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Evaluating the Efficacy of an Acuity Stratification Tool in Community Based Palliative Care

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TITLE PAGE

Title of Manuscript: Evaluating the Efficacy of an Acuity Stratification Tool in Community Based Palliative Care

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Abstract

Background: Community-based palliative (CBPC) care teams strive to optimize the quality of life of patients living with serious illness while also providing value-based care. An acuity tool was previously implemented at a CBPC site to promote resource allocation and improve follow-up care. Initial implementation failed, and re-implementation was undertaken.

Objective: Address barriers to acuity tool uptake and provide education on correct acuity tool documentation to improve the number of patients that receive prescribed follow-up care.

Setting/Subjects: An urban CBPC service in the Midwestern United States with a patient panel of 443 patients. Subjects include nurses, social workers, providers, and patients.

Design: Quantitative design utilized pre- and post-education chart audits to compare Electronic Health Record (EHR) documentation and prescribed follow-up care.

Measurement: Chi-squared paired proportions and confidence intervals pre- and post-education on correct acuity score documentation and correctly prescribed follow-up care.

Results: Post-education chart audits revealed that 73% of patients had the acuity score documented incorrectly and only 50% of patients were receiving prescribed follow-up care (n=100). Over 25% of low acuity patients had too many visits scheduled while almost 75% of high acuity patients had too few visits scheduled.

Conclusions: Lack of education was identified as a barrier to successful uptake of the acuity tool during a previous implementation. However, re-education did not improve acuity score documentation or the likelihood of patients receiving prescribed follow-up care.

Implications: A clear and efficient access to a standardized process must exist to sustain correct documentation of an acuity score. The EHR should have a single location for acuity score documentation.

Introduction

The aging population of the United States leads to an increased prevalence of serious illnesses. These conditions, including cancer and heart disease, are leading causes of death and disability. According to the World Health Organization, approximately 60% of U.S. adults have a chronic disease while 40% have two or more.[1] Caring for people with chronic disease is expensive, driving the 4.1 trillion-dollar cost of health care in the United States as reported by the Centers for Disease Control and Prevention.[2] These trends correspond with a nationwide imperative for the availability of effective and efficient palliative care services.

Background

Community-Based Palliative Care

Community-based palliative care (CBPC) meets the needs of patients with advanced chronic illnesses at home.[3] Symptom management, psychosocial support, and facilitated communication result in demonstrably positive outcomes for clinical care parameters in addition to limiting costs and avoiding unwanted and nonbeneficial interventions.[3] Staff at a CBPC service identified a need for improved resource allocation to enhance program outcomes.

Acuity Triage Tool

Individuals with a serious illness require complex care from clinical staff. To address these needs, the CBPC program identified a patient acuity assessment tool to triage patients into three groups and identify their needs.[3] The tool used by the CBPC program was taken from the Center to Advance Palliative Care website toolkit.[3] The acuity tool (Figure 1) categorizes patients into three levels of acuity: low, moderate, and high based on five categories. The acuity score can then be used to determine the optimal intensity of services. To be scored patients are categorized by matching them to at least two of the five parameters in a particular risk level. The

purpose of the tool is to allow for reevaluation at each patient visit to make sure patient needs are appropriately met.[3]

Previously, the program implemented the acuity tool and results indicated that either staff were not utilizing the acuity scoring tool or not documenting the acuity score in the correct location within the patient chart. This led to concerns regarding ability to access acuity score data timely and effectively. Management re-implemented the acuity scoring tool in Summer of 2022. Despite previous implementation failure, assessment of facilitators and barriers did not occur prior to re-implementation.

Figure 1

The Acuity Assessment Tool.[4]

Risk Level	High	Medium	Low
Care Intensity	Visits 2+/ month and Phone/Video Calls 2+ / month	Visits 1/ month and Phone/Video Calls 1/month	Visit every 2 months and Phone/Video Calls 1/month
Utilization (hospital admits/ER visits in past 6 months)	2	1	None
ADL	Dependence in 1+ new ADL in past 3 months	Some functional impairment	Minimal or no functional impairment
Palliative Performance Scale	PPS <=40	PPS <=60	Normal function
Medical	Advanced illness or multiple chronic conditions AND significant deterioration in clinical status	Advanced illness or multiple chronic conditions	Advanced illness or multiple chronic conditions
Psychosocial	Lives alone or high caregiver burden or financial distress or remote rural location	Lives with caregiver or good support network	Lives with caregiver and good support network

Organizational Assessment

The Burke and Litwin model of organizational performance and change was chosen as the foundation for the organizational assessment as it has a multifaceted perspective on factors that influence change.[5] A SWOT (strengths, weaknesses, opportunities, and threats) analysis also guided the organizational assessment (Table 1).

The CBPC service provides in-home patient care and is part of a large healthcare entity in the Midwestern United States. Key stakeholders include patients, providers (NPs, MDs, PAs), registered nurses (RN), social workers, and administrative staff of the CBPC program. This program has been identifying patients with more needs (or higher acuity) since its creation. However, prior to the acuity tool implementation one year ago, there was no standardized process for assessing patient acuity. Despite implementation of the acuity tool, inconsistent documentation, resulting in inconsistent follow-up care, necessitated an evaluation of the previous implementation failure to inform future education on acuity score documentation.

Table 1

Organizational SWOT Analysis of the CBPC organization.[6]

Strengths	**Weaknesses**
• Common goal to improve patients' quality of life and outcomes. • Qualified leadership team (MDs, DNPs, social workers, and RNs) • Part of a larger healthcare system • Culture is open to change. • Organization has mentored DNP students who implemented projects previously. • Strong commitment from organization's key stakeholders to achieve patient standardization for goal of accreditation	• Standardized work document exists but it is not being utilized by staff consistently. • Staff may be overwhelmed with another task to accomplish. • Providers may be resistant to documenting more information for patients in a new location. • No incentive to complete tool for staff-documenting tool in chart is not reviewed by management to evaluate job performance. • Re-implemented acuity tool documentation without identifying previous barriers to completion
Opportunities	**Threats**
• Project manager desires the ability to capture staffing needs of the program. • Other departments/programs can learn from the formal structure of utilizing the acuity too. • Decrease in patient hospitalizations, saving cost for larger health organization and increase program value	• Competing priorities related to multiple changes occurring during the coronavirus pandemic and other initiatives within the organization. • Timeline of less than a year to implement acuity tool and develop data to support its use. • Staff overwhelmed with consults.

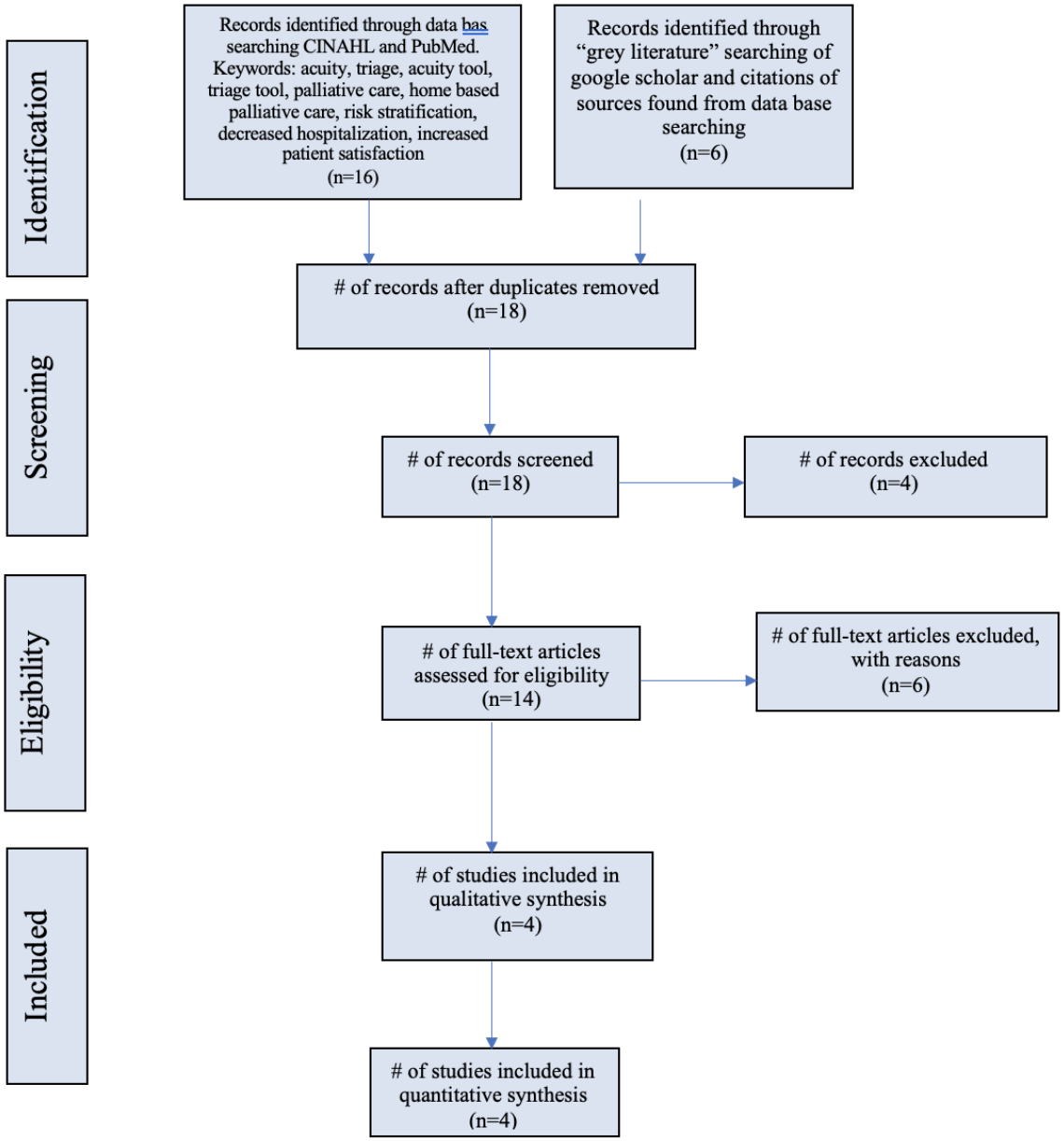
Literature Review

A comprehensive literature review was conducted utilizing the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA) approach (Figure 2).[7] Databases searched were PubMed and CINAHL with inclusion criteria focused on community or hospital palliative care programs utilizing an acuity tool for resource allocation of adult patients. Exclusion criteria included use of an acuity tool not used in community or hospital palliative care programs, or if the focus was on pediatrics.

