Working Towards an Age-Friendly Health System Designation: A Quality

Improvement Project Based in a Long-Term Care Setting

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Abstract

Age-Friendly Health Systems (AFHS) is a program designed by the Institute for Healthcare Improvement (IHI) in partnership with the John A. Hartford Foundation, the American Hospital Association, and the Catholic Health Association of America. AFHS is a framework based on incorporating evidence-based practices into care in a variety of settings including inpatient, outpatient, and post-acute long-term care (PALTC). There are four categories of Age-Friendly care: what matters, medication, mobility, and mentation. Aspects of the mentation category include depression, delirium, and dementia screening. In partnership with a long-term care (LTC) facility affiliated with Oregon Health and Science University, an evaluation of current processes in place for depression, delirium, and dementia screening was completed. A chart review, survey, and process map revealed organizational strengths and areas for improvement. Recommendations for implementing screenings that align with AFHS guidelines were created to provide guidance for delivering Age-Friendly care. Further research on incorporating depression, cognitive impairment, and delirium screening in the LTC setting will be important in ensuring evidence-based care and shaping future AFHS guidelines.

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Problem Description

In the United States, an estimated 4 million adults are homebound due to chronic

illnesses and functional limitations (Leff et al., 2015). Of those enrolled in Medicare fee-for-

service, 6% have two or more chronic conditions, need assistance with two or more activities of

daily living and over the last year have had a nonelective hospital stay, an unanticipated stay in a

skilled nursing facility, or an unplanned need for skilled home care (Valluru et al., 2019). While

this medically complex population makes up a small percent of Medicare's fee-for-service

beneficiaries, it accounts for about one-third of annual Medicare spending (Valluru et al., 2019).

Trends since 2000 reveal that this population experiences more hospitalizations in their final 90

days of life compared to other Medicare beneficiaries (De Jonge et al., 2014). This results in

fragmented, inefficient, and costly care that can be distressing for patients, families, and

caregivers.

In Oregon, an estimated 13% of residents living in assisted living, residential care, or

memory care are considered homebound (Carder et al., 2016). This figure does not include older

adults who are unable to access residential care due to cost or availability. The current model of

hospital and office-based healthcare does not meet the needs of this aging, vulnerable, and

overlooked population. In 2008, U.S. Senator Ron Wyden, introduced the Independence at Home

Act that established a three-year Medicare demonstration project. Through a home-based

medical care model this demonstration project was designed to promote coordinated care, avoid

hospitalizations, reduce costs, and improve patient outcomes ("Wyden, Markey," 2008). These

aims are supported by research conducted over the last ten years, which reveals home-based care

models decrease emergency department visits, reduce hospitalizations, and lead to cost savings.

These findings paired with the aging US population support further exploration of improving care for home-bound older adults.

Available Knowledge

In the last ten years, research has explored and evaluated the benefits of implementing home-based care in the United States. Current literature on primary care home visits discusses the benefits of this healthcare model including decreased emergency department visits, reduced hospitalizations and hospital stays, and cost savings. Much of the research has concentrated on a collaborative, multidisciplinary primary care model called home-based primary care (HBPC) and there is a particular focus on adults 65 years-old and older.

A retrospective analysis of patients living in a senior community found that of patients utilizing house call program 24% of concerns were addressed through a phone call, and 96% of problems were resolved through a home visit (McDermott et al. 2012). While this study was limited by size and location, the data suggest that house call programs serving medically complex, vulnerable adults may reduce dependence of emergency departments to address acute care needs.

A second-type of home-based care model is home-based primary care (HBPC) which is designed for patients who are homebound. The impact of HBPC is evaluated by several outcome measures including hospitalizations and re-hospitalizations, emergency department visits, utilization of post-acute care resources, and Medicare cost. Moderately strong evidence suggests that HBPC reduces both hospital admissions and length of stay (Totten et al., 2016). A large case-controlled study conducted in Washington, DC showed that among Medicare beneficiaries, patients receiving HBPC had 9% fewer hospitalizations compared with those not enrolled in HBPC (De Jonge et al., 2014). This finding translated to a statistically significant decrease in

costs of hospital care (De Jonge et al., 2014). Among Medicare Advantage and Medicare fee-for-service beneficiaries, patients enrolled in HBPC for two years experienced a 14% decline in hospital admissions (Mattke et al., 2015). Similarly, after a two-year period of enrollment in HBPC, hospitalizations dropped from 61% of patients having at least one hospitalization prior to enrollment to 38% after enrollment (Wajnberg et al., 2010). In a study by Jones et al. (2017), hospitalizations were shown to decrease after the implementation of an HBPC program in New York City. Rates of hospitalization pre-implementation were 56.3% among 87 study participants, compared to 37.9% after HBPC enrollment.

