed strategies to increase the time available for admission assessments, provide additional iPad interpreters, and clarify exclusion criteria for patients not screened.

Entering step six, *early successes* involved recognizing short-term wins with coffee and donuts for staff, and a thank you letter from nursing leadership. *Expanding change*, step seven, allowed leaders to capitalize on the momentum from this project to engage staff in other ERM components, including

mobility and sleep. Success with visualizing project data on the data wall spurred broader conversations about the spread of the data wall to the hospital's other medical-surgical floors. The eighth and final step of Kotter's Process is *grounding*. During this step, change becomes hardwired into a culture. This step ensures sustainability and can be challenging. John Kotter's vision of leaders that motivate and inspire is the driving framework for this quality improvement project and propels it forward through engaging clinical staff at each step.

Context

Microsystem Assessment

A microsystem analysis was conducted using the Five P's Framework, which includes identifying the unit's purpose, patients, professionals, patterns, and processes (Nelson et al., 2007). The purpose of this nursing unit is to provide excellent care to hospitalized adult patients and their families while minimizing waste and supporting staff. The microsystem employs 76 registered nurses, nine patient care technicians, and four unit assistants. There are between five and nine staff members on each eight-hour shift, depending on the census and time of day (C. Oliva, personal communications, Oct. 27, 2022). Regular processes are medicating, toileting, hourly rounding, answering call lights, providing meal trays, admissions, and discharges. Patterns include employees being drawn away from their tasks by interruptions, mainly phone calls, call lights, and missing supplies or equipment (J. Ekbatani, personnel communications, Oct. 30, 2022).

This microsystem performs well in terms of leadership strength and support, staff interaction and collaboration, and patient focus. However, the unit needs improvement in providing initial and ongoing staff education and transparency of performance results. During an interview, the unit practice council chairperson validated these findings, stating, "There are always new priorities being rolled out, and we (front-line staff) have little opportunity to understand what they mean." While leadership has access to vast source materials and data on organizational metrics that matter, staff are often left in the

dark. This continual shifting of priorities requires constant juggling by nurses, who must quickly pivot between initiatives. “By the time (quality improvement projects) make it to us on the floor, it is just about the charting, not the actual care we are providing or the reason behind it” (personal communication with Unit Practice Chair, Jan. 29, 2024). The feelings of staff summarized in these statements are not isolated to nursing or this unit but emphasize the need for leaders to be transparent and communicate change by providing the “why” and seeking input from the staff responsible for the work. Honest and transparent leaders empower staff to collaborate rather than resist the proposed change (Mobilio, 2022). Several tools were used to help inform this quality improvement initiative, including a gap analysis, a SWOT analysis, a communication plan, a power grid analysis, and a budget. All of the work is summarized in a timeline within a Gantt chart.

Gap Analysis

This project aimed to improve medical surgical nurse screening rates of PLOF and MST within 24 hours of admission from 85% to over 90% by May 2024. Steps planned to bridge the gap included obtaining approval from leadership, educating staff on the ERM pathway, forming an ERM team, appointing unit ERM champions, creating and utilizing an ERM data wall, performing daily audits, recognizing project achievements, and broadening the project's scope to include additional ERM metrics and is discussed further in the gap analysis (see Appendix B).

The driver diagram (see Appendix C) outlines the strategy to increase nurse screening rates on the MST and PLOF tools at admission. The primary drivers include nurses not recognizing the importance of nutritional and physical function assessments upon admission, time constraints, patient inability to answer screening questions due to confusion or lethargy, and nurse assumption that the patient's previous nurse had completed all admission assessments. Secondary drivers involve identifying unit practice council co-chairs as ERM leaders, designing and updating an ERM data wall, and integrating feedback mechanisms through daily audits by a Quality Nurse Consultant. The change concepts include

leveraging the enthusiasm of council co-chairs, utilizing visual displays to enhance staff engagement, and providing direct, constructive feedback to improve documentation compliance. These elements provided a structured approach to increasing MST and PLOF screening rates.

GANTT Chart

A Gantt chart tracked the project's timeline and documented key project milestones (see Appendix D). In February 2024, the project gained upper leadership support, and the Unit Practice Council co-chairs were identified as ERM leaders. Later that month, a visual display board was created to track and communicate progress. In March of 2024, clinical ERM leaders, staff, and unit nursing leadership were provided initial education on ERM through staff meetings, one-on-one conversations, and the sharing of literature. In April 2024, chart audits were initiated to gain additional knowledge about barriers impacting compliance. During May 2024, staff and leaders discussed the effectiveness of the data wall, project communication, and audits. Starting in June 2024, the project turned to sustainment with continued weekly updates of performance rates in the data wall, spot audits on admission assessments by Assistant Nurse Managers (ANMs), and monthly ERM discussions at unit practice council meetings.

Strength Weakness Opportunities and Threats (SWOT) Analysis

With the project framework in place, a detailed investigation of the potential for success and failure was performed. Conducting a comprehensive SWOT analysis enables this project to leverage its strengths and opportunities while mitigating weaknesses and threats (see Appendix E).

Strengths

This quality improvement project benefits from several strengths that can facilitate its successful implementation. The arrival of a new Adult Services Director introduced a change in perspective and leadership skills that helped drive the project forward. Additionally, the enthusiasm of the newly formed unit practice council reinvigorated the commitment to collaborative decision-making, reducing

stagnation among staff within the unit. Another strength was the decision to display only the HAD project data on the unit, which allowed the project to stand out and receive focused attention.

Moreover, the unit's pride in providing exceptional patient care and interest in evidence-based practice create an environment ripe for implementation. The higher nurse-to-patient ratio, five to one, allows for more aide hours on this unit, ensuring adequate support for daily living activities and time to conduct admission assessments.

Weaknesses

Despite its strengths, there are internal weaknesses that may hinder its effectiveness. First, the unit's laissez-faire culture before the new Director could again re-emerge, impeding staff members' enthusiasm and commitment to project goals. Second, poor communication systems, including staff reluctance to engage with emails and flyer fatigue, could prevent important information regarding the project from being disseminated broadly, threatening forward progress and further collaboration. Third, staff and leaders' change fatigue due to changing priorities could create resistance or lack of buy-in for these new initiatives. Finally, the unit's reputation as "the skilled nursing facility of the hospital" suggests a potential stigma associated with the patient population and a factor impacting staff morale and engagement.

Opportunities

The external influence of the organization's pursuit of Magnet status presents a significant opportunity to align the project with overarching strategic goals and garner support from leadership at the highest levels. Future scaling of the project to include other organizational units will promote consistency. Increased staff engagement from involvement in evidence-based initiatives like this project can lead to higher job satisfaction and retention. Furthermore, improved patient satisfaction and outcomes resulting from personalized care can enhance the unit's reputation and contribute to organizational success.

Threats

The project is subject to external threats that could hinder its progress and sustainability. Competing organizational priorities may divert resources and attention from this project, challenging securing necessary support and resources. A top-down leadership approach may stifle staff empowerment and engagement, undermining the project's ability to gain traction. Organizational focus on throughput and efficiency may prioritize operational metrics over preventative care initiatives, reducing staff's available time and resources for conducting admissions assessments. Moreover, the unit's unfamiliarity with reviewing quality metrics could hinder efforts to communicate about unit performance. Addressing these threats requires clear communication, engagement, and focused leadership efforts to foster a culture of continuous quality improvement within the unit.

Communication Plan

A successful communication plan (see Appendix F) is comprehensive, transparent, and tailored to address the specific challenges and opportunities identified in the SWOT analysis. The project's stakeholders include nursing staff, unit council members, unit management, hospital administration, and patients. Communication objectives included increasing awareness about the importance of admission assessments, fostering staff engagement, and promoting a culture of continuous improvement in patient care.

Communication with clinical nurses included staff meetings, flyers (see Appendix G), emails, data wall, and direct communication from unit champions and leadership. The February 2024 staff meeting was initially used to share the importance of admission assessments with staff. Sustainment plans include a continued 'ERM Lookback' as part of staff meetings in which the unit manager shares where the unit performs compared to historical and regional assessment rates. Project successes were disseminated to hospital administrators via email and direct communication as they occurred. Patients

can glean information about HAD and their role in maintaining independence through the data wall and conversations with their nurses.

Power Interest Grid

A power interest grid is a strategic tool for analyzing stakeholders' levels of power and interest in a project (see Appendix H). This framework facilitates the identification of key stakeholders and informs communication strategies to engage and mobilize support for the project effectively. The Adult Services Director, unit management, and the Unit Practice Council are among the stakeholders demonstrating high power and interest. As primary advocates, they possess substantial authority and are keenly interested in the project's outcomes, thus warranting targeted communication efforts to ensure their continued buy-in and support.

Stakeholders that possess high power but low interest include senior management. While they wield considerable decision-making authority, their level of interest in the project varies depending on its perceived impact on shifting organizational priorities. Accordingly, communication strategies should emphasize the project's potential to improve patient outcomes. In contrast, low-power but high-interest groups include frontline staff nurses, patients, and their families. These allies can significantly influence project success. Effective communication with these stakeholders focuses on fostering a sense of ownership and empowerment, emphasizing the tangible benefits of the project.

Interventions

Identification of unit champions, communication, audit feedback, and teamwork are components of a successful implementation (Gramlich et al., 2017; Martin et al., 2018). To ensure success, three primary interventions were implemented as part of this project: 1) identification and education of clinical practice champions, 2) creation of a visual metrics board, and 3) audit feedback.