Unfortunately, the literature review revealed that there is very little direct research on this topic. While eight articles were ultimately included, none was strongly related to my specific clinical practice question. Important themes uncovered from the literature included benefits of triaging palliative care patients based on acuity, staff and patient satisfaction with the impact of acuity triaging on follow-up care, and cost savings with acuity tool use. Barriers the literature identified were lack of a 'gold standard' acuity tool for palliative care triaging with available tools lack lacking evidence-based research to support their use.[8-15]

Figure 2

PRISMA Process Figure.[7]



Objective

Clinical Practice Question

Will addressing barriers of acuity tool uptake and providing education on correct documentation

result in patients receiving prescribed follow-up in a community-based palliative care program?

Project Aims

This quality improvement project was aimed at assessing barriers and facilitators of acuity tool uptake during the previous implementation, providing education to staff, and comparing one month of patient data pre- and post-intervention to compare if 1) acuity scores are charted anywhere in the chart, 2) acuity scores are documented in the correct location in patient encounter to ensure the ability to generate reports, and 3) to determine if follow-up care is consistent with the patient's acuity score. Providing the CBPC team an executive summary of results and creating a sustainability plan finalized these aims. An additional aim is to provide the CBPC team with an executive summary of the results and recommendations for future implementation.

Model to Examine Acuity Assessment Tool

The Chronic Care Model was chosen to explore the phenomenon as it guides high-quality chronic disease management within primary care and improves patients' outcomes.[16] Three essential concepts from the model include delivery system design, decision support, and clinical information systems. With these essential concepts, the Chronic Care Model recommends a prepared and proactive team approach that can lead to improved outcomes for individuals with chronic conditions.

When faced with situations that are perceived to be emergent, patients often respond by enlisting acute care services which could lead to hospitalization. Acknowledging that the problem of increased hospitalizations can arise from the mismatch of patient acuity level and program logistics within the palliative care program, the Chronic Care Model is identified as a framework for creating a routine standardized assessment process. The improved allocation of program resources that can result from a routine acuity categorization process allows more time

spent with high acuity patients and can improve program resources.

Methods

Setting

This quality improvement project was implemented at an urban CBPC service in the Midwestern United States. The team is comprised of six nurses, four social workers, twelve providers, one chaplain and two clinical administrators and cares for a panel of over 400 patients.

Model/Framework for Implementation

The Plan-Do-Study-Act (PDSA) cycle is part of the Institute for Healthcare Improvement Model used for accelerating change within an organization.[17] The PDSA cycle was used to evaluate if the education provided to the community based palliative care staff would increase incidence of acuity score documentation, correct acuity score documentation, and improve prescribed patient follow-up care. Details of how the PDSA model was utilized for each phase of the project is outlined under implementation strategies (Figure 2).

Subjects

Subjects were patients and providers of the CBPC program. A random chart audit of 200 adult patients enrolled in the CBPC was completed.

Intervention

Assessing Barriers to Inform Implementation Strategies

Although the administrative team of the CBPC program did not assess barriers of to the previous implementation prior to re-implementation, assessing barriers is an important element to the implementation strategy. Without understanding previous implementation failure, success of the next implementation may be impacted. After conducting the SWOT analysis and attending numerous staff meetings, three major barriers to previous acuity tool uptake were identified.

Staff Dissatisfaction. Staff communicated dissatisfaction with the acuity tool documentation process citing that it was not only difficult to locate the correct place to document, but more time consuming to document in the correct location as compared to other locations in the EHR. Providers found it easier to document the score once in the "Specialty Comment Box" when the chart is first opened versus locating the template for the acuity score during each visit.

Automatic Reports. Despite emphasizing the need to document the acuity score in the correct EHR location, there was no process to automatically generate reports from this data field. Management was required to manually review each chart to determine if the acuity score was documented correctly and if prescribed follow-up occurred. Management was unable to provide timely feedback and providers and other staff did not receive follow-up if documentation was not done correctly.

Staff Incentive. Although the management team provided information about the importance of correct acuity score documentation and prescribed follow-up care, there was little incentive for staff to take the additional time required to document the score in the correct location within the EHR. Infrequent chart audits for correct documentation and prescribed follow-up care and lack of follow-up with staff further exacerbated this issue.

Addressing Barriers

To address staff dissatisfaction with the amount of time required for correct documentation, a detailed EHR walkthrough was created on how to correctly document the score, including screenshots, and provided to the team. Questions were addressed at in-person team meetings to ensure staff understood how to correctly document the score. It was made clear that chart audits would be conducted with follow-up if discrepancies were identified; this action

addresses the staff incentive barrier. In collaboration with IT, a request was submitted to develop the ability to automatically generate reports on acuity score documentation.

Implementation Strategies Aligned with PDSA Cycle

Planning Stage. The organization was assessed for change readiness, barriers, and facilitators via organizational assessment and SWOT analysis. The assessment was performed through staff discussions, emails, and meetings to determine barriers and facilitators. Multiple meetings were held with CBPC management team to discuss previous implementation failure. Clinical staff were shadowed to observe current acuity score documentation and patient follow-up processes.

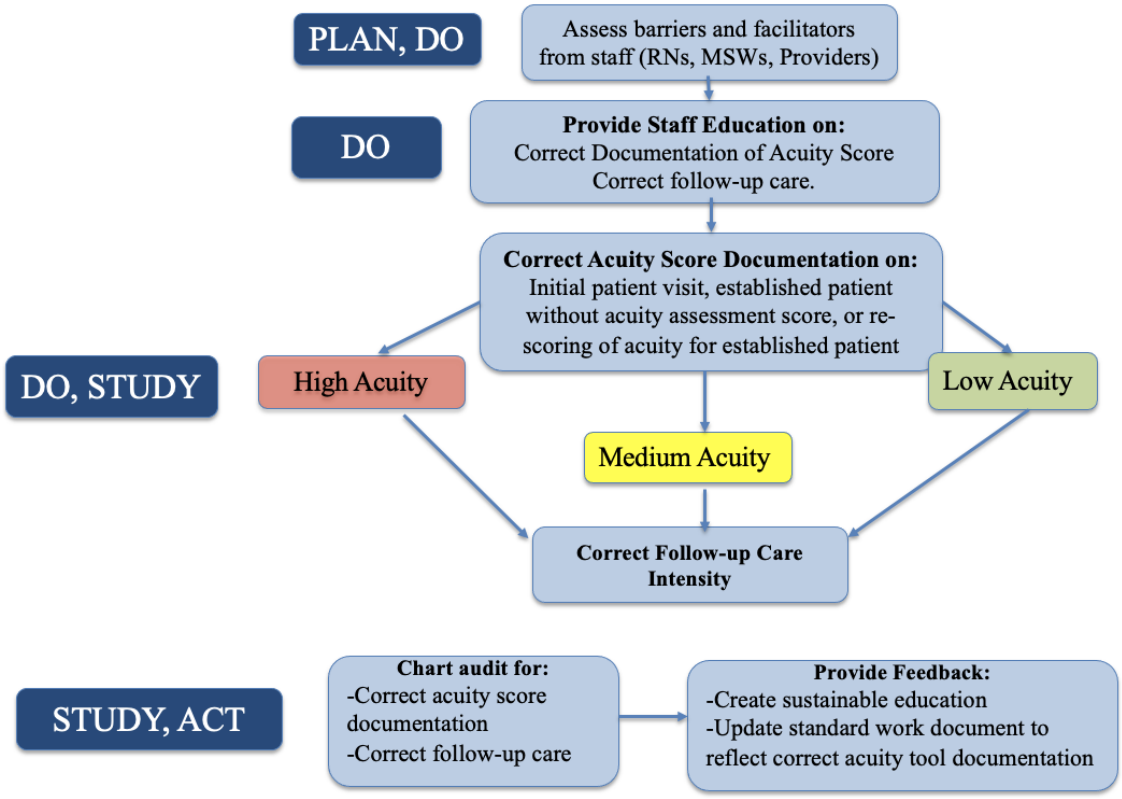
Doing Stage: Information collected from the staff conversations and observations informed the education that was developed and then provided to staff (Figure 2). Frequent, subsequent, staff meetings and discussions to answer follow-up questions and concerns were conducted after education. A request to develop an automated process to generate reports on acuity score data was completed.

Studying Stage. Chart audits were used to collect data and results were distributed to the CBPC team. Within the EHR, data specifically sought out were incidence of acuity score documentation regardless of location within EHR, incidence of acuity score documentation in the *correct* location, and incidence of patients receiving prescribed follow-up care. Data was analyzed for statistical significance.

Acting Stage. Final analysis of the data was shared with the team. It was determined that more staff engagement, education, and facilitation would be needed to improve correct documentation of acuity scores. Additionally, it was determined that the inability to automatically generate reports influences the success of correct acuity score documentation.

Figure 3

Acuity Tool Implementation Approach to the Plan-Do-Study-Act Framework.



Data Collection and Analysis

The EHR of 100 random patients were audited for one month prior to interventions being implemented. After assessing barriers of the previous implementation and providing new education, the EHR of another 100 random patients were audited for one month. Descriptive statistics were used to describe the sample, while Chi-square and paired proportions were used to determine statistical significance for pre- and post-intervention data.

Ethical Considerations

The Institutional Review Board for the organization deemed the project a quality improvement project. Only de-identified data was stored and collected outside of the organization's shared drive.