In a trial conducted at a federally qualified health center (FQHC) by Coppa et al. (2018), NP delivered HBPC was shown to reduce rates of 30-day rehospitalizations. After comparing data from post-HBPC implementation with data from six months prior to implementation, researchers found that patients had a statistically significant decrease in 30-day rehospitalizations by 59.4%. These patients also had a statistically significant decrease in emergency department visits by 35.56% when compared to the sixth months prior to enrollment and a 23.65% reduction in emergency department visits when compared to the year prior to enrollment (Coppa et al., 2018). An earlier study showed that after a two-year enrollment in HBPC, patients had a statistically significant 10% decrease in emergency department visits, as well as an increase in generalist visits by 105% (De Jonge et al., 2014). These investigations suggest that through HBPC, providers are able to deliver more comprehensive care to high acuity patients which contributes to decreased emergency department utilization.

Interprofessional teams delivering HBPC reduces Medicare costs in older adults with multiple chronic conditions (De Jonge et al., 2014). HBPC was associated with an average reduction of $8,477 per patient over the 2-year follow-up period (De Jonge et al., 2014). Further

data analysis showed that Medicare savings were only statistically significant in participants who

met criteria for the highest frailty, which suggests the most vulnerable populations experience the

greatest benefit from HBPC (De Jonge et al., 2014).

  Within the category of HBPC falls the Medicare demonstration project Independence at

Home (IAH). Since 2012, select primary care practices have been implementing HBPC for

patients with chronic illnesses (Centers for Medicare and Medicaid Services [CMS], 2020). The

aim of IAH is to promote high-quality HBPC by incentivizing providers through payments.

Results from the first five years of IAH do not demonstrate a clear benefit in regards to Medicare

spending. While the IAH payment incentive reduced Medicare expenditure over time, at a rate of

about $200 per beneficiary per month, the results were not statistically significant (Li et al.,

2020). This finding directly conflicts with previous data on HBPC and the IAH demonstration

project. After applying the initial savings reflected in the first year of IAH data to the 2.2 million

Medicare beneficiaries eligible for IAH, a total savings of $12-53 billion was estimated

(Kinosian et al., 2016). Conflicting results regarding the impact of HBPC on expenditures is

likely due to differences in study design, model of home-based primary care, and participants.

There is variation in how IAH and non-IAH practices conduct HBPC (Li et al., 2020).

  There are several evidence-based models for improving care for older adults including

Program for All-Inclusive Care for the Elderly (PACE), Geriatric Resources for Assessment and

Care of the Elderly (GRACE), and Acute care for the elderly (ACE) (Pelton et al., 2017). In

2017, The Institute for Healthcare Improvement (IHI) in collaboration with The John A. Hartford

Foundation adapted these evidence-based models to create a new Age-Friendly Health Systems

(AFHS) framework, with the goal of being more easily adoptable across healthcare settings (IHI,

2020; Pelton et al., 2017). This framework includes providing care which focuses on the 4Ms:

What Matters, Medications, Mobility, and Mentation. An AFHS can reduce costs by decreasing hospital admissions, emergency department visits, and post-acute care readmissions and by focusing on the patient's goals of care (Tabbush et al., 2019).

Included in the category of mentation are screening and management requirements for cognitive impairment, depression, and delirium among residents of LTC facilities. Dementia is a health condition that significantly impacts patients and families. In America, it is the fifth leading cause of death for adults over 65 years (Falk & Meredith, 2018). Screening for cognitive impairment is an important factor in caring for older adults. There are several validated screening tools including the Montreal Cognitive Assessment (MoCA), the Saint Louis Mental Status Examination (SLUMS), Mini-Mental State Examination (MMSE), the General Practitioner Assessment of Cognition, and the Ascertain Dementia 8-Item Questionnaire (Falk & Meredith, 2018). The Mini-Cog, SLUMS, and MoCA are all included in current AFHS guidelines. Both the MoCA and SLUMS can be completed in about ten minutes. The MoCA has a high sensitivity for screening for mild cognitive impairment and has been validated in patients with Parkinson's disease (Falk & Meredith, 2018).