Unit Practice Council chairs became the champions of ERM and this project. These staff members were enthusiastic about becoming super users and project advocates because the ERM

pathway aligned well with the Unit Council's current goal of decreasing HAD in their microsystem. The project coordinator educated these project champions on the ERM pathway and the role of admission assessments in reducing HAD. All staff in the microsystem received information both actively and passively. Active information sharing was done formally by providing targeted and specific education about the project during staff meetings and informally through one-on-one conversations and unplanned, spontaneous huddles. Passive information sharing was done utilizing signage on the unit. As the project progressed, the Unit Practice champions sought feedback from front-line staff regarding barriers to assessment or documentation. These interventions increased teamwork and communication about the microsystem's performance in preventing HAD.

Data visualization is critical to the success of any project. A visual display wall was created to display performance and drive increased screening rates. Clinical leaders were pivotal in decision-making around the content and appearance of this new ERM data wall (see Appendix I). The information displayed included (a) goal assessment rates and (b) the microsystem's current weekly assessment rates. Red and green arrows for each measure provided a simple visual indicating performance improvement or decline. Statistics about 'why these metrics matter' and documentation guides were also posted on the data wall. In addition to goals and performance on admission assessment, these clinical leaders choose to include five other ERM components. These care metrics included (a) mobility optimization, (b) teeth brushing, (c) out of bed for meals, (d) sleep assessment, and (e) confusion monitoring. The materials used to create the visual display included a whiteboard, electrical tape, laminated text generated by the project lead, and red and green magnets (see Appendix J). Unit champions took ownership of updating the display weekly.

The project coordinator, a Quality Nurse Consultant, performed real-time audits with daily feedback to bedside staff. The electronic health record was reviewed for MST and PLOF scoring assessment on each patient admitted in the preceding 24 hours. If the documentation was incomplete, a

secure message in the electronic health record would be delivered to the nurse caring for the newly admitted patient. A standard message was developed for consistency. The message read, *“Hi Nurse X, I noticed that Patient Y has not yet been assessed for baseline nutrition and physical function. Are you able to complete the admission assessment on your shift? Please let me know if you encounter any barriers so I can help problem solve. We want to make this process as easy as possible”*. The quality nurse consultant who conducted the audits was often present in the unit and regularly involved in huddles for ERM. Because the quality nurse was well-known among the staff and had an established relationship, they were responsible for communicating with the primary nurses in real-time. These just-in-time reminders were instrumental in identifying barriers to completing the admission assessment. Based on feedback from front-line nurses, screening barriers identified included patient issues such as confusion or drowsiness. This feedback allowed the project team to reduce these barriers by educating staff that the screenings can be done at any point in the first 24 hours of admission and to document ‘unable to assess’ if the patient is unwilling or unable to complete screening questions.

Budget

This project's budget encompasses one-time implementation costs and ongoing annual sustainment expenses (see Appendix K). Implementation costs are primarily payroll expenses. A significant portion of these expenses is allocated to the Quality Nurse Consultant, responsible for critical tasks such as identifying and training Unit Champions, creating a data wall, and assisting Unit Champions in preparing for monthly staff meetings. Additionally, Unit Champions, comprising two registered nurses, incur costs for training, data wall maintenance, and staff meeting preparation. The total payroll cost for the one-month implementation period amounts to \$4,156.

In addition to payroll expenses, the implementation budget includes materials required for establishing the data wall, such as a whiteboard with grid lines, magnetic arrows, dry-erase markers, and laminated text, totaling \$193. Consequently, the total implementation cost sums up to \$4,349. Moving

forward, the annual sustainment costs primarily encompass payroll expenses for ongoing activities, including monthly staff meeting presentations by Unit Champions and random admission audits by ANMs. These sustainment activities aim to uphold the project's effectiveness and adherence to established protocols, with an annual sustainment cost of \$14,989.

Cost Benefit Analysis

A cost-benefit analysis underscores this project's potential economic impact by focusing on cost-avoidance measures and positive patient outcomes (see Appendix L). The analysis focuses on the benefits derived from decreased seven-day readmission rates. By multiplying the average readmission cost per patient, the current readmission rate, and the annual census within the microsystem, the current cost of readmissions can be extrapolated. A projected 5% decrease in readmission rates would alter pre-project readmission rates from 8.4 in 100 patients to the regional goal of 8 in 100. This reduction in readmissions could result in a total cost reduction of \$81,500 annually.

Additionally, the project anticipated benefits, including increased discharge rates to home, positive patient experiences, and improved nursing engagement, which further contribute to overall cost savings and enhanced quality of care. When juxtaposed against the implementation and annual sustainment costs, totaling \$4,349 and \$14,989, respectively, the project yields a favorable annual cost-benefit analysis of \$62,162. This analysis underscores the project's potential to deliver significant financial returns while concurrently improving patient outcomes and enhancing healthcare delivery practices within the microsystem.

Study of the Interventions

This project's interventions aimed to decrease HAD by improving MST and PLOF admission assessment rates through communication, teamwork, and performance feedback. Tracking key performance indicators across three domains—outcome, process, and balancing measures—was crucial to evaluating the benefits of this quality improvement project.

Measurement strategy

The outcome measures for this project include the percentage of seven-day readmission rates and the percentage of patients discharged to home, both obtained from TPMG Consulting Services' ERM Daily Report. Process measures include the percentage of admission MST and PLOF screenings completed, with data from the same ERM Daily Report. Balancing measures focus on ensuring operational efficiency and sustainability by monitoring for any increase in incremental overtime through staffing payroll reports. Further details are included in the Project Charter (Appendix M).

Plan-Do-Study-Act (PDSA) Cycle

PDSA Cycles were used to refine interventions (see Appendix N). Planning included gathering input about data wall content and layout from numerous stakeholders and identifying clinical ERM Leaders. During the 'Do' stage, the data wall was updated weekly, and assessment audits were conducted with feedback provided to nurses to identify and address any barriers. The interventions were analyzed by reviewing outcomes, processes, and balancing measures. Based on the findings from the study phase, the project team determined that additional interventions were not warranted. Future work will focus on sustainment and spread, emphasizing leadership support.

Ethical Considerations

Reflecting on this quality improvement project, Jesuit values and the ethical standards outlined by the American Nurses Association (ANA) are deeply ingrained in its structure and execution. The Jesuit values of service, excellence, and care for the whole person (*University of San Francisco, 2024*) are reflected in the project's goal of preventing HAD and promoting holistic patient care. By focusing on proactive admission assessments and early interventions, the project embodies the Jesuit commitment to serving others and striving for excellence in healthcare delivery. Moreover, the project's emphasis on patient-centered care and the preservation of human dignity aligns closely with the ANA's ethical

standards, which emphasize the nurse's responsibility to advocate for and uphold the rights and well-being of patients (ANA, 2015).

By implementing evidence-based practices and routinely evaluating outcomes, the project aligns with the ANA's ethical imperative to maintain competency and promote safe, effective, and ethical care (ANA, 2015). The project's approval as a quality improvement initiative underscores its commitment to transparency, accountability, and ethical oversight. The organization's institutional review board (IRB) has reviewed the project as non-research (see Appendix O). Additionally, this project has been approved as a quality improvement project by the University of San Francisco faculty using QI review guidelines and does not require IRB approval (see Appendix P). The project demonstrates a commitment to ethical research practices while prioritizing excellence in patient care.

Outcomes

Measures

This quality improvement initiative aimed to prevent HAD in adult patients by increasing MST and the PLOF tool screening rates at admission from 85% to >90% by May 1, 2024. Process measures included the percentage of completed MST and PLOF assessments upon admission. Outcome measures comprised seven-day readmission rates and the percentage of patients discharged to home versus a skilled nursing facility. Data for outcome and process measures were sourced from the TPMG Consulting Services ERM Daily Report.

Results

After implementing daily barrier assessments—the final intervention—MST completion rates increased to 91%, and PLOF assessments rose to 94% during the intervention period (see Appendix Q) (TPMG Consulting Services, 2024). Additionally, the percentage of patients discharged to home increased from 79% to 83%. However, the percentage of patients returning to the emergency department within seven days of discharge showed no overall change (see Appendix R).

Summary

This quality improvement initiative successfully increased adherence in completing the nutrition and physical function assessment at admission as part of the ERM pathway within the targeted microsystem. The corresponding increase in 'Discharge to Home' rates was encouraging; however, the lack of impact on the percentage of patients returning to the emergency department within seven days of discharge suggests that further work is needed. This microsystem, and others like it, may achieve better patient outcomes by centering on educating and supporting front-line staff in preventing deconditioning and malnutrition during acute hospital admissions.

Strengths

During this quality improvement project, it became apparent that the most powerful tool for improving patient care is an engaged staff. Bedside nurses face numerous demands on their time and attention each shift, and evolving organizational priorities add to these responsibilities. Sharing the evidence behind initiatives such as ERM energizes frontline staff and empowers them to take a leadership role in improving patient outcomes. This improvement project was only possible with an invested Unit Practice Council of bedside nurses. These individuals created and regularly updated the visual metric board and shared admission assessment metrics with their colleagues during huddles and staff meetings.

Limitations

In April 2024, the project coordinator reviewed admission assessments daily to identify barriers and assist clinical staff in completing the MST and PLOF. The sustainment plan for this project included ANMs taking over this role beginning May 1, 2024. However, these chart reviews and discussions did not occur due to conflicting priorities. MST and PLOF completion rates fell below the project goal of 90% for May 2024. Sustainable quality improvement requires organizations to maintain clear priorities and

invest in clinical staff education on the 'why' behind chosen priorities. When priorities shift quickly, momentum becomes challenging to maintain.

Another limitation of this project is that while process measures can be calculated for the specific microsystem, outcome measures reflect the entire facility. As a result, it is challenging to determine this project's role in changing discharge disposition and readmission rates. The project's three interventions should be spread across the entire facility to address this limitation.