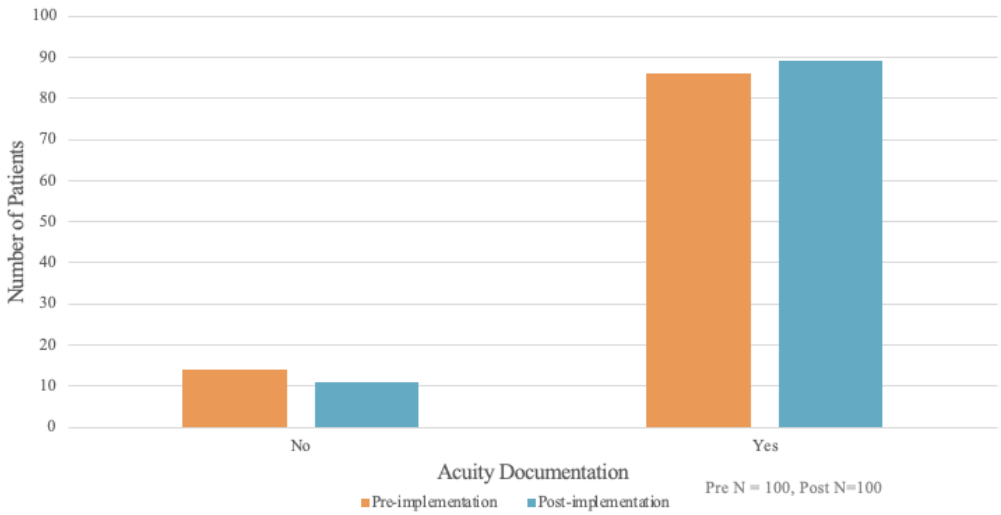
Results

Presence of Acuity Score Regardless of Location

As shown in Figure 4, the number of patients with the acuity score documented anywhere in the chart before the intervention was 86 (n=100) and 89 (n=100) after the intervention. After the intervention, the number of patients with the acuity score documented somewhere within the chart improved slightly but not significantly, with a $\chi 2$ test statistic of 0.4114 and a *p* value of 0.5212.

Figure 4

Results: Number of patients with acuity score documented, regardless of location in EHR

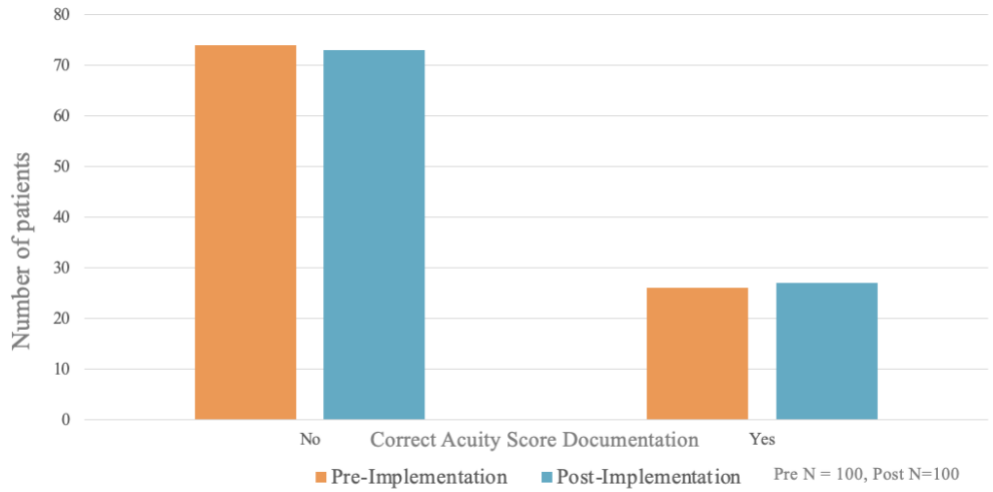


Correct Location of Acuity Score Documentation

As evidenced by Figure 5, the acuity score is documented incorrectly in 73 EHRs (n=100) pre-intervention and in 74 EHRs (n=100) post intervention. There was not a significant improvement from pre-intervention to post-intervention ($\chi 2$ test statistic: 0.0257, p=0.8728).

Figure 5

Results: Number of patients with acuity score documented in correct location



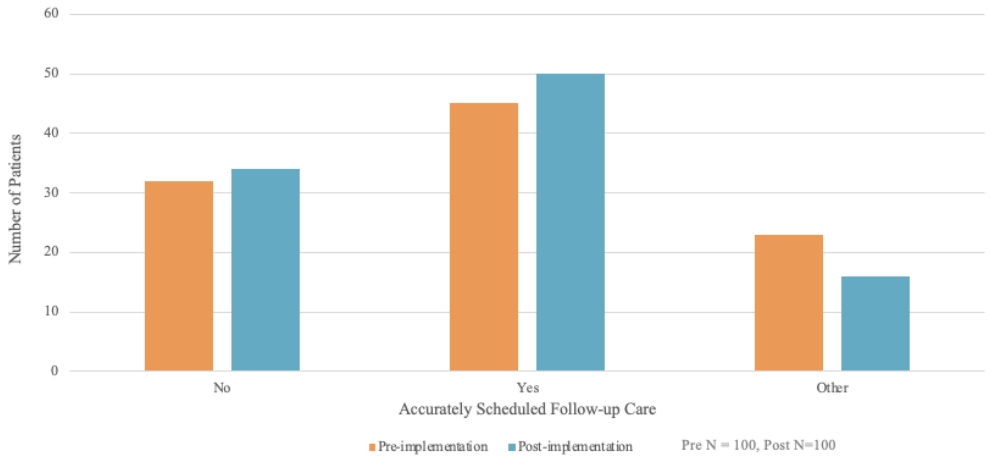
Prescribed Follow-up Care

As outlined in Figure 6, chart audit demonstrated that 45 (n=100) patients had accurately scheduled follow-up care pre-intervention compared to 50 (n=100) patients post-intervention. There was no statistically significant improvement pre- to post-intervention; $\chi 2$ test statistic of 0.0352 and *p* value of 0.8513 (0.05 level of significance).

Table 2 shows 1) number of patients in each acuity score grouping 2) number of patients who did not receive accurate follow-up care in that group and 3) evidence of supporting findings. Results indicate that out of 158 patients (n=158), 39.2% were not receiving accurately scheduled follow-up care for the months of December 2022 and January 2023. Table 2 contains the combination of pre-and post-intervention sample. After statistical analysis, results indicated a more significant finding when pre-and post-intervention samples were combined.

Figure 6

Results: Number of patients with follow-up care scheduled as prescribed by acuity score



Note. "Other" depicts patients no longer enrolled in palliative care or the acuity score is not found in chart.

Table 2

Results: Number of patients with follow-up care scheduled as prescribed by acuity score pre/post data

Pre and Post Implementation Data	Low Acuity	Medium Acuity	High Acuity
Total # patients with score*	42	97	19
Total # of patients not receiving accurately scheduled follow-up care	11 **26% of low acuity patients**	37 **38% of medium acuity patients**	14 **74% of high acuity patients**
Evidence	• Too many visits scheduled	• Not enough home visits scheduled to meet acuity tool requirements	• Not enough home visits scheduled to meet requirements of acuity tool

Note. Began with n=200,; 26 patients removed from this sample due to not having acuity score documented anywhere in EHR and could not evaluate follow-up care. 16 additional patients removed as accurate follow-up care could not be assessed due to being discharged from palliative care program. 1 additional patient removed as acuity listed as "low-medium" to end with n=158.

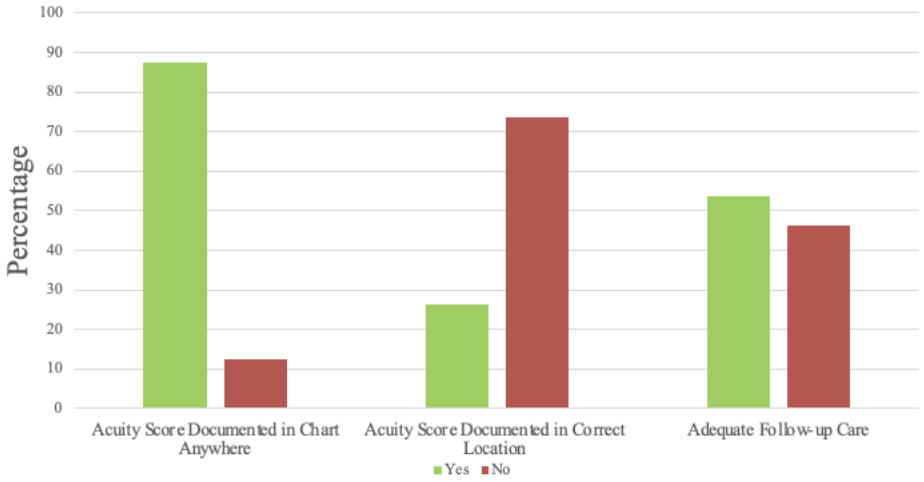
Combined Pre-and Post-Intervention Data

Given the lack of statistical significance on the initial outcome measures, the consulting statistician recommended evaluating the confidence interval on pre- and post-intervention data

combined. This analysis identified three important findings: 1) It can be stated with 95% confidence that the acuity score is documented anywhere in the patient chart between 82% and 91.7% of the time 2) It can be stated with 95% confidence that the acuity score is documented in the correct location of a patient encounter between 20.5% and 33.1 % of the time and 3) It can be stated with can state with 95% confidence that patients have accurately prescribed follow up care between 46% and 61% of the time.

Figure 7

Results: Confidence Intervals from combined pre-and post-intervention data



Discussion

The aim of this project was to determine if addressing barriers to acuity tool uptake and providing additional education on acuity tool documentation would improve incidence of documentation and improve the number of patients that receive prescribed follow-up care. Results show that despite assessing barriers and providing education, neither aim was accomplished; these findings are not consistent with the literature.

Results demonstrate that the CPBC team understands the need for the acuity score to be

documented, as demonstrated by 89% of patients having the score documented *somewhere* within the chart However, additional education did not result in a statistically significant improvement in staff documenting in the correct location. Results also indicated that accurately scheduled follow-up care did not improve significantly with 50% of patients post-intervention received receiving accurate follow-up care compared to 45% of patients pre-intervention. Table 2 emphasizes this as it was noted that 26% of low acuity patients (n=42) were receiving too many follow-up visits and 74% (n=19) of high scoring patients were not receiving enough visits.