One important aspect of Age-Friendly care is proper screening for depression in patients with cognitive impairment or dementia. Depression is common among older adults and the highest prevalence of depressive symptoms is found in patients over 80 years old, residents of care facilities, and patients with dementia (Conradsson et al., 2012). While some patients with mild to moderate cognitive impairment may be able to use self-reported depression scales, observer-rated tools are often needed for patients with dementia (Brown et al., 2015). Some common screening tools for depression include the Cornell Scale for Depression in Dementia (CSDD), Geriatric Depression Scale (GDS), Hamilton Depression Rating Scale (HDRS), and

PHQ-9. In a systematic review and meta-analysis of studies involving older adults with dementia seen in an outpatient setting, the CSDD and HDRS were found to have higher sensitivity, likely due to the incorporation of an interview with a caregiver (Goodarzi et al., 2017). Additionally, in patients with mild to moderate cognitive impairment the short and long forms of the GDS have performed similarly when compared to older adults without cognitive impairment (Lach et al., 2010; Midden & Mast, 2017). More investigation is needed to understand the methods of implementing screening for depression and dementia across long-term care facilities.

The third item under the mentation category in Age-Friendly care is delirium. Much of the research on detecting delirium in older adults has occurred in the hospital setting. Delirium is categorized into three forms, hyperactive, hypoactive, or mixed, and can lead to falls, hospital acquired infections, and cognitive decline (Guthrie et al., 2018). Delirium can also be superimposed on dementia. Compared to dementia, which develops over months and years, delirium superimposed on dementia (DSD) develops over a shorter amount of time, typically hours to days (Guthrie et al., 2018). There are several screening tools which have been validated for use in acute care settings including CAM, 4AT, Nu-DESC, and UB-2 (Fick et al., 2015; Guthrie et al., 2018; Hargrave et al., 2017).

More research is needed to determine best screening tools for the post-acute and LTC setting. Addressing this gap in the literature is important because residents of PALTC settings have several risk factors for delirium including dementia, polypharmacy, multiple medical illnesses, and advanced age (Forsberg, 2017). The incorporation of delirium and depression screening is critical in an LTC setting because the onset of depression and delirium during the first year of LTC placement is associated with recurrent delirium and more complicated clinical course until death (von Gunten et al., 2013).

The Confusion Assessment Method (CAM) is a commonly used delirium screening tool and is used in hospital and long-term care settings (Voyer et al., 2015). The CAM focuses on key characteristics of delirium including acute onset, fluctuating course, disorganized thinking, changes in level of consciousness, and inattention. This validated tool was developed through literature review and expert consensus for non-psychiatric clinicians to recognize quickly. In validation studies, the CAM has been shown to have sensitivities of 94-100%, specificities of 90-95%, a positive predictive value of 91-94%, and a negative predictive value of 90-100% (Wei et al., 2008). There have been several adaptations to the CAM including CAM-ICU and 3D-CAM (Wei et al., 2008).

The 3D-CAM and UB-2 are two brief screening tools used to help detect delirium. The 3D-CAM is designed to take three minutes to administer (Marcantonio et al., 2014). While the 3D-CAM is validated for use in an inpatient hospital setting, a 2014 validation study showed that it also performed well in patients with and without dementia, with a sensitivity of 96% in patients with dementia and 93% in patients without dementia (Marcantonio et al., 2014). The specificity was shown to be 86% in patients with dementia and 96% in patients without dementia (Marcantonio et al., 2014). Additionally, the 3D-CAM can be combined with a UB-2 screening tool (Fick & Mion, 2018). The UB-2 screening tool was first validated in hospitalized older adults (Fick et al., 2015). This screening tool is a two-question screen which asks patients to state the day of the week and the months backwards (Fick et al., 2015). If either question is wrong, a second tool, such as the CAM or 3D-CAM is used for further evaluation. Similar to the 3D-CAM, the UB-2 performs well in both patients with and without dementia with a sensitivity of 96% for patients with dementia and 86% in patients without dementia, and a specificity of 43% in patients with dementia and 69% in patients without (Fick et al., 2015). This quick screening

tool is helpful if there is insufficient time to start with a CAM or 3D-CAM. Additionally, its administration is simple which reduces barriers to use and limits the need for extensive training. A disadvantage of using the UB-2 is that it is limited in use because the patient must be able to verbalize answers.

A new screening tool, recognizing acute delirium as part of your routine (RADAR), was created to help reduce administration time and improve usability and generalizability (Voyer et al., 2015). The validation study for RADAR took place across three acute care hospital units, and five LTC facilities in Canada. In the study, research assistants and nurses administered the RADAR screen. This screening tool took an average of seven seconds to administer and required the nurse or research assistant to answer three questions: "When you gave the patient their medication was the patient drowsy? Did the patient have trouble following your instructions? Were the patient's movements slowed down?" (Voyer et al., 2015). A yes response to any of the questions was interpreted as a positive screen. Positive screens were then compared to diagnoses of delirium based on the Diagnostic and Statistical Manual of Mental Disorders (DSM).