Spread

With a precise aim of increasing admission assessments to greater than 90% hospital-wide and using the Institute of Healthcare Improvement's (2006) Model for Spread, additional units have already begun to emulate the initial microsystem. Excitement is building as Unit Practice Council Chairs share this project with clinical leaders from other units, and a spread team is forming. The microsystem's sister unit has purchased a whiteboard and is meeting to discuss the metrics they want to highlight. Communication among members of this spread team occurs at the monthly 'Voice of Nursing' day, where Unit Practice Council Chairs share their work. The hospital-wide spread of this project's interventions could deepen the bedside staff's commitment and ability to decrease HAD and improve patient discharge outcomes.

Conclusions

This quality improvement project underscores the critical value of targeted interventions in enhancing patient outcomes, particularly in reducing HAD. Upon admission, the successful increase in nutrition and physical function assessments demonstrates the positive impact of nurse engagement, performance sharing, and audits to identify and remove barriers to nurse behavior. The positive direction of discharge-to-home rates further validates the project's effectiveness. Results align with the findings of Gramlich et al. (2017), which emphasize the importance of communication, teamwork, and feedback in influencing nursing actions. For sustainable success, the role of ANMs in ongoing barrier

assessment and support is crucial. Despite a temporary decline in assessment completion rates when this role was not maintained, the initial success illustrates that with consistent leadership involvement, the improvements can be sustained and even enhanced over time.

This project provides a replicable framework for improvement for other healthcare facilities facing similar challenges. The emphasis on nurse empowerment, effective communication, and leadership support can be adapted to various contexts to achieve similar improvements in patient care. Additionally, integrating real-time feedback and visual metrics can enhance staff engagement and accountability, leading to sustained quality improvements. This quality improvement project supports the existing literature and provides a robust, actionable framework for enhancing patient care. Healthcare systems can significantly improve patient outcomes, safety, and overall population health by prioritizing nurse empowerment and focusing on individualized patient care.

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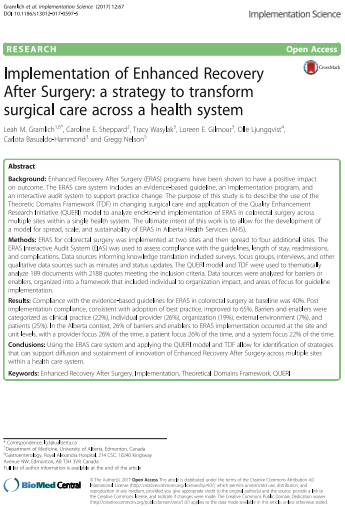
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Appendix A





Evaluation Table

PICOT Question: In (P) medical-surgical nurses does (I) audit feedback, data wall, and purpose education, compared with (C) no intervention increase (O) admission assessment of baseline nutrition and physical functional?				
Study	Design	Sample	Applicability to Practice	JHNEBP Appraisal Rating
<p>Chodos, A. H., Kushel, M. B., Greysen, S. R., Guzman, D., Kessell, E. R., Sarkar, U., Goldman, L. E., Critchfield, J. M., & Pierluissi, E. (2015). Hospitalization-associated disability in adults admitted to a safety-net hospital. <i>Journal of General Internal Medicine, 30</i>(12), 1765–1772. https://doi.org/10.1007/s11606-015-3395-2</p>  <p>Abstract: Little is known about hospitalization-associated disability (HAD) in older adults who receive care in safety-net hospitals. OBJECTIVE: To describe HAD and to examine the association with age in adults aged 55 and older hospitalized in a safety-net hospital. DESIGN: Secondary post hoc analysis of a prospective cohort from a discharge intervention trial. SETTING: Medicine, orthopedic, and neurology inpatient services of San Francisco General Hospital, a safety-net hospital. PARTICIPANTS: A total of 583 participants 55 and older who spoke English, Spanish, or Chinese. We determined the incidence of HAD 30 days post-hospitalization and the rate HAD by age group. MEASUREMENTS AND MAIN RESULTS: The outcome measure was death or HAD at 30 days after hospital discharge. HAD is defined as a new or additional disability to one or more activities of daily living (ADL) that is present at hospital discharge and persists for 30 days. Functional status at baseline 12 weeks prior to admission and 30 days post-discharge was assessed by self-report of ADL function. RESULTS: Many participants (75.3%) were functionally independent at baseline. By age group, HAD occurred as follows: 27.4% in ages 55–59, 22.2% in ages 60–64, 17.4% in ages 65–69, 26.3% in ages 70–74, and 61.7% in ages 80 or older. Compared to the youngest group, only the adjusted OR for HAD in adults over 80 was significant, at 2.45 (95% CI 1.17, 5.12). CONCLUSIONS: In adults at a safety-net hospital, HAD occurred in similar proportions among adults aged 55–59 and those aged 70–79, and was highest in the oldest adults, aged ≥ 80. In safety-net hospitals, interventions to reduce HAD among patients 70 years and older should consider expanding age criteria to adults as young as 55.</p> <p>KEY WORDS: Hospitalization; Hospitalization-associated disability; Activities of daily living; Functional status; Safety-net hospitals.</p> <p>INTRODUCTION Hospitalization-associated disability (HAD) refers to new or additional disability in activities of daily living (ADL) at hospital discharge compared to preadmission baseline, and occurs in one-third of hospitalized adults over the age of 70.¹ Among older adults, ADL disability threatens independence and quality of life and is predictive of higher resource utilization and death.^{2–4} Since half of all nonacute ADL disability is attributable to hospitalization, HAD has important implications for patients, caregivers, and policymakers.⁵ However, the prevalence of HAD in adults seen in safety-net settings (hospitals or health care systems that provide a significant level of care to low-income, uninsured, and vulnerable populations) is unknown.⁶ Furthermore, even at ages younger than 70, adults in safety-net care settings have a concentration of risk factors for HAD, including minority race status, baseline functional impairment, low socioeconomic status, substance use, and homelessness.^{7–10} Understanding the prevalence of and the risk factors for HAD in persons as young as 55 is important, as hospitals could target areas of high prevalence for interventions to reduce functional decline in older adults, thus benefiting a greater number of people at risk.¹¹ In order to understand the prevalence of HAD in a safety-net setting, we describe HAD in a cohort of racially and ethnically diverse adults aged 55 and older who were hospitalized in an urban safety-net facility. We describe disability at baseline, admission, and 30 days postdischarge. Because disability is strongly associated with age, we further examine the relationship between age and HAD. We hypothesize that HAD is highly prevalent in adults aged 55–59 in this cohort.</p>	<p>Secondary post hoc analysis of a prospective cohort intervention trial</p>	<p>583 patients 55 and older admitted to San Francisco General Hospital between 2010 and 2012</p>	<p>One third of participants developed hospitalization-associated disabilities (HAD). Individuals who were already dependent in any baseline activity of daily living (ADL) were more likely to experience decline than those who were functionally independent.</p> <p>Supports use of admission screening in combating HAD.</p> <p>Strengths: Large sample size, diverse population, and ascertainment of outcomes.</p> <p>Limitations: Study is dated and uses an urban population in safety-net facility</p>	<p>III A</p>