Literature suggests that by correctly utilizing an acuity tool there should be an improvement in resource allocation, improved patient-follow-up, and increased staff satisfaction. Despite the acuity score being documented somewhere in the chart, patients still did not receive accurately scheduled follow-up care. Literature also suggests that triaging patients based on acuity would improve not only correct follow-up care, but workflow to schedule appointments. Unfortunately, results do not indicate a correlation between correct acuity tool use and accurately scheduled follow-up care. Lastly, after post-intervention data was collected, staff continued to discuss difficulty of documenting acuity scores and admitted to not understanding the importance of documentation in the correct location. This opposes research as multiple studies highlighted that staff enjoyed correctly utilizing an acuity tool as it created less work.

Limitations

Due to the complexity of encounter types and amount of patient visits in each report, telephone encounters and nurse and social work visits were removed from the sample. The request of IT to develop one correct source of acuity score documentation is still outstanding. Staff continue to document in the location where they feel most comfortable and are likely to continue doing so until this ability is removed.

Implications for Practice

A clear, easy to access, standardized process must exist to sustain correct documentation of patient acuity scores. Education must include correct documentation of the acuity tool and how it informs prescribed follow-up care. A single location for documentation should be utilized to promote correct documentation. The ability to generate an automated report is crucial to the continued use of an acuity tool as it promotes timely feedback to both management and staff on correct documentation and accurately scheduled follow-up care.

Conclusion

Documentation of the acuity score in the correct location did not improve despite assessing the barriers of the previous failed implementation of the acuity tool and new education. Resource allocation remained inadequate as inaccurate follow-up care continued to be prescribed after implementation. Despite successful use of acuity tools in other healthcare settings, acuity tools continue to be underutilized in palliative care and no 'gold standard' tool has yet to be identified.

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“Oral” Defense Presentation

Evaluating the Efficacy of an Acuity Stratification Tool in Community Based Palliative Care

Madison Niederer, BSN, RN, DNP Student

DNP Project Defense

Date: 4/13/23

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  - Stacey Vanderklok, MSW
    - Manager
  - Angela Kinch, BSN, RN
    - Business & Development Manager

Grand Valley State University, Kirkhof College of Nursing

Objectives for Presentation

1. Discuss importance of utilizing an acuity tool for palliative care patients.
2. State the findings of the organizational assessment and SWOT analysis.
3. Review evidence-based literature of intervention.
4. Discuss implementation strategies including evidence-based framework and strategies.
5. Describe evaluation measures.
6. Recommend strategies for sustainability.
7. Obtain approval of final project defense.

Introduction: Background

- **Increased life expectancy & aging population in the United States** (CDC, 2022;WHO, 2018)
- **Chronic conditions**
  - Advanced illnesses
  - Frequent hospitalizations
  - Economic Consequences
- **Community-Based Palliative Care (CBPC) can effectively manage this population** (CAPC,2021)
  - Reduction in total medical costs/hospital admissions
  - Meets needs of patients by giving them quality of life for as long as possible

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Introduction: The Problem

- **Inadequate Resource Allocation**
  - CBPC care meets the needs of patients with advanced chronic illnesses at home.
  - Need identified for improved allocation of their resources for home-based patients as program population grew.
  - Resulted in patient and staff dissatisfaction.
- **Inadequate Follow-up Care**
  - Patients who identified with more needs were not receiving adequate follow-up care.
  - Resulted in an increase in ER visits
  - ER visits lower CBPC program value.

Introduction: The Problem Cont.

- **Acuity Tool Implementation**
  - Tool used to score patient acuity.
- **Acuity scoring method previously implemented to improve resource allocation and patient follow-up care**
  - Patients placed in categories to inform staff on acuity level.
  - Acuity level provided clear steps to schedule patient follow-up visits to promote adequate program resource allocation.
- **Results of Implementation**
  - Staff not utilizing tool to score patients.
  - Staff documenting tool in incorrect location.
  - Fall-out of utilization due to other priorities.

The Solution: Re-education of An Acuity Tool

Risk Level	High	Medium	Low
Care Intensity	Visits 2+/ month and Phone/Video Calls 2+ / month	Visits 1/ month and Phone/Video Calls 1/month	Visit every 2 months and Phone/Video Calls 1/month
Utilization (hospital admits/ER visits in past 6 months)	2	1	None
ADL	Dependence in 1+ new ADL in past 3 months	Some functional impairment	Minimal or no functional impairment
Palliative Performance Scale	PPS <=40	PPS <=60	Normal function
Medical	Advanced illness or multiple chronic conditions AND significant deterioration in clinical status	Advanced illness or multiple chronic conditions	Advanced illness or multiple chronic conditions
Psychosocial	Lives alone or high caregiver burden or financial distress or remote rural location	Lives with caregiver or good support network	Lives with caregiver and good support network

Note. Figure from The Center to Advance Palliative Care (CAPC) (2022). Population stratification considerations. https://www.capc.org/documents/download/232/

ORGANIZATIONAL ASSESSMENT

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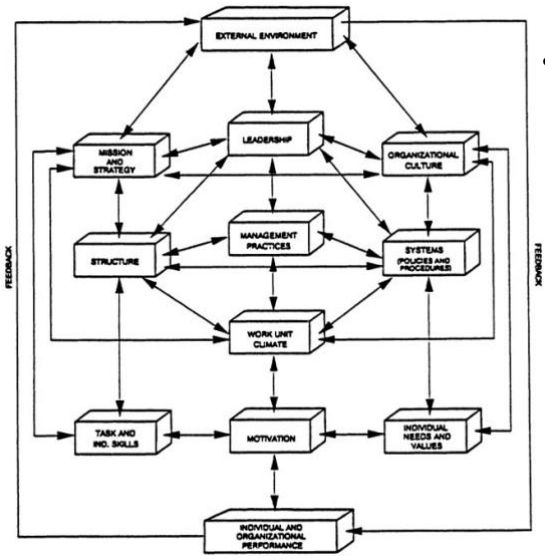
Organizational Framework



- Burke and Litwin (1992) Performance and Change Model: Comprehensive examination of 12 factors reflective of the interconnections of impacts of changes on both macro and micro-levels.

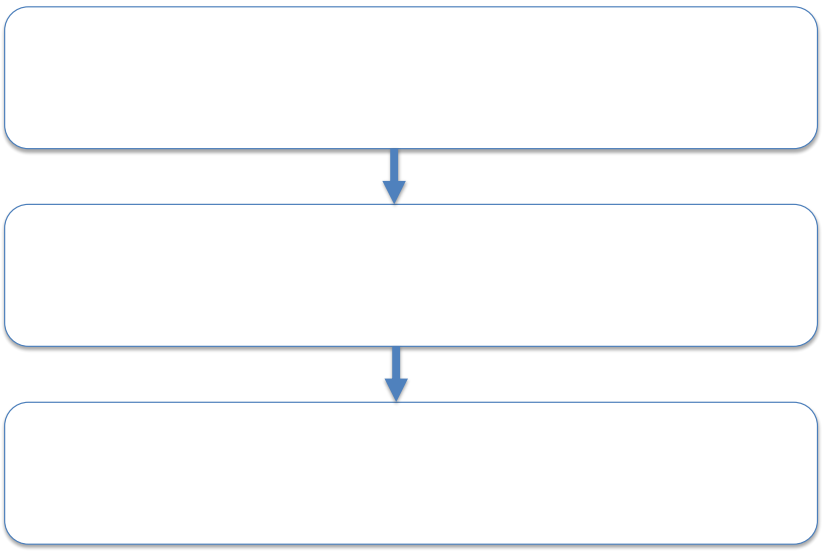
Current State of the Community Based Palliative Care Program

- A community based palliative care program in the Midwest
  - Part of a larger health organization caring for patients above the age of 18 enrolled in palliative care
  - For the entire program, staff includes: 5 RNs, 1 LPN, 4 social workers, 12 providers, 1 chaplain and 2 clinical administrators.
  - Interdisciplinary care team for one patient includes one MD, NP or PA, with an RN and MSW.
  - As of 2023, a total of 441 patients
  - Visits take place in the home, over the phone or telehealth.
  - Funding comes from larger health organization as program creates cost savings for entity.

Current State of the Community Based Palliative Care Program

- Acuity Stratification
  - Providers initially assess patients using the acuity tool to assign acuity score
  - Patients are assigned a score: low, medium or high acuity.
  - The care team then schedules follow-up care based on acuity score
    - High: 2 or more visits a month with 2 or more phone calls a month
    - Medium: 1 visit a month, 1 phone or video call a month
    - Low: Visit every 2 months, 1 phone or video call a month
  - Standard location to document score not being utilized by all staff resulting in difficulty to track acuity scores.
  - Lack of automated ability to generate acuity score reports.

Current State of the Community Based Palliative Care Program



SWOT Analysis

Strengths	Weaknesses
Common goal to improve patients' quality of life and outcomes **Qualified leadership team (MDs, DNPs, social workers, and RNs)** **Part of a larger healthcare system** **Culture open to change** Organization has mentored DNP students who implemented projects previously **Strong commitment from organization's key stakeholders to achieve patient standardization for goal of accreditation**	• **Standardized work document exists but it is not being utilized by staff consistently** • Staff may be overwhelmed with another task to accomplish • **Providers may be resistant to documenting more information for patients in a new location** • **No incentive to complete tool for staff-documenting tool in chart is not reviewed by management to evaluate job performance** • **Re-implemented acuity tool documentation without identifying previous barriers to completion**

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SWOT Analysis

Opportunities	Threats
• Project manager desires the ability to capture staffing needs of the program • **Other departments/programs can learn from the formal structure of utilizing the tool** • **Decrease in patient hospitalizations, saving cost for larger health organization and increase program value**	• **Competing priorities related to multiple changes occurring during the coronavirus pandemic and other initiatives within the organization.** • Timeline of less than a year to implement acuity tool and develop data to support its use • **Staff overwhelmed with consults**

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Clinical Practice Question

Will addressing barriers of acuity tool uptake and providing education on correct documentation result in patients receiving prescribed follow-up in a community-based palliative care program?