Overall, the RADAR tool was shown to have a sensitivity of 73% and a specificity of 67%. In a sample of 40 residents of LTC facilities, the sensitivity was 100% and the specificity was 43.6%. Among 42 patients with cognitive impairment the sensitivity of the screening tool was 71.4% and the specificity was 42.9% (Voyer et al., 2015). The results of this validation study are important because the majority of research regarding delirium takes place in a hospital setting. Including LTC facilities as well as patients with cognitive impairment is essential to developing appropriate screening tools. Additionally, the ease of use and decrease in time to administer the tool, in comparison to the CAM, is helpful in increasing adoptability by nursing staff. This study was limited by the fact that the questions were focused around medication

administration. This limits the opportunities of when using a RADAR screen would be applicable.

An algorithm was also completed to help identify cases of delirium superimposed on dementia (Fick & Mion, 2018). This algorithm can be used across settings, including LTC and home, and incorporates assessing baseline cognitive function and completion of the CAM or CAM-3D. Additionally, the algorithm offers suggestions for evaluating causes of delirium, preventing injury, and following up with residents (Fick & Mion, 2018).

In a study of 235 LTC residents across multiple sites, nurse observations and nurse interviews were found to contribute to identification of delirium symptoms not detected by research assistants using the CAM (McCusker et al., 2011). The prevalence of delirium increased from 14.0% with CAM assessment only to 24.7% when results from the CAM were combined with nurse interviews and charting (McCusker et al., 2011). These findings are in contrast to results from an inpatient study which found that nurse detection of delirium had a low sensitivity of 15-31% (Inouye et al., 2001). Nurses were more likely to miss a diagnosis of delirium in patients who were over 80 years old, has vision impairment, were experiencing hypoactive delirium, or who had dementia (Inouye et al., 2001). These risk factors are particularly important because residents of LTC facilities are typically older and many have cognitive impairment. In another study involving 202 LTC residents, 43 (21.3%) screened positive for delirium by research assistants using the CAM, while nurses identified half of these cases (Voyer et al., 2012). This suggests that nurse administration of the CAM, with the incorporation of nurse observations, would be useful in evaluating for delirium in LTC residents. It also indicates that there may be differences between the ability of a nurse in an LTC setting to detect delirium compared with a nurse in an acute care setting. This may be due to better recognition of a

resident's change in baseline or involvement of family caregivers. These findings should be considered when implementing delirium screening tools in an LTC setting.

Rationale

The Knowledge-to-Action (KTA) framework was used to determine screening tools and processes (Graham & Tetroe, 2010). KTA describes two processes for implementing researching findings into clinical practice. These processes are Knowledge Creation and the Action Cycle. Knowledge Creation involves knowledge inquiry, synthesis, and the development of tools or products such as guidelines and clinical decision-making tools. The Action Cycle is the process of implementing the knowledge and further assessment. This framework is helpful in assessing barriers to implementation of interventions or knowledge and can be useful in designing interventions to fit within a specific clinical context. KTA helps create sustainable, evidence-based changes in a healthcare setting.

Specific Aims

This project was a component of a larger goal of having Oregon Health & Science University department of Internal Medicine and Geriatrics achieve the Institute for Healthcare Improvement (IHI) designation of an Age-Friendly Health System. There are two designations within AFHS which include "Participant" and "Committed to Care Excellence." Achieving the status of an AFHS Participant involves developing and submitting a plan which shows an agencies commitment to implementing 4Ms care (What Matters, Medication, Mentation, and Mobility). The designation of "Committed to Care Excellence" requires monthly submission of counts of the number of older adults who achieved 4Ms care.

The aim of this project was to implement the AFHS program at one long-term care (LTC) facility in Portland. In particular, this project focused on the mentation aspect of Age-Friendly care and how to deliver dementia, depression, and delirium screenings at the LTC facility.

Methods

Context

The Oregon Health & Science University (OHSU) department of Internal Medicine and Geriatrics sees patients in inpatient and outpatient settings, through telehealth services, and at two LTC and skilled-nursing facilities in Portland, Oregon. Currently, an APRN is based at the LTC facilities. External environmental factors that impact care delivery at these sites include restrictions associated with Medicare funding and COVID-19 precautions resulting in changes in healthcare delivery methods.

The OHSU department of Internal Medicine and Geriatrics is working towards designation of an AFHS. Both the outpatient clinic and inpatient service have received the designation of an AFHS Participant and are working towards the level of Committed to Care Excellence. To receive an Age-Friendly Health Systems designation, participants must show how they incorporate the 4Ms (What Matters, Medication, Mentation, and Mobility) into their care of older adults.

This project focused on one long-term care facility with the possibility of expanding to a second long-term care facility at a later time. Before the implementation of this project, facilities had achieved Participant status. The post-acute skilled nursing care department, was excluded from this initial project. At the long-term care facility, there are 13 permanent residents in memory care and 11 permanent residents in non-memory care. Resident age ranges from 78-98, with an average age of 87.