Study	Design	Sample	Applicability to Practice	JHNEBP Appraisal Rating
<p>Covinsky, K. E., Pierluissi, E., & Johnston, C. B. (2011). Hospitalization-associated disability: “she was probably able to ambulate, but I’m not sure.” <i>JAMA</i>, 306(16). https://doi.org/10.1001/jama.2011.1556</p> <hr/> <p>CARE OF THE AGING PATIENT: FROM EVIDENCE TO ACTION CLINICIAN'S CORNER</p> <p>Hospitalization-Associated Disability “She Was Probably Able to Ambulate, but I’m Not Sure”</p> <p><small>Kenneth E. Covinsky, MD, MPH Edgar Pierluissi, MD C. Bruce Johnston, MD, MPH</small></p> <p>THE PATIENT'S STORY Ms N is a 70-year-old woman admitted to the medical service of an urban public hospital. She reported experiencing left labial pain and hematuria for 3 days. In the emergency department, she was in acute renal failure (serum creatinine, 10.8 mg/dL; potassium, 8.3 mEq/L). She had a long history of type 2 diabetes mellitus, hypertension, chronic kidney disease (baseline creatinine, 3.5 mg/dL), coronary artery disease, peripheral vascular disease, and diabetic neuropathy.</p> <p>Ms N emigrated from the Philippines in 1997 to join her husband, from whom she had since separated. Although her primary language was Tagalog, all communication with her during the hospitalization was in English. Her monthly income was \$300 per month from the US Social Security Administration. One of her 6 children lives locally. Prior to admission, Ms N reported that she lived independently as a guest in a friend's home and was able to care for herself until 3 days before admission.</p> <p>On admission, Ms N appeared frail, shivering with a temperature of 98.2° F (36.8° C), systolic and diastolic blood pressure of 139/42 mm Hg, pulse rate of 55 beats per minute, and a respiratory rate of 22 breaths per minute. There was a 3-cm mass in the left labium majus that was tender and indurated. She was alert and oriented to person, place, and date and walked with a normal gait. In addition to renal failure, laboratory studies were notable for hematocrit at 10.0% and her albumin level was 3.2 g/dL.</p> <p>On hospital day 1, hemodialysis was started and she received empirical treatment for urinary tract infection. On day 3, a genitology consultant noted a fluctuant, spontaneously draining 4 × 3 cm labial lesion that was incised and</p> <p>In older patients, acute medical illness that requires hospitalization is a sentinel event that often precipitates disability. This results in the subsequent inability to live independently and complete basic activities of daily living (ADLs). This hospitalization-associated disability occurs in approximately one-third of patients older than 70 years of age and may be triggered even when the illness that necessitated the hospitalization is successfully treated. In this article, we describe risk factors and risk stratification tools that identify older adults at highest risk of hospitalization-associated disability. We describe hospital processes that may promote hospitalization-associated disability and models of care that have been developed to prevent it. Since recognition of functional status problems is an essential prerequisite to preventing and managing disability, we also describe a pragmatic approach toward functional status assessment in the hospital focused on evaluation of ADLs, mobility, and cognition. Based on studies of acute geriatric units, we describe interventions hospitals and clinicians can consider to prevent hospitalization-associated disability in patients. Finally, we describe approaches clinicians can implement to improve the quality of life of older adults who develop hospitalization-associated disability and that of their caregivers.</p> <p><small>JAMA. 2011;306(16):1762-1770. www.jama.com</small></p> <p><small>Author Affiliations: Department of Medicine and Division of Geriatrics, University of California, San Francisco (Dr. Covinsky, Pierluissi, and Johnston), Department of Medicine and Division of Medical Medicine, San Francisco General Hospital (Dr. Pierluissi), and Section of Geriatrics and Palliative Care, San Francisco Veterans Affairs Medical Center (Dr. Johnston), San Francisco, California.</small></p> <p><small>Corresponding Author: Kenneth E. Covinsky, MD, MPH, UCSF Division of Geriatrics, 400 Parnassus Ave, Box 0810, San Francisco, CA 94143 (kenneth.covinsky@ucsf.edu).</small></p> <p><small>Call for Reprint Requests: The text of the original article has been made available to contribute a patient story to JGIM. A future article, information and submission instructions are available at http://jgim.org/submit.</small></p> <p><small>Care of the Aging Patient: From Evidence to Action is produced and edited at the University of California, San Francisco, Department of Geriatrics, with Louise Walker, MD, Louise Antonson, MD, MPA, and Arnie Chang, MD, Amy L. Morkowitz, JD, as managing editors.</small></p> <p><small>Care of the Aging Patient Section Editor: Margaret A. Walker, MD, Deputy Editor and Care of the Aging Editor.</small></p> <p><small>© 2011 American Medical Association. All rights reserved.</small></p> <p><small>1762 JAMA, October 26, 2011 • Vol 306, No. 16</small></p> <p><small>Downloaded from jama.ama-assn.org by SCEL C - University of San Francisco user on 02/13/2024</small></p>	<p>Literature Review</p>	<p>None</p>	<p>Authors develop a comprehensive risk stratification tool for Hospitalization-Associated Disability (HAD) with recommendations for practice. Basis for Kaiser Permanente’s Enhanced Recovery Medicine program.</p> <p>Strengths: Clear, specific, and practical recommendations.</p> <p>Limitations: Sources are dated (1990-2011)</p>	<p>V B</p>

Study	Design	Sample	Applicability to Practice	JHNEBP Appraisal Rating
<p>Gramlich, L. M., Sheppard, C. E., Wasylak, T., Gilmour, L. E., Ljungqvist, O., Basualdo-Hammond, C., & Nelson, G. (2017). Implementation of enhanced recovery after surgery: a strategy to transform surgical care across a health system. <i>Implementation Science</i>, 12(1), 1–17.</p> <p>https://doi.org/10.1186/s13012-017-0597-5</p> 	<p>Qualitative Study</p>	<p>189 documents met inclusion criteria and provided a total of 2188 quotes.</p>	<p>Develops a model for spread, scale, and sustainment of ERAS protocol which includes identification of champions, best practice communication strategies, and audit feedback.</p> <p>Strengths: Clearly identifies enablers and barriers to practice change</p> <p>Limitations: Most data posted by administrators versus clinicians. Vague methods and design.</p>	<p>III B</p>

Study	Design	Sample	Applicability to Practice	JHNEBP Appraisal Rating
<p>Loyd, C., Markland, A. D., Zhang, Y., Fowler, M., Harper, S., Wright, N. C., Carter, C. S., Buford, T. W., Smith, C. H., Kennedy, R., & Brown, C. J. (2020). Prevalence of hospital-associated disability in older adults: A meta-analysis. <i>Journal of the American Medical Directors Association, 21</i>(4), 455-461.e5. https://doi.org/10.1016/j.jamda.2019.09.015</p> <div data-bbox="233 818 569 1292" style="border: 1px solid black; padding: 5px;"> <p>HHS Public Access <small>Author manuscript J Am Med Dir Assoc. Author manuscript; available in PMC 2020 September 03. Published in final edited form as: J Am Med Dir Assoc. 2020 April; 21(4): 455-461.e5. doi:10.1016/j.jamda.2019.09.015.</small></p> <p>Prevalence of Hospital-Associated Disability in Older Adults: A Meta-Analysis</p> <p>Christine Loyd, PhD^{1,2}, Alysne D. Markland, DO, MSc^{1,3}, Yue Zhang, PhD¹, Mackenzie Fowler, MPH¹, Sara Kasper, PhD¹, Nicole C. Wright, PhD, MPH¹, Christy S. Carter, PhD¹, Thomas W. Buford, PhD¹, Catherine K. Smith, MS, MPH¹, Richard Kennedy, MD, PhD^{1,2}, Cynthia J. Brown, MD, MSPH^{1,2}</p> <p>¹University of Alabama at Birmingham, Department of Medicine, Division of Gerontology, Geriatrics, and Palliative Care, UAB School of Medicine, Birmingham, AL ²Birmingham/Veterans Affairs Geriatric Research, Education, and Clinical Center, Birmingham Veterans Affairs Medical Center, Birmingham, Alabama ³University of Alabama at Birmingham, Department of Epidemiology, Birmingham, AL ⁴University of Alabama at Birmingham, Lister Hill Library of the Health Sciences, Birmingham, AL</p> <p>Abstract</p> <p>Objectives: Hospital-associated disability (HAD), defined as loss of independence in activities of daily living (ADL) following acute hospitalization, is observed among older adults. The study objective is to determine overall prevalence of HAD among older adults hospitalized in acute care, and to assess the impact of study initiation year on mediations of pre-valence.</p> <p>Design: Meta-analysis of data collected from randomized trials, open or experimental and prospective cohort studies. English-language searches to identify included studies were completed February 2018 and updated May 2018 of electronic databases and reference lists of studies and reviews. Included studies were human subjects investigations that measured ADL, ≥ 2 time points before/after and after hospitalization and reported pre-valence of ADL decline among older adults.</p> <p>Setting: Acute care hospital units.</p> <p>Participants: Adults aged ≥ 65 years hospitalized in medical-surgical acute care. Total sample size across all included studies was 7,375.</p> <p>Methods: Independence in ADL was assessed using the Katz Index of Independence in Activities of Daily Living and Barthel Index of Independence in Activities of Daily Living.</p> <p>Results: Random effects meta-analysis across included studies identified combined prevalence of HAD as 30% (95% CI: 24%, 35%, p < 0.0001). The effect of study initiation year on prevalence</p> <p><small>Please address correspondence to: Alysne D. Markland, DO, MSc, Associate Professor of Medicine, Division of Gerontology, Geriatrics, and Palliative Care, University of Alabama at Birmingham, GR627 11-02, 160 7th Avenue South, Birmingham, AL, 35293. E-mail: alysm@uab.edu. NWC, CSC, TWB, CSH, RKB, and CJB have no potential conflicts of interest to declare.</small></p> </div>	<p>Meta-Analysis of data from randomized trials, quasi-experimental and prospective cohort studies</p>	<p>7,375 hospitalized adults 65 years or older</p>	<p>Occurrence of HAD in hospitalized older adults has remained 30% despite shortened length of stay.</p> <p>Recommends admission and post discharge assessment of ADLs.</p> <p>Strengths: Large number of studies with wide geography and populations. Precision study selection, data extraction, and quality assessment.</p> <p>Limitations: All diagnoses included despite some (ex. hip fracture or stroke) leading to functional dependence that would be attributed to HAD</p>	<p>III A</p>