EVIDENCE IN LITERATURE

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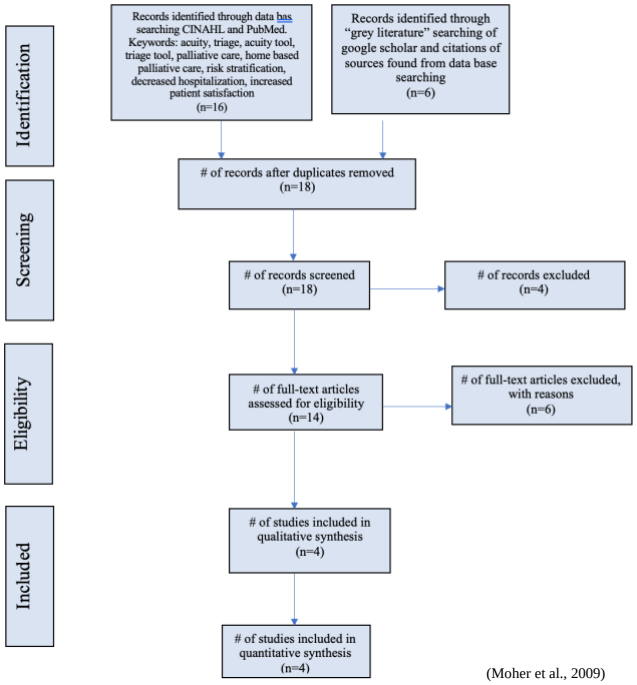
Literature Review Purpose and Aim

- **Purpose:** Identify an evidence-based acuity assessment tool that has been validated for use in community palliative care.

- **Aim:** Will routine assessment of patients with life-limiting illness in a home-based palliative care program using a tool for categorizing levels of acuity lead to effective allocation of program resources and improved patient care outcomes?

- Methods: The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guided the review (Moher et al., 2009).
  - Databases: PubMed and CINAHL
  - Type: randomized controlled trials, secondary analysis, qualitative research, meta-analysis, integrative reviews, and systematic reviews
  - Keywords: acuity, acuity tool, triage, triage tool, palliative care, palliative homecare, palliative community care, resource allocation, and patient outcomes.
  - Inclusion criteria: Focused on community or hospital palliative care programs utilizing an acuity tool for resource allocation of adult patients.
  - Exclusion criteria: Excluded if the use of an acuity tool was not used in community or hospital palliative care programs, or if the focus was on pediatrics.

PRISMA Figure



(Moher et al., 2009)

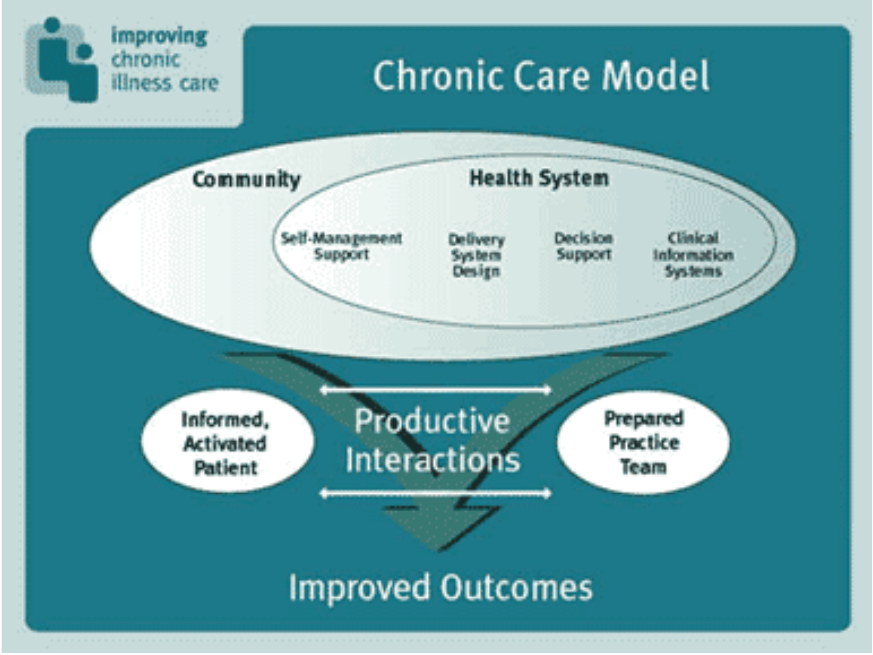
Evidence for Project

Overarching Themes	Number of Studies	Authors
No "gold standard" evidence-based acuity tool identified for palliative care patient triage	4	Baker et al, 2021; Russell et al, 2020; Russell et al., 2021; Reed, 2020
Benefit to using an acuity/triaging assessment tool to determine patient needs in Palliative Care	3	Russell et al, 2020; Russell et al., 2021; Reed, 2020
Acuity/triaging assessment tool increases follow-up care and resource allocation in Palliative Care	2	Frendak et al, 2020; O'Connor, 2019
Implementing an acuity/triage assessment tool improves clinician and patient caregiver satisfaction in Palliative Care	2	Boland et al, 2016; Phillip et al, 2019
Acuity/triaging assessment tool improves economic savings	2	Frendak et al, 2020; Reed, 2020.

Evidence for Project

Barriers	Facilitators	Authors
• **No "gold standard" for palliative care triage.**	• Acuity triaging principle is well established in emergency rooms and surgery centers.	Baker et al, 2021; Russell et al, 2020; Russell et al., 2021; Reed, 2020
• Acuity tool neglects domains related to the holistic approach to care, creating subjective scoring	• **Tools such as acuity tool used by program showcase positive results with provider workflow and improved clinical outcomes for palliative care.**	Boland et al, 2016; Russell et al, 2020; Russell et al., 2021
• **Acuity tool chosen by the CBPC program is not supported by evidence-based research.**	• **Research emphasizes positive effects of acuity tool chosen by project site on both patient and staff in palliative care.** • Easy to use and study.	Reed, 2020

Model to Examine Phenomenon: Chronic Care Model



(Wagner, 1988).

PROJECT METHODOLOGY

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Methods

Purpose: Assess barriers of documenting the acuity score in the correct location and provide education to increase acuity score documentation rates and prescribed follow-up care.

Project Type: QI

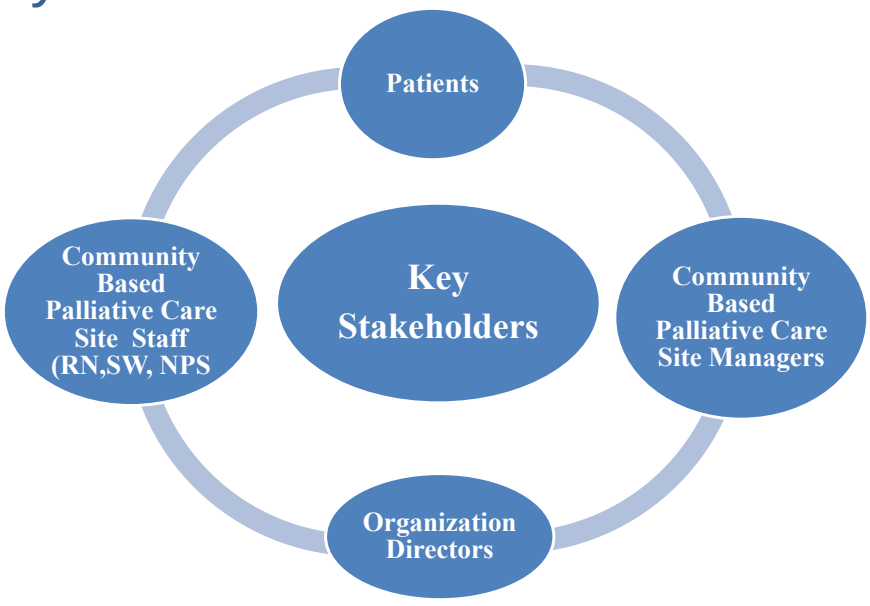
Setting: Community Based Palliative Program

Evaluation Method: Pre/Post comparison of EHR acuity score documentation in the **correct location** in the patient encounter and correctly scheduled follow-up care based on acuity score given to patient.

Participants: Patients enrolled in the CBPC program and the staff (RNs, SWs, and providers.)

Source of information: EHR documentation

Key Stakeholders



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Purpose /Aim

A program evaluation project to:

- Assess barriers of acuity tool uptake
- Educate on correct documentation of acuity score.
- Ensure acuity score is documented correctly in each patient encounter and assess that appropriate follow-up care is scheduled based on the patient's acuity score.