Intervention

This project involved gathering data of current depression, dementia, and delirium screening practices for residents at the LTC facility, evaluating current processes, and providing recommendations for screening in the future. Elements of this intervention included a review of evidence-based guidelines for depression screening in patients with dementia or mild cognitive impairment, assessment of what was being used to monitor depression, dementia, and delirium, selection of screening tools for dementia, depression, and delirium for residents with and without dementia and cognitive impairment, and creation of recommendations for screening that align with AFHS guidelines. The team involved in these steps included an APRN, geriatricians, nurses, two resident care managers, a director of social services, and pharmacists board certified in geriatrics.

Study of the Intervention

A chart review was completed to assess how many residents received depression, dementia, and delirium screening. Meetings were conducted with floor nurses, resident care managers (RCMs), and an on-site provider to help determine the current processes used to screen for delirium. A survey of floor nurses was used to help determine how they approach evaluating a patient with a suspected change in mental status. The survey was used to evaluate barriers to using a delirium screening tool, familiarity with screening tools, confidence in evaluating delirium, and interest in incorporating a tool into nursing practice.

Measures

Quantitative data on the number of residents screened with an appropriate screening tool was collected through a chart review. This included screening for dementia, depression, and

delirium. Quantitative, descriptive data, including age and gender, was collected based on patients receiving primary care at the long-term care facility.

Analysis

Univariate analysis, including mean age, was used to demonstrate characteristics of patients served at the long-term care facilities (Polit & Beck, 2021). Quantitative data was also collected to determine to what extent the facilities are implementing care within the 4M framework. Descriptive statistics was used to analyze and describe findings from the surveys.

Ethical Considerations

This project is part of a larger quality improvement project at Oregon Health and Science University. A request for determination for the larger project under the name, Age-Friendly Health System, was submitted to the Institutional Review Board and was granted an exemption. Additional ethical aspects considered included confidentiality of residents and participants, potential for misrepresentation of information, and privacy. Identifying information was removed from data and was not in summaries. Information was stored securely through the OHSU Box platform.

Results

Implementation of the Project

At the start of this project, the IHI had AFHS implementation guidelines for the inpatient and outpatient settings. As a long-term care facility is considered home for its residents, the implementation guidelines for the outpatient setting were used as a framework for determining what would be required to achieve an AFHS designation. The guidelines for the outpatient setting did not include delirium screening, while the requirements for the inpatient setting did. In January 2021, the IHI released new guidelines for post-acute long-term care facilities (PALTC).

While this project excluded post-acute care, the IHI grouped post-acute and long-term care under the same category. While post-acute and LTC are frequently part of the same LTC facility, the needs of the patients vary. The PALTC guidelines included delirium screening for residents in LTC. The project was adjusted to include delirium screening as part of the AFHS requirements. Additionally, the response to the COVID-19 pandemic shifted the organization's capacity to implement new screenings as vaccinating staff and residents became a priority.

In February 2021, the IHI invited the LTC facility to participate in a prototype focus group on how to translate the AFHS framework to a PALTC settings. This pilot group started in April 2021 and will continue until September 2021. The LTC facility agreed to be a member of this pilot program. The goals of this group include demonstrating the feasibility of implementing AFHS care in an LTC setting, learning how to adapt Age-Friendly care into COVID-19 prevention and management, evaluating changes in work flows and outcomes that measure the impact of Age-Friendly care and the 4Ms Framework on LTC resident care and staff wellness, and engaging more LTC facilities in adopting the 4Ms Framework (Institute for Healthcare Improvement [IHI], 2021). During the prototype phase six nursing homes will test proof of concept to help build understanding of how the 4Ms can be implemented consistently in LTC facilities. The IHI then plans to test scale-up and work towards adopting Age-Friendly care in 10-25 more LTC facilities, with the goal of having 100 LTC facilities providing Age-Friendly care by June 2023 (IHI, 2021). These developments in the project caused us to shift our focus from implementing depression and dementia screening, to further evaluating the depression, dementia, and delirium screening in greater detail.

Chart Review

A chart review was conducted of residents living in the LTC facility in February 2021 and included 25 residents. The mean age was 88.24 years, with a range of 78-99 years. 72% or 18 residents were female and 28% or 7 residents were male. 88% or 22 residents had a diagnosis of dementia and 3 did not. Further review looked at rates of screening for depression, dementia, and delirium among LTC residents. There was no documentation of depression screening in any resident's electronic health record. While a PHQ-9 is used to screen residents as part of the Minimum Data Set 3.0 (MDS), this information was not included in the electronic health record. Per clinician judgement, at the LTC facility, once a resident has a score of 10 or less on a MoCA or SLUMS screening they discontinue further screening with these tools. Of the 25 residents, 10 qualify for dementia screening and 8 of these residents had annual screening completed. While a CAM is completed quarterly by the social services team, this result was not included in a resident's EHR.