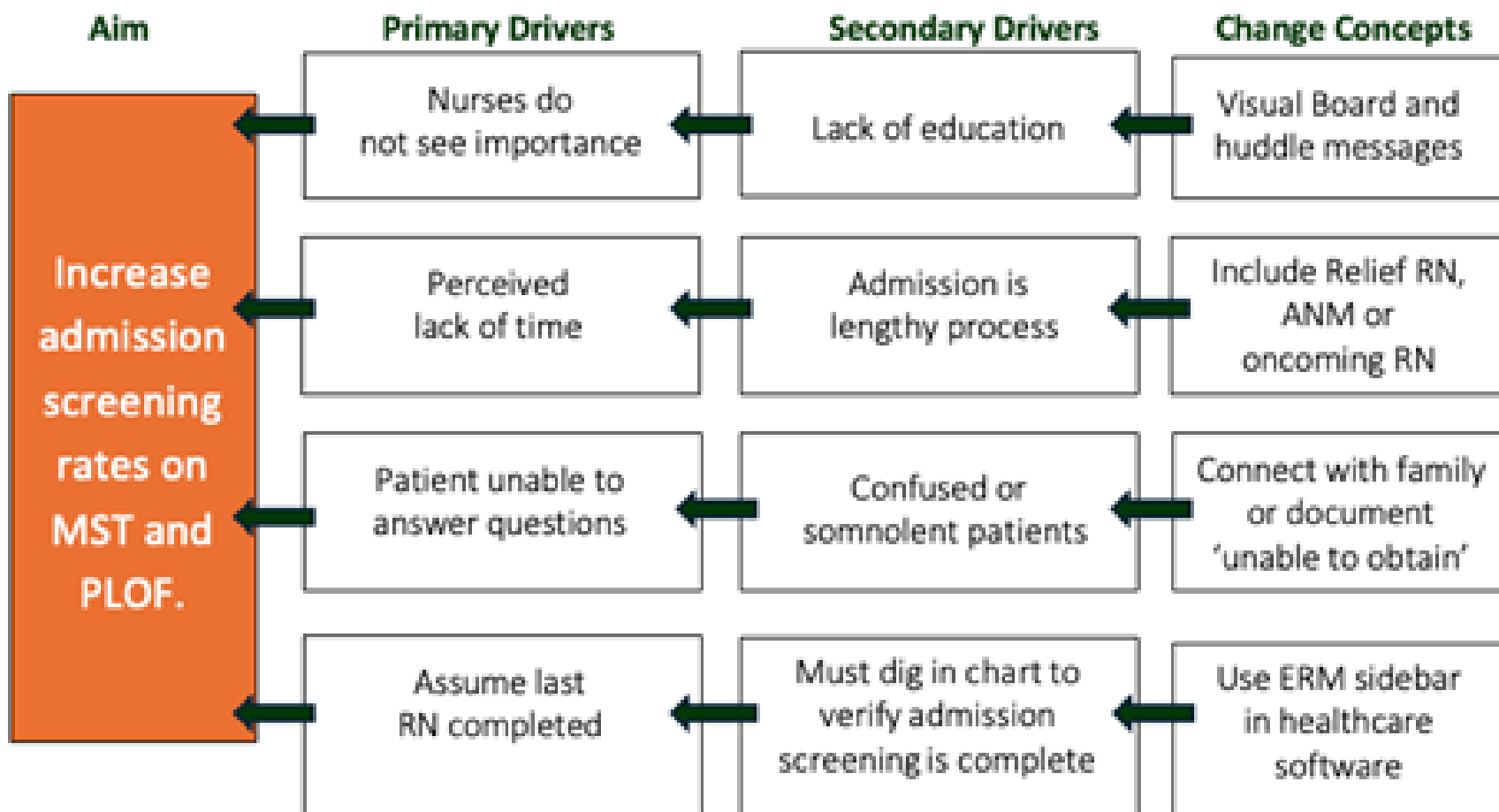
Study	Design	Sample	Applicability to Practice	JHNEBP Appraisal Rating
<p>Urquiza, M., Fernandez, N., Arrinda, I., Sierra, I., Irazusta, J., & Rodriguez Larrad, A. (2020). Nutritional status is associated with function, physical performance and falls in older adults admitted to geriatric rehabilitation: a retrospective cohort study. <i>Nutrients</i>, 12(9), 2855. https://doi.org/10.3390/nu12092855</p>   <p>Article Nutritional Status Is Associated with Function, Physical Performance and Falls in Older Adults Admitted to Geriatric Rehabilitation: A Retrospective Cohort Study</p> <p>Miriam Urquiza ¹, Naitza Fernandez ², Ismene Arrinda ², Izati Sierra ², Jon Irazusta ¹ and Ana Rodriguez Larrad ¹ </p> <p>¹ Department of Physiology, University of the Basque Country, UPV/EHU, 48940 Leioa, Spain; jon.irazusta@ehu.es (J.I.); ana.rodriguez@ehu.es (A.R.L.) ² Geriatric Department, Iquiza Services Suroo Sanitarios, Grupo IMQ, 48011 Bilbao, Spain; ifernandez@grupoes (N.F.); larrad@grupoes (G.A.); ismene@grupoes (I.S.) Correspondence: miriam.urquiza@ehu.es</p> <p>Received: 19 August 2020; Accepted: 16 September 2020; Published: 18 September 2020 </p> <p>Abstract: Nutritional status is relevant to functional recovery in patients after an acute process requiring rehabilitation. Nevertheless, little is known about the impact of malnutrition on geriatric rehabilitation. This study aimed to determine the association between nutritional status at admission and the evolution of functional and physical outcomes, as well as the capability of nutritional status to identify fallers among patients admitted to geriatric rehabilitation for different reasons. This was a retrospective cohort study of 375 patients. Data collected included age, gender, diagnosis at admission, comorbidities, cognitive and nutritional status, functional and physical measurements, length of stay, mortality and falls. Orthogeriatric patients with worse nutritional status according to the Mini Nutritional Assessment-Short Form (MNA-SF) had a significantly lower Barthel Index at admission and discharge with worse functional gain and poorer outcomes in the Short Physical Performance Battery (SPPB). However, in hospital-deconditioned patients, the MNA-SF score was not significantly associated with functional and physical recovery. Poor nutritional status at admission increased the risk of experiencing at least one fall during rehabilitation in orthogeriatric patients. However, hospital-deconditioned patients who fell had better SPPB scores than those who did not fall. Our results demonstrate the importance of nutritional status in the clinical evolution of orthogeriatric patients throughout the rehabilitation process.</p> <p>Keywords: nutritional status; geriatric rehabilitation; functional status; physical performance; falls</p> <p>1. Introduction</p> <p>In older adults, hospitalization due to an acute illness is often associated with increased functional and cognitive decline [1,2]. Approximately 35% of older patients are discharged with worse performance in activities of daily living than before being hospitalized [3]. Consequently, after hospitalization, some older adults are temporarily admitted to an in-patient geriatric rehabilitation ward with the aim of recovering their functional and physical status so that they can return to their homes.</p> <p>Geriatric rehabilitation, defined by the European Consensus on Geriatric Rehabilitation, provides temporal integral care for older patients following hospitalization [4]. Although there are large differences between countries regarding the structure and delivery of geriatric rehabilitation, care is usually administered by a multidisciplinary team consisting of at least a physician trained in geriatric rehabilitation, a physiotherapist and a nurse [4]. Patients admitted to these units include orthogeriatric</p> <p><small>Nutrients 2020, 12, 2855; doi:10.3390/nu12092855</small> www.mdpi.com/journal/nutrients</p>	<p>Retrospective Cohort Study</p>	<p>375 admitted to an inpatient geriatric ward in Spain</p>	<p>Baseline malnutrition is associated with worsening physical outcome. Supports the use of malnutrition screening on admission to identify patients at risk for HAD.</p> <p>Strengths: Clear and precise design and results</p> <p>Limitations: Used abbreviated and outdated malnutrition screening tool</p>	<p>III B</p>

Appendix B
Gap Analysis

<p><u>Aim Statement:</u> To increase nurse screening rates on the malnutrition screening tool (MST) and the patient-reported level of function (PLOF) tool at admission from 85% to >90% by June 2024 by medical-surgical (M/S) nurses.</p>		
Desired State	Current State	Action Steps
MST and PLOF assessment within 24 hours for > 90% of patients admitted to a medical surgical unit.	MST and PLOF assessment within 24 hours for > 85% of patients admitted to a medical surgical unit.	Gain approval from manager, director, and CNO.
		Share EBP behind Enhanced Recovery Medicine (ERM) pathway with medical-surgical (M/S) unit staff at huddles and staff meeting.
		Recruit ERM Team from clinical nurses, quality nurse consultant, clinical nurse educator and leadership.
		Identify unit ERM Champions
		Develop ERM data wall on M/S unit
		Share data wall information at huddles and staff meeting
		Begin daily audits
		Celebrate project successes
		Increase scope of project to other ERM metrics and units

Appendix C

Driver Diagram



Appendix D

Gantt Chart		2024											
Deliverable	Responsible for Deliverable	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
		Planning											
Literature Review of Nurse Engagement	Elizabeth White	█											
Literature Review of EBP in UBCs	Elizabeth White	█											
Gap & SWOT Analysis	Elizabeth White	█											
AIM Statement	Elizabeth White	█											
Budget & Cost Benefit Analysis	Elizabeth White		█										
Business Plan	Elizabeth White		█										
Upper Leadership Support	Unit Manager		█										
Implementation													
Visual Board Creation	Elizabeth White		█										
Identification of clinical ERM leaders	Elizabeth White		█										
Training of clinical leaders	Elizabeth White			█									
Education on ERM to manager	Elizabeth White			█									
Clinical leaders update data wall & huddle weekly	Clinical ERM leaders				█								
Daily chart audit with feedback and barrier identification	Elizabeth White				█								
Evaluate Effectiveness													
Discussions with Staff on Effectiveness of Interventions	Elizabeth White					█							
Discussions with leadership on barriers and successes	Elizabeth White					█							
Sustainability Plan													
Spot audit of new admits	ANMs						█	█	█	█	█	█	█
Weekly update of visual board with metrics	Clinical ERM leaders						█	█	█	█	█	█	█
ERM as standing topic at UPC meeting	Clinical ERM leaders						█	█	█	█	█	█	█

Appendix E

Strength, Weakness, Opportunity, and Threat (SWOT) Analysis

	Favorable/Helpful	Unfavorable/Harmful
Internal (attributes of the organization)	<p>Strengths</p> <ul style="list-style-type: none"> • New, energetic adult services director • Newly formed, enthusiastic unit practice council • No other data walls on unit • Unit pride in exceptional patient care • Interest in Evidence-Based Practice • 5 to 1 ration = more aide hours 	<p>Weaknesses</p> <ul style="list-style-type: none"> • Unit culture is lackadaisical. • Poor communication system in place (staff don't read email, flyer fatigue) • Staff and leader exhausted by 'constantly changing priorities' – makes buy-in difficult • Patient population: Unit reputation as 'The skilled nursing facility of the hospital'
External (attributes of the organization)	<p>Opportunities</p> <ul style="list-style-type: none"> • Organization striving for Magnet status. • Spread to other units • Increased staff engagement • Increased patient satisfaction • Improved outcomes 	<p>Threats</p> <ul style="list-style-type: none"> • Organization's competing priorities • Top-down leadership approach • Organizational focus on throughput, staff have less time to focus on admissions • Culture – staff and unit leaders are not accustomed to reviewing quality metrics

Appendix F

Communication Plan

Communication Objectives:

- Increase awareness about the importance of admission assessments.
- Foster staff engagement.
- Promote a culture of continuous improvement in patient care.