Project Objectives

1. **Identify barriers and facilitators to utilization of the acuity tool to better inform effective reimplementation strategies.**
2. Review the literature to identify if an evidence-based acuity assessment tool has been validated for use in community palliative care.
3. **Apply PDSA model to educate staff on correct documentation of the acuity tool**.
4. Audit random sample of patient charts of 1-month pre staff education and 1-month post staff education for correct acuity tool documentation and accurately scheduled follow-up care.
5. Update current program's standardized work document to showcase correct documentation of acuity tool for initial and follow-up visits.
6. Develop process to automatically generate patient acuity score reports from the EHR.
7. **Create sustainable staff education on correct acuity tool documentation**.
8. **Distribute quality improvement project findings and sustainability plan to the project site and GVSU faculty members.**

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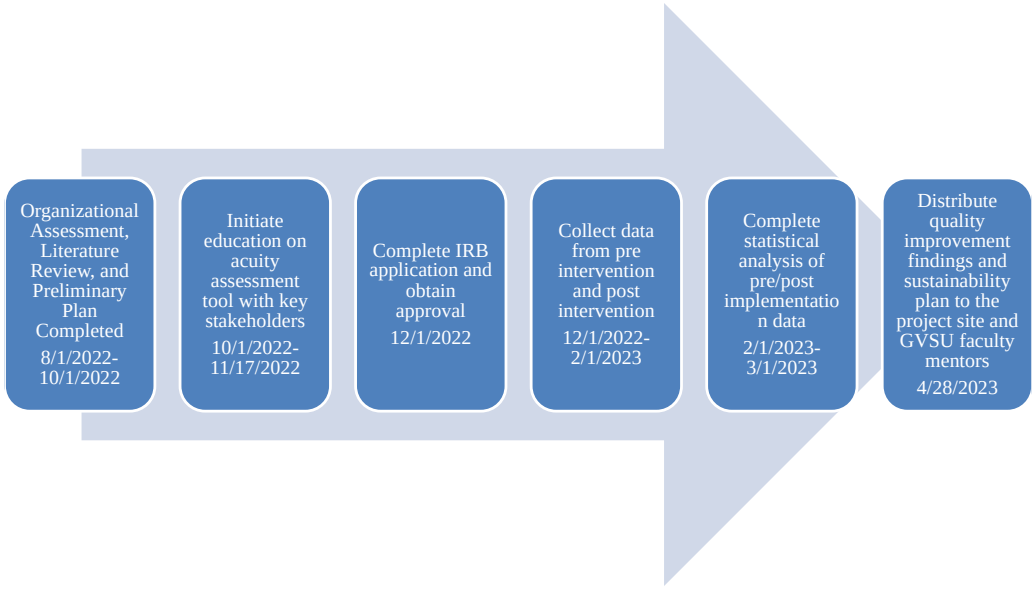
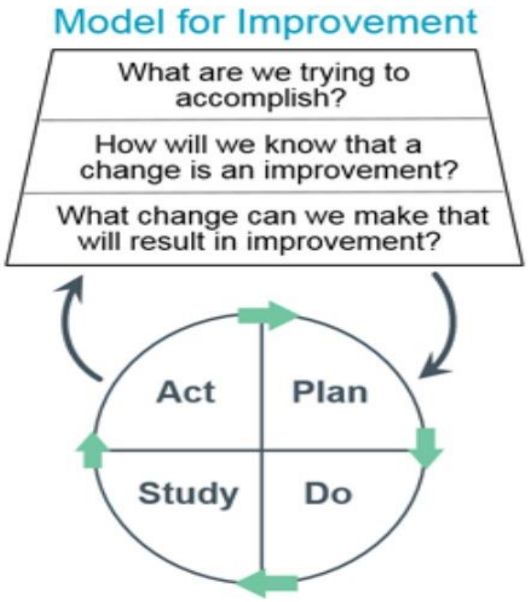
Project Timeline



Implementation Framework—Plan-Do-Study-Act



(IHI, 2022)

Implementation Strategies & Elements

Implementation Strategies (Powell et al., 2015)	Implementation of Acuity Assessment Tool	Framework Alignment
Assess for readiness and identify barriers and facilitators	**SWOT analysis, staff meetings**	**Plan**
Stakeholder Engagement	Staff meetings, management meetings, emails, focus groups	Plan, Do
Shadow other clinicians	Observation of clinical staff (NPs, RNs, MSWs); support CAPC acuity assessment tool use	Plan, Do
Develop and implement tools for quality monitoring	Discussion with all staff on workflow process, workflow/template on electronic health record distributed to staff	Plan, Do
Workflow adjustments	Review electronic health record documentation; discussions with all staff on facilitators and barriers of tool; distribute education on documentation of tool	Do, Study
Facilitation and education	**Discussions with staff in person, at meetings, emails/text; update standard work documents to reflect current documentation expectations**	**Do, Study, Act**
Intentionally reexamine implementation effort	Review electronic health record documentation after workflow process adjustment	Do, Study, Act
Audit and provide feedback	**Collect electronic health record data (incidence of acuity assessment tool screenings, incidence of documenting screening in correct location and incidence of adequate follow-up care)**	**Do, Study, Act**

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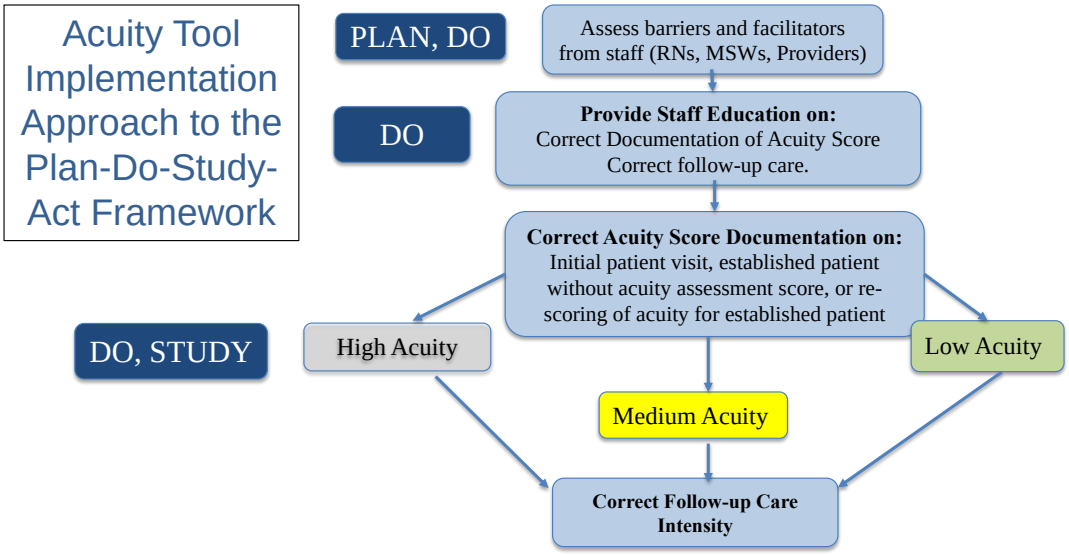
Acuity Tool Implementation Approach to the Plan-Do-Study-Act Framework



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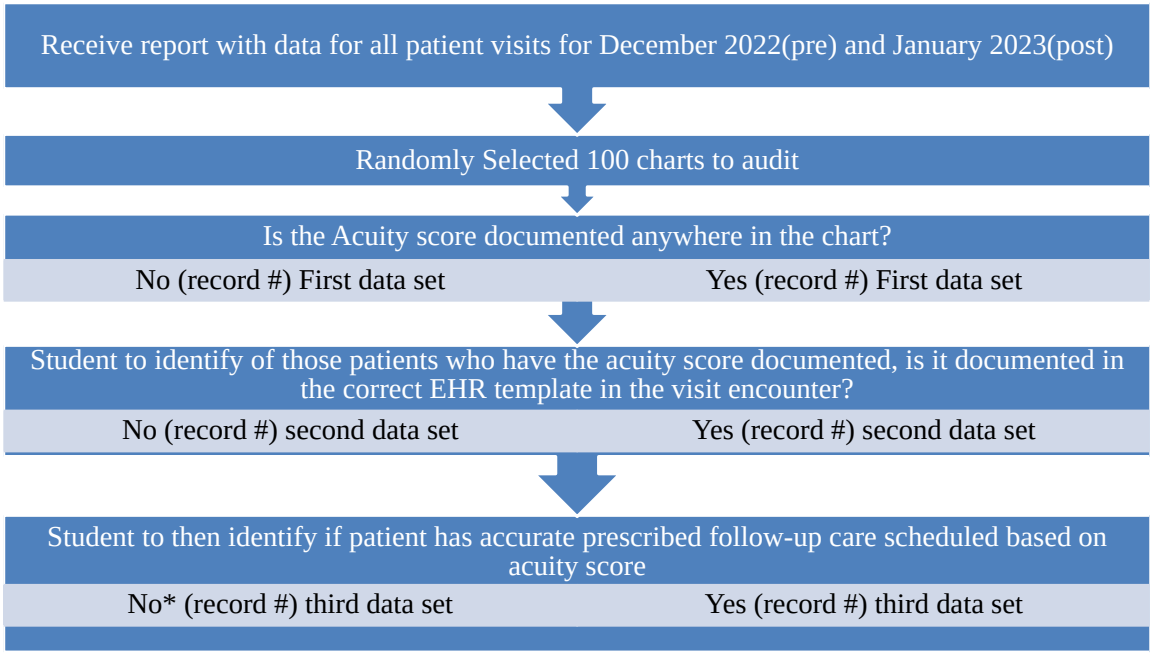
Evaluation and Measures Table

Topic (Powell et al., 2015)	Concept	How to Measure	When Measured	Who Measures
Implementation Strategies	• **Identify barriers to acuity tool use and correct documentation.** • Stakeholder Engagement. • Shadow Other clinicians.	SWOT analysis, staff meetings, electronic health-record review, emails, staff discussions	Pre-intervention	Student, site mentor
	Facilitation and Education • **Educate on importance of acuity tool use for resource allocation improvement.** • **Educate on correct documentation of acuity score.**	EHR audit, education on the acuity tool	Intervention	Student
	• Intentionally reexamine implementation effort • Audit and provide feedback	Staff meetings, EHR audit	Post intervention	Student
Patient Outcomes	• Receiving adequate follow-up care/resources match acuity score	EHR audit EHR audit	Pre-intervention and post intervention	Student
System outcomes	• **Correct Acuity Score Documentation** • **Updated standard work document to demonstrate correct documentation of acuity score.** • **Ability to automatically generate acuity score list from EHR.** • Development of sustainable staff education on correct acuity score documentation	EHR audit Staff meetings Discussions with IT Deliverables	Post intervention	Student, management

Measures & Analysis Plan

Three Measures	Source	Measurement Analysis
# of patients with acuity score documented in the chart, regardless of location.	Electronic health record audit	**Comparison:** Pre-intervention; Post-intervention Chi-Square Paired Proportions Confidence Intervals
# of patients with acuity score documented in the correct location in the patient encounter.	Electronic health record audit	**Comparison:** Pre-intervention; Post-intervention Chi-Square Paired Proportions Confidence Intervals
# of patients with follow-up care scheduled as prescribed by acuity score.	Electronic health record audit	**Comparison:** Pre-intervention; Post-intervention Chi-Square Paired Proportions Confidence Intervals

Measures & Analysis Process (Pre/Post)



*patients who d/c'd from palliative care in separate group)

Ethical Considerations and IRB Determination

- Patient information was protected, student was HIPAA compliant.
  - CITI training
  - Organizational Laptop
- IRB determined "Not Research"
- De-identified data will be collected and stored on an organization protected device shared with GVSU project team and statistician.