Process Flow

To better understand the current methods of detecting, monitoring, and managing delirium in the LTC population two process maps were created. Multiple meetings were conducted with different stakeholders including floor nurses, resident care managers, social services, and providers to discuss in detail the current steps in screening, detecting, monitoring, and managing delirium. Final process maps (Appendix A) were designed to show the current steps in screening LTC residents for delirium and the process of investigating a resident with a suspected change in mental status. These maps were reviewed with people involved in each process.

The process maps revealed the organization's reliance on nursing staff to recognize delirium in residents. While social service staff, including resident care managers, complete delirium screenings at admission, quarterly, and after a change in cognitive impairment by using a CAM-Short, this process is often completed days to weeks after an event. This timeline is ineffective in evaluating residents for delirium in a timely way. The process map also showed that there is no standard tool used by nurses to complete delirium screening.

Survey Results

A survey was distributed among nurses who care for LTC residents. The goal of this survey was to determine tools used to screen for delirium, confidence in recognizing delirium in residents with and without dementia, confidence in assessing causes, barriers to using a screening tool, and interest in using a screening tool. A five-point Likert scale and open-ended questions were used in the survey. There was a response rate of 93.3% with 14 of 15 nurses completing the survey.

Results from the survey showed that the majority of nurses were confident in their ability to recognize delirium in residents with and without cognitive impairment. In response to the statement, "I am confident in my ability to identify delirium in residents," 5 (35.7%) strongly agreed, 8 (57.1%) somewhat agreed, and 1 (7.1%) neither agreed or disagreed. The results were similar in response to the statement "I am confident in my ability to identify delirium in residents with dementia or cognitive impairment," with 4 (28.6%) strongly agreed, 9 (64.3%) somewhat agreed, and 1 (7.1%) neither agreed or disagreed. When evaluating confidence in assessing for causes of delirium 5 (35.7%) of nurses strongly agreed with the statement, "I am confident in my ability to assess for causes of delirium," 6 (42.9%) somewhat agreed, and 3 (21.4%) neither agreed or disagreed. Three (21.4%) respondents strongly agreed with the statement, "I have a

systematic way of assessing a patient with concerns for delirium or altered mental status," while

8 (57.1%) somewhat agreed, 2 (14.3%) neither agreed or disagreed, and 1 (7.14%) somewhat

disagreed. 64.3% of respondents never use a tool to screen for delirium and 35.7% sometimes

use a screening tool. Of those that sometimes use a screening tool only two listed a screening

tool and both listed the CAM. Of all respondents, three were familiar with the CAM. Barriers to

using a screening tool to assess for delirium included lack of knowledge of screening tools, with

50% of respondents answering they did not know of any tools, lack of integration with the EHR

(28.5%), a tool is not required by LTC (28.5%), and it is unnecessary to use one (7.1%). One

respondent commented that it was unnecessary because there is always a provider on-site to

confer with. No respondents selected time as a barrier to using a screening tool. All respondents

were interested in using a tool to screen for delirium with 10 selecting strongly interested and 4

selecting somewhat interested.

Overall, the survey showed that the majority of nurses do not use a screening tool

regularly when suspecting a change in cognition. Of those who do use a screening tool, the CAM

is used. While most nurses were not familiar with delirium screening tools, three respondents

were familiar with the CAM.

Implementing this project provided a context for the MDS and its role in screening

residents for depression, dementia, and delirium. While the MDS is a federally mandated clinical

assessment used in Medicare or Medicaid certified PALTC facilities to evaluate resident mood,

pain, and cognitive function, this project revealed that it does not fit AFHS parameters and

contributes to redundant work (Thomas et al., 2014). For example, a delirium screen is

completed quarterly by social services, but the results of that screen are not easily accessible to

nurses or providers. This makes it difficult to monitor trends in cognition. In developing AFHS

processes, it is important to understand the MDS and consider how work is duplicated.

Some data regarding depression, dementia, and delirium screenings may have been

omitted because of the separate systems used to store screening data. Dementia screening is

completed by different staff members and then inputted into the EHR. This contributes to

missing data. Additionally, if answers to a screening are kept separate from a resident's EHR, for

example in the MDS, the screening is incomplete. Similarly, if a provider completes a PHQ-9 or

GDS but does not input a resident's answers into the EHR, the screening is incomplete. It is

likely that rates of depression screening were higher than captured in the chart review.