Key Message:

- The benefits of admission assessments in preventing hospitalization-associated disabilities

Stakeholders:

- Nursing Staff
- Unit Council Members
- Unit & Hospital Leaders
- Patients

Methods and Strategies

Clinical Nurses:

Staff Meetings: performance metrics compared to historical and regional assessment rates.

Data Wall: updated weekly by unit champions.

Direct Communication: unit champions and leadership provide real-time updates.

Hospital Administrators:

Email and Direct Communication: Project successes shared as they occur, typically monthly.

Patients:

Data Wall: Patients gain insights about hospitalization-associated disabilities (HAD) and their role in maintaining independence.

Conversations with Nurses: Nurses provide information to patients about HAD and the significance of admission assessments.

Appendix G
Informational Flyer

Importance of Admission Assessments

Why Enhanced Recovery Medicine (ERM)?

- **1/3 of patients over 65** lose independence during hospitalization.
- **Less than half recover** to pre-admission levels within a year.

What is ERM?

Move - Eat - Sleep - Remove Tethers - Prevent Delirium

Admission Assessments are Crucial

- **Previous Level of Function:** Aim to maintain activity levels to prevent functional decline.

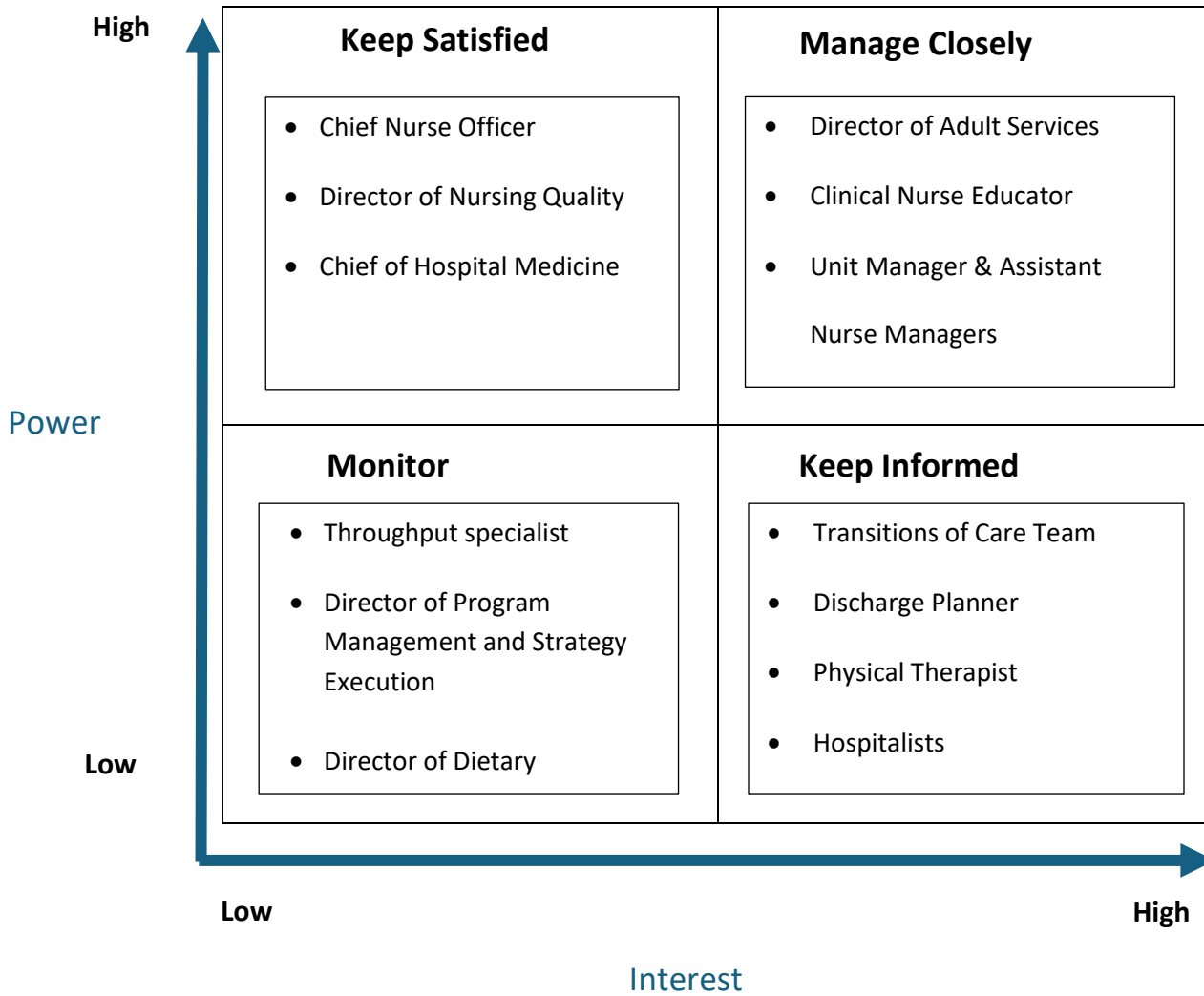
PLOF - Patient Reported Level of Function (PF5) -	
Responses provided by?	Patient
Turn from side to side in bed?	Without any diffi...
Sit on the edge of a bed?	With a little diffi...
Get out of bed into a chair?	With a little diffi...
Walk around the room?	With some diffic...
Walk a block (about 100 yards/100 m...	With much diffic...
T-Score Total (Patient)	32
Level of Function (Patient)	Moderate Dysfu...
<input checked="" type="checkbox"/> Assistive Equipment Currently Us...	yes
Equipment Currently Used at Home	walker, rolling

- **Malnutrition Screening:** Ensure patients are well-nourished to support recovery.

Malnutrition Screening Tool	
Have you recently lost weight without...	Unsure
Have you been eating poorly becaus...	No
MST Score	2

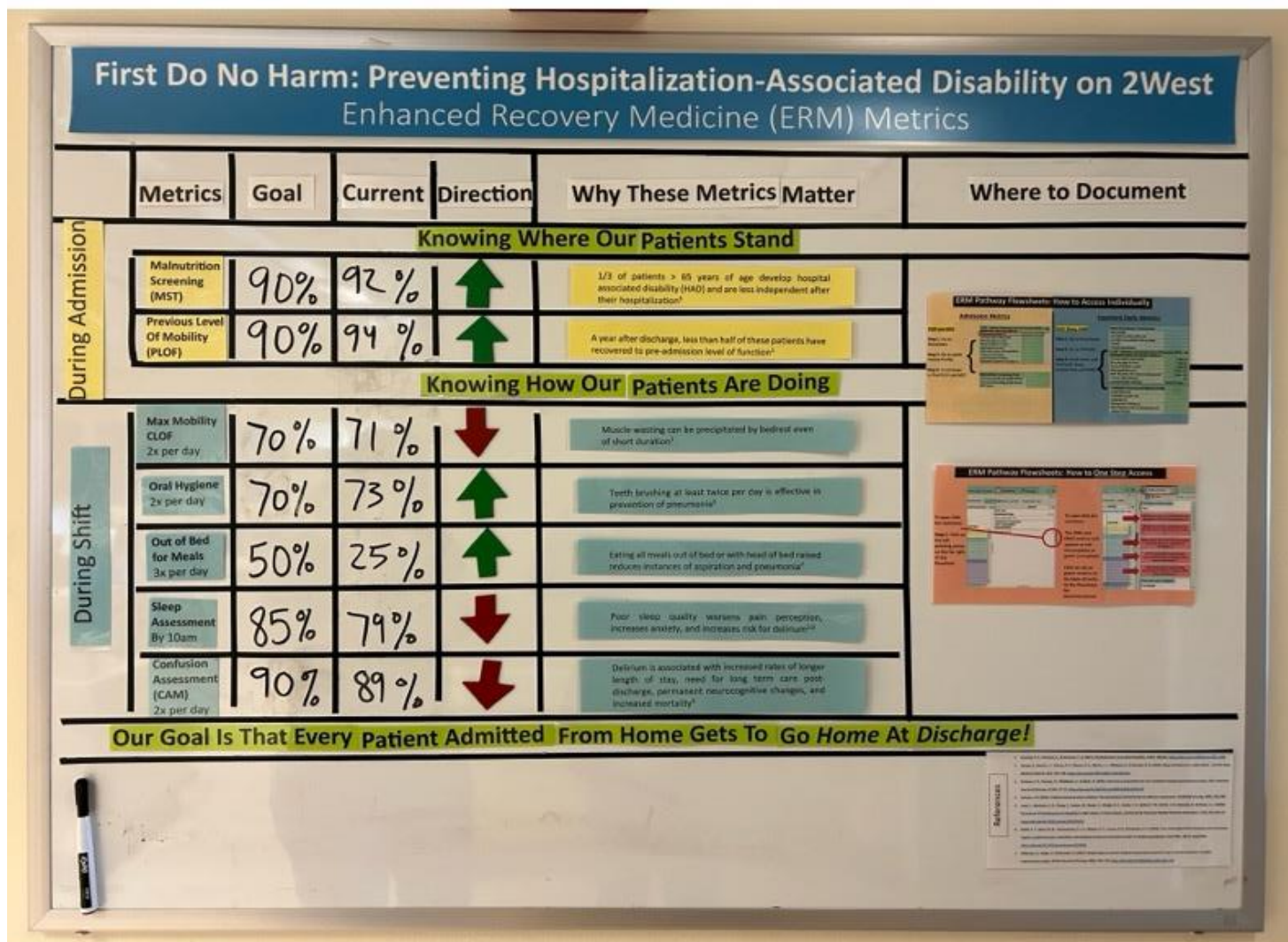
Appendix H

Power Interest Grid



Appendix I

ERM Data Wall /Visual Metric Display



Appendix J

Materials for Implementation

Data Wall

- Four by six-foot whiteboard mounted on microsystem wall
- Thin electrical tape for grid lines
- Printed and laminated text on colored paper
- Red and green magnetic arrows
- Banner professional printed
- Dry Erase Markers