Budget and Resources

Revenue	
Project Manager Time (in-kind donation of student)	11,400.00 $
Team Member Time: Site mentor, Advisory Team, Site Director, Site Manager	6,210 $
Consultations Epic Liasson, Statistician	94 $
TOTAL INCOME/SAVINGS	**$17,704**
Expenses	
Project Manager Time (in-kind donation of student)	11,400.00 $
Team Member Time: Site mentor, Advisory Team, Site Director, Site Manager	6,210 $
Consultations Epic Liasson, Statistician	94 $
Equipment: Laptop	1,250.00
TOTAL EXPENSES	**18,954**
NET OPERATING PLAN/FINANCIAL BENEFIT	**-1,250.00**

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RESULTS

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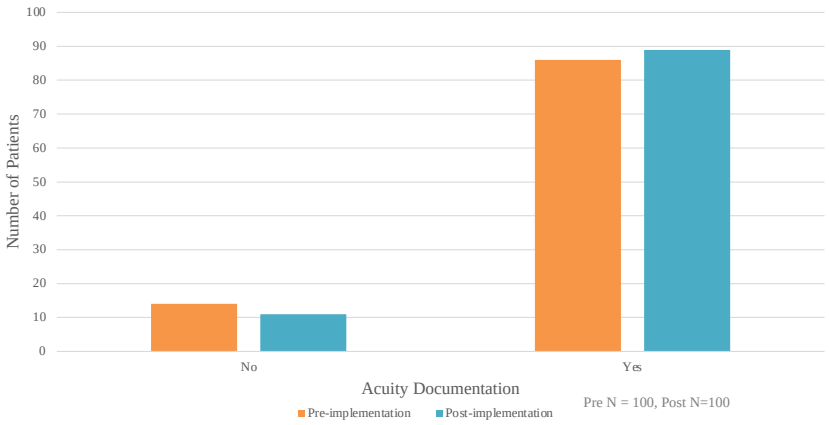
Data Set #1

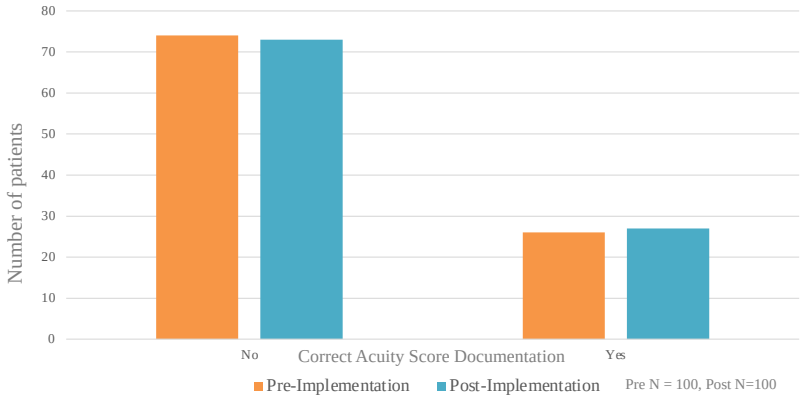
Number of patients with acuity score documented in the chart, regardless of location.



- Chi-square test statistic: 0.4114 *p* value= 0.5212 (0.05 level of significance)
- No significant improvement from pre to post implementation.
- Post implementation, the acuity score is documented on 89% of patients, from 86% of patients.

Data Set #2

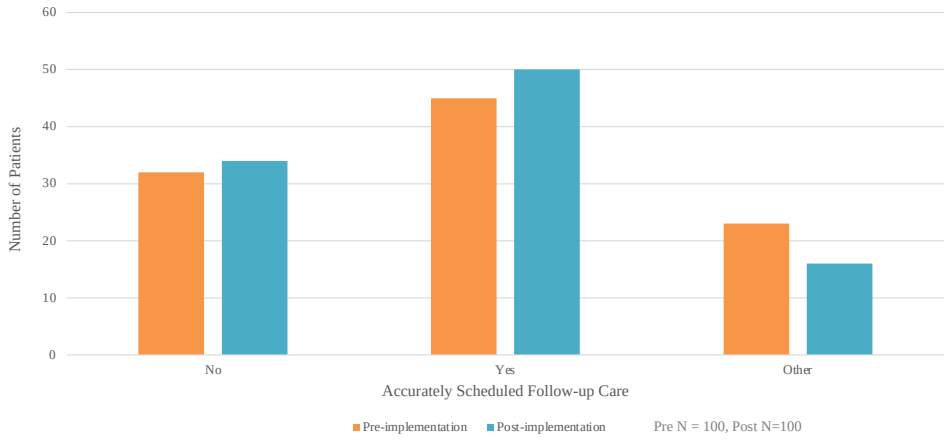
Number of patients with acuity score documented in correct location in patient encounter.



- Chi-square test statistic= 0.0257, *p* value= 0.8727 (0.05 level of significance)
- No significant improvement from pre to post intervention.
- The acuity score is documented in the incorrect spot on 73% of total patients, from 74% of totals patient pre-intervention.

Data Set #3

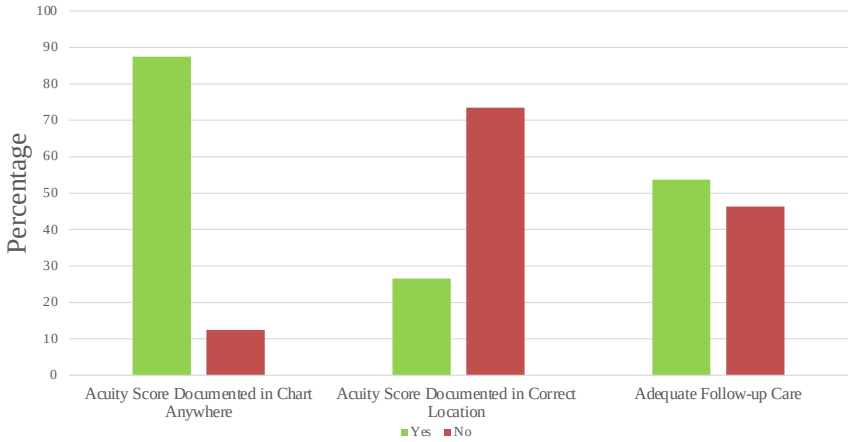
Number of patients with follow-up care scheduled as prescribed by acuity score.



- Chi-square test statistic= 0.0352 *p* value=0.8513 (0.05 level of significance)
- No significant improvement from pre to post intervention.
- 50% of patients receive prescribed follow-up care post intervention.

Data Set #4

Confidence Intervals from combined pre/post Data



- We are 95% confident that the acuity score is documented anywhere in the patient chart between 82% and 91.7% of the time.
- We are 95% confident that the acuity score is documented in the correct location on a patient encounter between 20.5% and 33.1 % of the time.
- We are 95% confident that patients have accurately prescribed follow up care between 46% and 61% of the time.

Data Set #5

Number of patients with follow-up care scheduled as prescribed by acuity score pre/post data

Pre and Post Implementation Data	Low Acuity	Medium Acuity	High Acuity
Total # patients with score*	42	97	19
Total # of patients not receiving accurately scheduled follow-up care	11 **26% of low acuity patients**	37 **38% of medium acuity patients**	14 **74% of high acuity patients**
Evidence	• Too many visits scheduled	• Not enough home visits scheduled to meet acuity tool requirements	• Not enough home visits scheduled to meet requirements of acuity tool

39.2% of patients not receiving accurately scheduled follow-up care from months of December 2022 and January 2023

*158 out of 200 total patients due to "other" patient characteristics such as, discharge from palliative care program

Comparison of Project Findings and Literature

Literature	Data
Facilitators: • **Acuity/triaging assessment tool increases follow-up care and resource allocation** • **Implementing an acuity/triage assessment tool improves clinician and patient caregiver satisfaction** • Benefit to using an acuity/triaging assessment tool to determine patient needs • Acuity/triaging assessment tool improves economic savings	• **The acuity score is documented in the incorrect spot on 73% of total patients post intervention** • 50% of patients receive prescribed follow-up care post intervention, from 45% • **Perceived attitude of scoring acuity score overall negative from staff as added work was required.**
Barriers: • **No "gold standard" for palliative care triage** • **Minimal research for acuity scoring tools to set standardized workflow** • Acuity tool neglects domains related to the holistic approach to care, creating subjective scoring	• **Post implementation, the acuity score is documented on 89% of patients, from 86% of patients** • Patients with low acuity score, are often receiving too many home visits • **Patients with high acuity score are often not having enough home care visits scheduled.**

Discussion

- **Valuable key findings from quantitative data address the clinical question**
  - Improvement in acuity score documentation, regardless of location.
  - Education provided after barriers assessed not adequate in improving correct documentation of acuity score.
  - Number of patients receiving prescribed follow-up care unchanged after receiving education.

- **Findings are not consistent with literature**
  - Inadequate resource allocation despite acuity score documentation.
  - Staff Dissatisfaction.
  - No relationship between correct acuity score documentation and accurately prescribed follow-up care.

- **Implementation and results align with the Plan-Do-Study-Act Framework and Chronic Care Model**

Limitations

- **Due to amount of patient visits, unable to include SW and RN visits to random sample**

- **Multiple places to document acuity score in EHR.**
  - Ability to document score in other locations in EHR not removed prior to intervention.

- **Telephone Encounters**
  - Wide range of purpose: medication refills, appointment rescheduling, symptom management, touch-bases.
  - Difficulty in defining which telephone encounters meet prescribed follow-up requirements.

- **Time Limitations**

Implications for Practice

- **A clear, easy to access standardized process must exist to sustain correct documentation of acuity score for team moving forward**
  - Includes reference to acuity tool to inform prescribed follow-up care for patients.
  - Includes diverse education on correct acuity tool documentation.
- **Chart audit data collection resulted in actionable items for key stakeholders**
  - A single location for documentation of acuity score.
  - Ongoing process of creating function to automatically generate acuity score reports from EHR.
  - Updated standard work document for new hires and existing staff on correct documentation of acuity score.
  - Executive summary created for stakeholders to view and share results of intervention.