Discussion

Screening for Depression

Evidenced based guidelines from the Hartford/Csomay Center of Geriatric Nursing

Excellence recommend the use of observer-rated tools to screen for depression in patients with

dementia (Brown et al., 2015). These tools include the Cornell Scale for Depression in Dementia

(CSDD) and the Hamilton Depression Rating Scale. The Hartford/Csomay Center of Geriatric

Nursing Excellence uses the CSDD which has been validated for use to rate depressive

symptoms over the complete range of cognitive impairment (Alexopoulus et al., 1988). This

specific tool is not included in the AFHS guidelines for PALTC facilities and will require

additional review by the IHI. As the chart review revealed the majority of residents have a

diagnosis of dementia, it is important to use a depression screening tool that has been validated

in patients with dementia. Practice recommendations include using the CSDD for residents who

have a MoCA or SLUMS score which indicate dementia (Brown et al., 2015).

Additionally, it is recommended that the LTC facility continues using the PHQ-9 to screen for residents with no or mild cognitive impairment. This tool is included in the AFHS guidelines, as it is approved for use in patients 12 years of age and older, and is already being used to assess for depression in residents. The GDS or GDS short form could also be considered as depression screening tools as these are validated for use in older adults. Both the GDS and the GDS short performed similarly in people with mild cognitive impairment compared to those without cognitive impairment (Lach et al., 2010; Midden & Mast, 2017). Depression screening, either through the CSDD or PHQ-9 should occur at admission, annually, and with a suspected change. To facilitate improved documentation and follow-up on depression, it is important to ensure proper documentation of PHQ-9 or CSDD scores in the electronic health record.

Screening for Cognitive Impairment

The LTC facility's current use of MoCA or SLUMS for screening for cognitive impairment upon admission, annually, and upon a change in condition aligns with AFHS recommendations. As indicated by the chart review, 23 of 25 residents received the appropriate screening for cognitive impairment. Recommendations for improving the dementia screening process include coordinating with therapy services such as physical therapy as they often complete a MoCA or SLUMS which is not included in a resident's EHR. Additional recommendations to improve with monitoring cognitive impairment includes inputting scores into the geriatric review of systems in the EHR.

Screening for Delirium

Understanding the prevalence of dementia is important because as tools are selected to be used to identify depression and delirium in LTC residents, considering tools that are effective for residents with dementia is critical. As there was no standard tool used by nurses for screening for

delirium, it is important to consider familiarity with different screening options. The CAM aligns with AFHS guidelines for use in LTC facilities. The CAM-Short includes the first four questions of the CAM, and while not yet approved by the IHI for AFHS guidelines, it could be an alternative option for screening. The CAM-Short requires less time to administer and is already used by social services as part of MDS. To help monitor trends in mental status, it may be more effective to have nurses use the same tool as social services.

Literature on delirium screening in LTC settings showed the importance of using nurse observations in combination with a screening tool. Both the CAM and CAM-Short are based off of nursing observations. This is in contrast to the UB-2 and 3D-CAM which require patient responses to questions. Screening based off of nursing observations would be more effective in assessing for delirium in residents with limited speech.

Incorporating training into the introduction of the CAM is important as only three respondents were familiar with this tool. There is training available through the American Geriatrics Society which involves both written and video training materials (American Geriatrics Society, 2019). It is also recommended that the CAM be integrated into the EHR system as survey results indicated this was a barrier to using a screening tool.

Impacts and Limitations

This project impacted the LTC facility because it involved additional administrative time. Specifically, since the AFHS program was first designed to be implemented in the inpatient and ambulatory setting, adapting the guidelines to an LTC setting required additional investigation into validated screening tools. At the start of this project, it was not expected that the IHI would invite the LTC facility to join the prototype group. While this is an opportunity to shape AFHS guidelines, it requires additional time and investment from the LTC facility.

This project was limited by the setting because it only included the LTC portion of the organization. The generalizability of these recommendations is limited because the recommendations would likely need to be tailored for settings which incorporate post-acute care. While the survey had a high response rate, respondents of the survey could have been impacted by acquiescence bias, causing more respondents to agree with a statement than disagree.

Conclusion

This project helped develop a framework for approaching the implementation of an Age-Friendly Health System at the LTC facility. By understanding what was currently being done in alignment with AFHS, facility staff and leaders became more familiar with AFHS. Exploring how the LTC facility was incorporating Age-Friendly care into their work highlighted the strengths of the care team.