Appendix K

Budget

Budget: Decreasing HAD through Admission Screening					
Implementation Cost					
Payroll Expenses			Hours	Hourly Rate w/ Benefits	Cost
<i>Benefits at 40%</i>					
Quality Nurse Consultant					
		Identification and training of Unit Champions	6	\$125	\$751
		Creation of Data Wall	15	\$125	\$1,877
		Monthly Staff Meeting prep with Unit Practice Champions	1	\$125	\$125
		Daily audit of admissions and feedback to primary RN (10min/day)	5	\$143	\$714
		Total			\$2,754
Unit Champions (Hourly at \$98.45/hour)					
		Training of Unit Champions (2 RNs)	2	\$138	\$276
		Weekly Updating of Data Wall (15min/week)	1	\$138	\$138
		Monthly Staff meeting prep and presentation	2	\$138	\$276
		Total			\$689
Total Payroll Cost for Implementation (1 Month)					\$3,442
Materials for Data Wall					
		4'x6' White Board, grid lines, magnetic arrows, dry erase markers, laminated text			\$193
Total Implementation Cost					\$3,635
Annual Sustainment Costs					
		Monthly Staff Meeting presentation by Unit Champions	1	\$138	\$138
		Random admission audits and feedback to primary RN (10min/week)	9	\$143	\$14,851
Total Annual Sustainment Cost					\$14,989

Appendix L

Cost Benefit Analysis

Cost Benefit Analysis: Decreasing HAD through Admission Screening			
Cost Avoidance			
Decreased 7-Day Readmission Rates			
	Average Cost of Readmission		\$16,300
	Average Number of Patients Cared for in Microsystem Annually		1,250
	Current 7 Day Readmission Rate		8.4 in 100
	Current Cost of Readmissions in Microsystem		\$1,711,500
	Benefit: 5% decrease from current (0.4 in 100 less)		\$81,500
Light Green Benefits:			
	Increased rates of discharge to home (versus skilled nursing)		
	Positive patient experiences		
	Improved Nursing Engagement		
	Total Benefit (if 1% decrease in 7-Day Readmission Rates)		\$81,500
	Total Implementation Cost		\$4,349
	Total Annual Sustainment Cost		\$14,989
	Annual Cost Benefit Analysis (Total Benefit - Total Cost)		\$62,162
References			
	Jiang, J., & Hensche, M. (2032, September). Characteristics of 30-day all-cause hospital readmissions.		
	Agency for Healthcare Research and Quality. https://hcup-us.ahrq.gov/reports/statbriefs/sb304-readmissions-2016-2020 .		

Appendix M

Project Charter

Title: Improving Malnutrition and Mobility Screening on Admission

Global Aim: Prevent Hospitalization-Associated Disability (HAD) in adult patients.

Specific Aim: To increase nurse screening rates on the malnutrition screening tool (MST) and the patient-reported level of function (PLOF) tool at admission from 85% to >90% by May 2024 by medical-surgical nurses.

Background: Hospital Acquired Disability (HAD) is defined as “new or additional disabilities in activities of daily living (ADL) at hospital discharge compared to preadmission baseline.” One-third of adults over 65 years of age incur HAD and are less able to care for themselves (Chodos et al., 2015; Loyd et al., 2020). These patients are at an increased risk of requiring rehabilitation, readmission, and death (Chodos et al., 2015; Covinsky et al., 2011; Loyd et al., 2020). In 2022, Kaiser Permanente developed Enhanced Recovery Medicine (ERM) to reduce incidences of HAD. ERM is patient-centered and focuses not only on the medical issue that brought the patient to the hospital but on their entire body and mind. Assessment of nutrition and functional status before admission is critical to ERM because this screening prevents deconditioning and muscle wasting (Diep-Pham et al., 2023; Swoboda et al., 2020; Urquiza et al., 2020). Decreasing the incidence of HAD prevents readmissions, enables patients to return home after hospitalization, saves hospitals money, and increases patient satisfaction (Chodos et al., 2015; Covinsky et al., 2011; Loyd et al., 2020, William Boulding et al., 2011).

Sponsors

Chief Nursing Officer
Quality Nurse Leader
Director of Adult Services

Goals: To identify patients at risk for developing HAD early in their hospitalization so that care can be personalized and to prevent any decline in independence during hospitalization. Identification of unit champions, communication, audit feedback, and teamwork are components of a successful implementation (Gramlich et al., 2017; Martin et al., 2018).

Screening rates will be increased through:

1. Visual board to display the ERM purpose, assessment rate goal, and current rate screening completions
2. Identification and education of unit champions to improve peer-to-peer education and collaboration
3. Audit feedback in real-time assistant nurse managers

Microsystem: A 23-bed adult medical-surgical inpatient unit in a northern California medical center, it ranked last in MST and PLOF assessment at admission.

Measures

Measure	Data Source	Target
Outcome		
% 7-Day Readmission Rate	TPMG Consulting Services, ERM Daily Report	< 8.0%
% Patients discharged home	TPMG Consulting Services, ERM Daily Report	> 82.4%
Process		
% of admission MST completed	TPMG Consulting Services, ERM Daily Report	>90%
% of admission PLOF completed	TPMG Consulting Services, ERM Daily Report	>90%
Balancing		
No increase in incremental overtime	Staffing Payroll Report	

Team Members

Unit Practice Council Chairs
Staff nurse Champions
Nurse Manager
Quality Nurse Consultant
Assistant Nurse Managers
Clinical Nurse Specialist – Education & Training

Measurement Strategy

Background: This project aims to decrease hospitalization-associated disability (HAD) in adult patients by increasing admission assessments of physical function and nutrition at baseline so that providers can personalize care.

Population Criteria: Adult patients admitted to one medical surgical floor.

Data Collection Method: TPMG Consulting Services collects admission screening, 7-day readmission, and discharge to home data in the ERM daily report.

Data Definitions

<p>Level of Function (LOF)</p>	<p>Rating from 12-55 on patient’s ability to mobilize independently.</p> <p>12-16=Active Range of Motion</p> <p>17-19 = Sitting at Edge of bed</p> <p>20-22 = Standing/Chair for meals</p> <p>23-26 = Ambulating 1-20ft</p> <p>27-37 = Ambulating 21-50ft</p> <p>38-55 = walking greater than 100’</p>
<p>Malnutrition Screening Tool (MST)</p>	<p>Rating of # to # based on # of questions to gauge a patients’ pre-hospital nutrition status X = malnourished and y = well nourished</p>
<p>Patient-reported Level of Function (PLOF)</p>	<p>LOF prior to hospitalization reported by the patient or caregiver</p>
<p>7-day Readmission Rate</p>	<p>% of discharged patients that are readmitted to the hospital within 7-days</p>
<p>Discharge to Home</p>	<p>% of patients that are discharged to their home versus requiring rehabilitative care</p>

Measure Description

Measure	Measure Definition	Data Collection source	Goal
MST is completed within 24 hours of admission	N = # of patients with completed MST D = # of patients admitted	TPMG Consulting Services, ERM Daily Report	>90%
PLOF is completed within 24 hours of admission	N = # of patients with completed PLOF D = # of patients admitted	TPMG Consulting Services, ERM Daily Report	>90%