Sustainability Plan:

- **Generating Automatic EHR reports of acuity score**
  - Sustainability more likely if able to pull a report of all visits in a month to audit acuity score documentation.
  - IT working on function.
- **Remove other locations to document Acuity score**
- **Incentive**
  - Include provider, RN, MSW incidence of charting on acuity assessment tool in performance reviews.
- **Use of the PDSA cycle to continue program evaluation**
  - Assess barriers for follow-up care not being achieved.
  - Chart audit RNs and MSWs on acuity score documentation.
  - Identify if a relationship exists between patient hospitalizations and inadequate prescribed follow-up care.
  - Site mentor (DNP Provider), site management, or future DNP student to sustain project over time.

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Conclusions

- **Clinical question:** Will addressing barriers of acuity tool uptake and providing education on correct documentation result in the patient receiving prescribed follow-up care?
- **Outcomes**
  - Staff successfully documents acuity score somewhere in the patient chart.
  - Correct documentation of the acuity score did not improve despite assessing staff for barriers to documenting score to inform implementation.
  - Resource allocation remains inadequate as accurately prescribed follow-up care continued to be unchanged after implementation.
  - No relationship between correct acuity score documentation and accurately prescribed follow-up care.

Dissemination

- Final Defense at GVSU
- Present findings to key stakeholders
- Upload to Scholar Works
- Manuscript submission

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DNP Essentials Reflection

DNP Essential	Achieved by:
I: Scientific Underpinnings for Practice	Literature review; Phenomenon and framework utilizations
II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking	Organizational assessment; Adapt to cultural needs
III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice	PDSA; Critically appraise literature; Apply findings to inform practice
IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Healthcare	Assess barriers and facilitators accurate acuity score documentation and accurately prescribed follow-up care; Develop strategies to improve acuity score documentation

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DNP Essentials Reflection

DNP Essential	Achieved by:
V: Health Care Policy for Advocacy in Health Care	Advocate for nursing profession; Member of MiCNP and Political Action Committee
VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes	Highly collaborative consultations; Project team and stakeholder engagement
VII: Clinical Prevention and Population Health for Improving the Nation's Health	Identified gaps in care; Analyzed data specific to target population
VIII: Advanced Nursing Practice	Project will inform health practices; Clinical experiences

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Handouts

1. Figure 1: The Acuity Tool
2. Figure 2: PRISMA Figure
3. Table 1: Literature Review Synthesis: Themes
4. Table 2: Literature Review Synthesis: Barriers and Facilitators
5. Figure 3: Project Timeline
6. Table 3: Implementation Strategies & Elements
7. Figure 4: The Acuity Assessment tool Implementation Approach to the Plan-Do-Study-Act
8. Figure 5: Intervention: Staff Education
9. Table 4: Evaluation and Measures Table
10. Figure 6: Measures and Analysis Process
11. Figure 7: IRB Determination Letter
12. Table 5: Project Budget
13. Figures 8-11: Data Results
14. Table 6: Data Results
15. Table 5: Comparison of Project Findings and Literature
16. Figure 12: Executive Summary Deliverable
17. Figure 13 Updated Standard Worksheet Deliverable

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Dissemination Deliverables

Updated Standard Work Document

Home Palliative Care Documentation

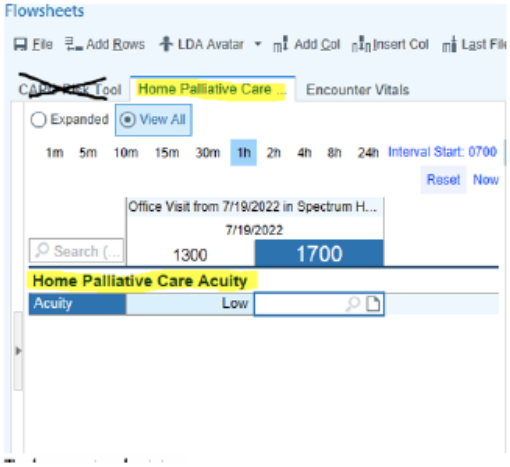
Of note- this is a guide for documenting home palliative care- the first page is used more a checklist for quick review of documentation standards. The subsequent pages include screenshots, and further explaination of guide.

New Consultation:

- Scan to coordinator whatever is applicable:
  - Consents- general are consent (only at first consultation)
  - If prescribing controlled substances- med contract and opioid start talking form
  - People involved in care form
- Vynca:
  - Can document AD and DNR right in system and print off for families
  - If completing paper documents- fax via Right Fax on computer
- EPIC Charting:
  - Login Department is
  - Check in patient- complete COVID screening
  - Change provider to yourself on schedule
  - Quick review tab: vitals, chief complaint, review patient's overview, enter in problem-based charting with assessment and plan
  - Medication Tab: perform medication rec
  - Flowsheets: Home Palliative Care Acuity
    - To update for new patients and follow-up visits.
  - Notewriter: create note and fill out appropriately ".PALLNPHOMECONSULT"
  - PDMP: check and review maps if needed
  - Plan/Wrap up tab: enter in billing, timing for next appointment, any interdisciplinary follow-up, notes to pool
  - Social determinants of health
  - Communications tab: enter in letter to referring provider
  - Add yourself to care team
  - Update code status in demographics

Flowsheets:

- Document under Home Pall Care Acuity- if patient is low, moderate, or high risk based on CAPC risk tool
- Continue to document in the **Home Palliative Care Acuity** template, NOT the CAPC Risk Tool Template OR Specialty Comments Only.



Executive Summary Presented to Project Site

DNP Project Executive Summary

Evaluating the Efficacy of an Acuity Stratification Tool in Community Based Palliative Care

Madison Niederer

Problem

- There is not consistent, correct documentation of the acuity risk tool.
- Problem results in inability for management to pull patient reports to view acuity score and assess that follow-up care is correctly scheduled.

Solution

- Assess barriers of documenting the acuity score in the correct location and provide education to increase acuity score documentation rates and prescribed follow-up care.

Intervention

- **Barriers Identified:**
  - Staff Dissatisfaction
    - Difficult to locate the correct place to document, but more time consuming to document in the correct location as compared to other locations in the EHR.
  - Staff Incentive
    - There was little incentive for staff to take the additional time required to document the score in the correct location within the EHR.
  - Automatic Reports
    - Management was required to manually review each chart to determine if the acuity score was documented correctly and if prescribed follow-up occurred.
- **Education:**
  - Screen shots of where to document in the template were sent out, with explicit instructions.

Data Collection

Pre-Intervention

- 1 month of patient visits (December) audited.
- Picked 100 random patients.
- Audited the following:
  - Was the acuity score documented at all in the chart?
  - Was the acuity score documented in the correct template?
  - Was follow-up care correct as prescribed by acuity tool?

Post-intervention

- 1 month of patient visits (January) audited.
- Picked 100 random patients.
- Audited the following:
  - Was the acuity score documented at all in the chart?
  - Was the acuity score documented in the correct template?
  - Was follow-up care correct as prescribed by acuity tool?

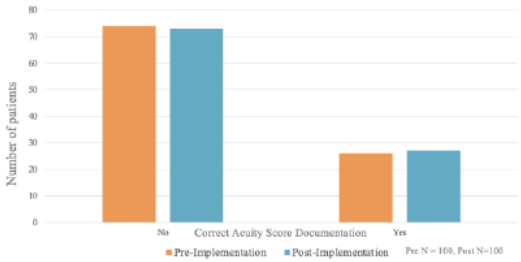
- **Telephone encounters and patients discharged from palliative care program removed from sample due to too many indications for a telephone encounter.**

- **RN visits and MSW visits removed from sample due to patient census.**

Results

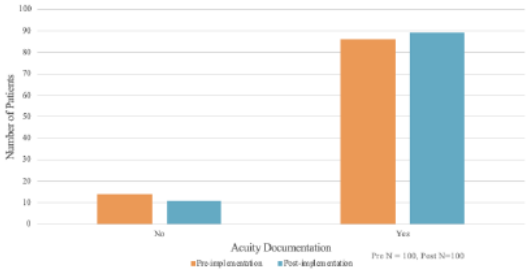
Number of patients with acuity score documented, regardless of location in EHR

- Providers do well with documenting the acuity score somewhere in the chart.
- Post-intervention data showcased **89%** of patients audited had the score documented.
- No significant improvement from pre- to post-intervention.



Number of patients with acuity score documented in correct location

- Providers struggle with documenting acuity score in correct location, even after education.
- Post-intervention data showcased **74%** of patients do not have the acuity score documented in correct template.
- It can be stated with 95% confidence that the acuity score is documented in the correct location of a patient encounter between **20.5% and 33.1 %** of the time.



Results Continued

Number of patients with follow-up care scheduled as prescribed by acuity score

- **50%** of patient's post-intervention receiving accurately prescribed follow-up care, compared to **45%** pre-intervention.
- Combining pre-and pot-intervention data:
  - Out of 158 patients:
  - **26%** of low acuity patients not receiving accurately scheduled follow-up care
  - **38%** of medium acuity patients have inadequate follow-up care.
  - **74%** of high acuity patients have inadequate follow-up care.
- ***Themes Noted:***
  - Low acuity patients are having too many home visits scheduled.
  - Medium and High acuity patients are not receiving enough home visits.

Sustainability

- Ability to run reports of acuity score is outstanding.
  - This is crucial to the success of documenting the acuity score in the correct location.
- Removing other locations to document score.
  - 'Specialty comments' and the 'CAPC Template' still being used.
  - Recommend eliminating those areas to document score so providers must document in the correct template.
- Re-education on Acuity Score Tool
  - As follow-up care is inconsistent with score, may be necessary to review each acuity score's follow-up requirements.
- Staff Incentive
  - As correct acuity score is not being prioritized, may be beneficial to include in performance reviews to increase staff incentive.