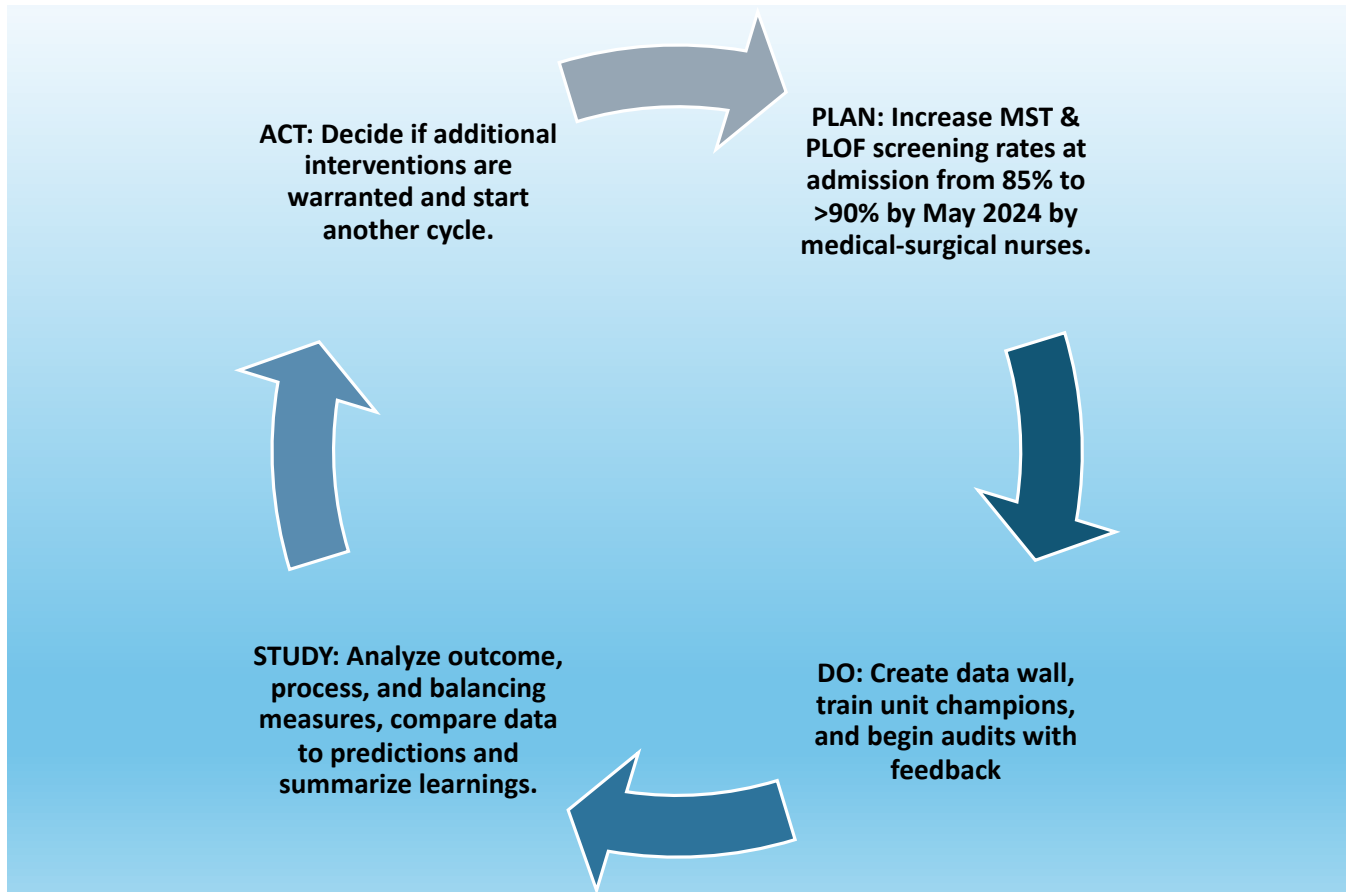
Changes to Test

Interventions:

- 1) Visual Board will display:
 - a. Information about the prevalence and prevention of HAD, including admission screening with MST and PLOF
 - b. Unit current rate and goal on ERM metrics (including PLOF and MST) and current
 - c. Where to document nursing care and assessments
- 2) Identification and training of unit champions to increase peer-to-peer education and teamwork
- 3) Realtime feedback via daily chart audits by ANMs to catch any admissions that have not been screened

Appendix N

PDSA Cycle



Appendix O

Internal Review Board Approval



Date: May 2, 2024
Subject: RDO KPNC 24 - 102
Title: Improving Malnutrition and Mobility Screening on Admission

Dear Ms. Tirone:

The Research Determination Committee for the Kaiser Permanente Northern California region has reviewed the documents submitted for the above referenced project to be used by Elizabeth White for her MSN project. The project does not meet the regulatory definition of research involving human subjects as noted here:

Not Research

The activity does not meet the regulatory definition of research per 45 CFR 46.102(d): Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge.

This determination is based on the information provided. If the scope or nature of the project changes in a manner that could impact this review, please resubmit for a new determination. The word “research” should not appear in any posters or publications resulting from this project. Further, if publications, presentations or posters are generated from this project the following wording must be used to reference to the project research determination outcome:

“The Research Determination Committee for the Kaiser Permanente Northern California region has determined the project does not meet the regulatory definition of research involving human subjects per 45 CFR 46.102(d)”

You are expected, however, to implement your study or project in a manner congruent with accepted professional standards and ethical guidelines as described in the Belmont Report (<http://www.hhs.gov/ohrp/humansubjects/guidance/belmont.html>).

Additionally, you are responsible for keeping a copy of this determination letter in your project files as it may be necessary to demonstrate that your project was properly reviewed. Provide this approval letter to the Physician in Charge (PIC), your Area Manager, and Chief of Service, to determine whether additional approvals are needed.

Finally, all manuscripts/case series/case studies must receive written approval prior to submission to a journal or book. The Principal Investigator (PI) or first author (if different) must request their PIC¹, or the Division of Research (DOR) Director², or the Research & Innovation Academy (RIA)³ or an equivalent level leader⁴ review and provide written approval for publication submission. The PI is responsible for retaining a copy of the approval.

Sincerely,

The Research Determination Committee
KPNC-RDO@kp.org

¹PIC approval is required for all manuscripts/case series/case studies that do not include a DOR employee as an author; including but not limited to medical students, residents, and fellows.

²DOR Director approval is required for all manuscripts/case series/case studies that include DOR employees as authors.

³For all nurse-authored manuscripts/case series/case studies, approval by the Research & Innovation Academy is required.

⁴ If you are not sure who this would be, please contact the Research Determination Office (KPNC-RDO@kp.org)

Appendix P

Statement of Non-Research Determination



To qualify as an Evidence-based Change in Practice Project, rather than a Research Project, the criteria outlined in federal guidelines will be used: (<http://answers.hhs.gov/ohrp/categories/1569>)

- This project meets the guidelines for an Evidence-based Change in Practice Project as outlined in the Project Checklist (attached). Student may proceed with implementation.
 - This project involves research with human subjects and must be submitted for IRB approval before project activity can commence.
- Comments:

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *
Instructions: Answer YES or NO to each of the following statements:

Project Title:	YES	NO
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	Yes	
The specific aim is to improve performance on a specific service or program and is a part of usual care. ALL participants will receive standard of care.	Yes	
The project is NOT designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does NOT follow a protocol that overrides clinical decision-making.	Yes	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does NOT develop paradigms or untested methods or new untested standards.	Yes	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does NOT seek to test an intervention that is beyond current science and experience.	Yes	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	Yes	
The project has NO funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	Yes	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	Yes	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: "The Research Determination Committee for the Kaiser Permanente Northern California region has determined the project does not meet the regulatory definition of research involving human subjects per 45 CFR 46.102(d)"	Yes	

ANSWER KEY: If the answer to ALL of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research.



IRB review is not required. Keep a copy of this checklist in your files. If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME:

Elizabeth M White

Signature of Student:

E White **DATE** 3/16/2024

SUPERVISING FACULTY MEMBER NAME (Please print):

Carla S. Martin

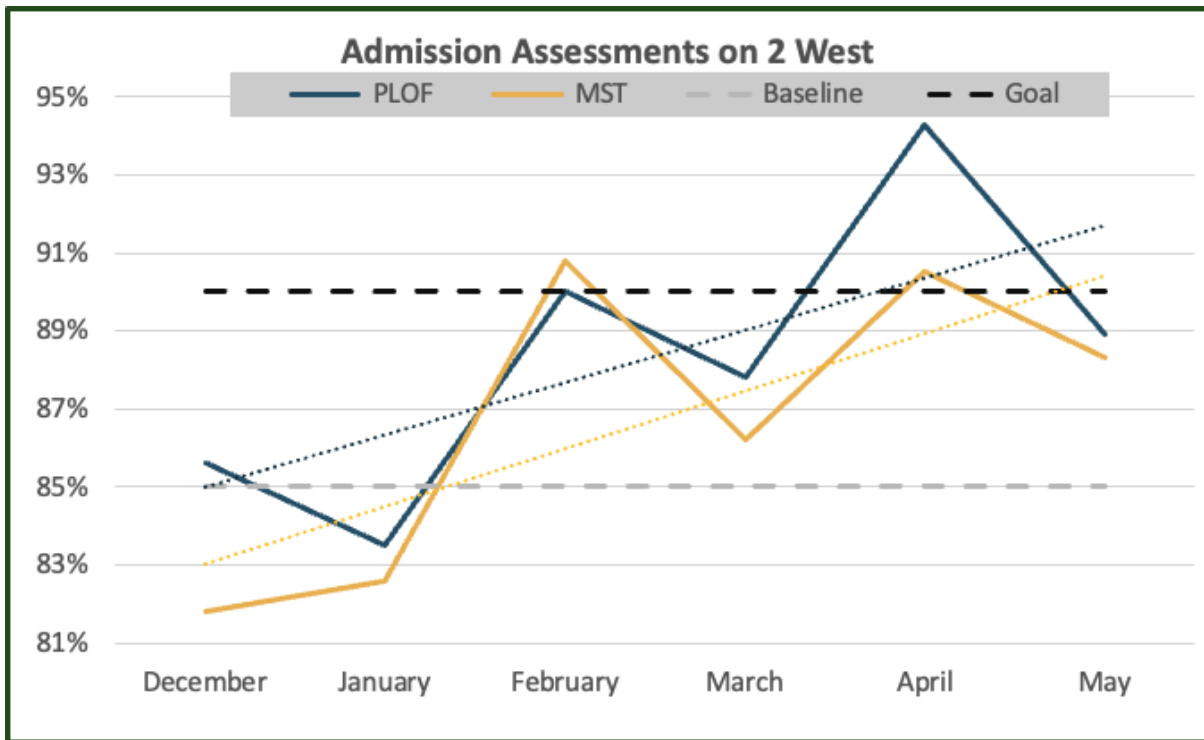
Signature of Supervising Faculty Member

Carla S. Martin **DATE** 3-16-24

Appendix Q

Process Measure Results Data

PROCESS MEASURE		
Month	PLOF	MST
December	86%	82%
January	84%	83%
February	90%	91%
March	88%	86%
April	94%	91%
May	89%	88%



Appendix R

Outcome Measure Results Data

OUTCOME MEASURE		
Month	DC to Home	7-Day Return
December	78%	14%
January	79%	12%
February	79%	11%
March	80%	12%
April	82%	11%
May	83%	14%