Evaluating how each of the 4Ms, What Matters, Medication, Mentation, and Mobility, was being carried out in the LTC setting helped increase organizational readiness to participate in the Age-Friendly prototyping focus group. This focus group has the potential to influence AFHS guidelines for PALTC settings. In addition to the staff involved in the focus group, a resident is also participating. This helps create a more patient-centered approach to AFHS and quality improvement initiatives within the LTC facility. Involvement in the prototype group ensures a more sustainable initiative as the IHI provides additional funding and support through regular meetings and advisory sessions. By collaborating with providers, leadership, nurses, and social services to determine what was being done at the LTC facility in regards to depression, dementia, and delirium screening, there was increased interest in and involvement with the AFHS initiative. Additionally, through completing this process, many facility leaders became more familiar with AFHS.

The goal of this project was to evaluate the current depression, dementia, and delirium screening processes to prepare the LTC facility to achieve the designation of an AFHS. While a general assessment of depression and dementia screening was done, a more thorough evaluation of delirium screening was completed. This was done through a variety of methods including conducting a chart review, completing a process map, and conducting a survey of delirium identification among floor nurses.

Survey results can be used to shape interventions and choice of delirium screening tools. These results aligned with the existing literature and revealed that nurses were confident in their abilities to assess delirium in patients with and without cognitive impairment. Barriers to using a screening tool to evaluate for delirium in residents included lack of knowledge of screening tools and lack of integration in the electronic health record. Importantly, all respondents were interested in incorporating a delirium screening tool in their practice.

In regards to next steps of this project, continuing with the IHI prototyping focus group will allow the LTC facility and its staff and residents to shape the AFHS guidelines for PALTC facilities. This experience will also provide guidance and support as the LTC facility works to fulfill AFHS requirements. As the IHI AFHS implementation guidelines apply to post-acute and long-term care settings, there is potential to expand this framework to the post-acute care setting of the LTC facility, in addition to other PALTC settings affiliated with Oregon Health and Science University. Additional research about screening for dementia and cognitive impairment in LTC settings is important in understanding delirium presentation and management outside of a hospital setting, especially among patients with dementia.

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Appendix A

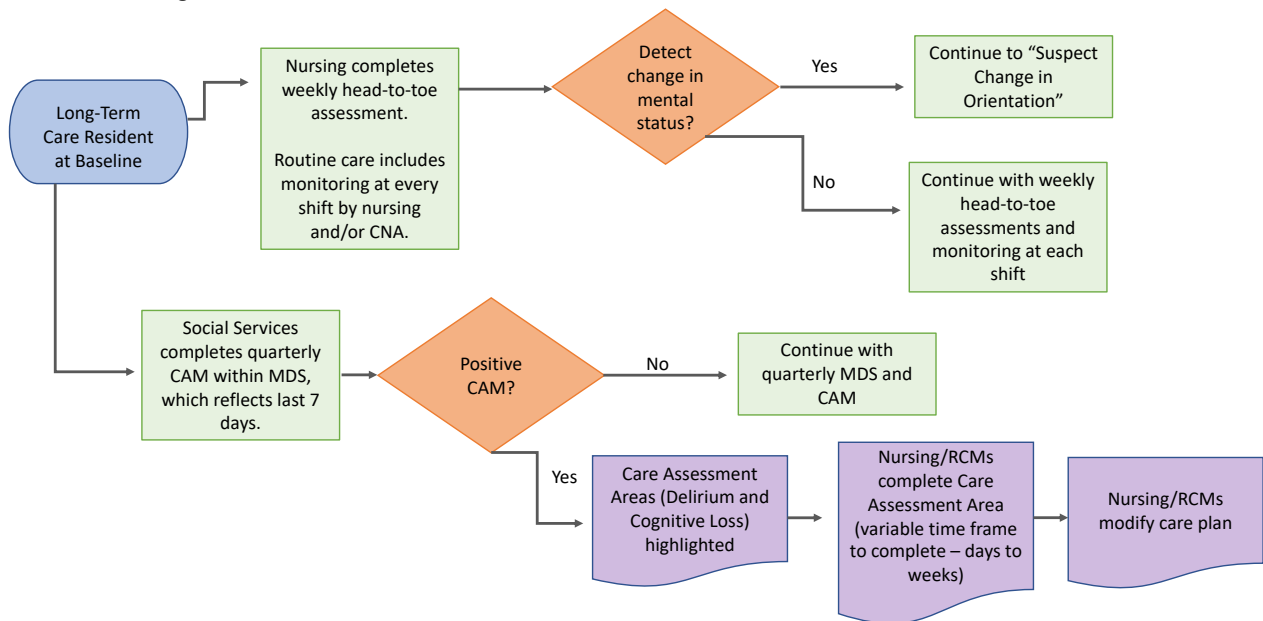Current Screening of Delirium For All Residents

Figure A1. Process map of the current steps for screening for delirium in all residents of the long-term care facility.

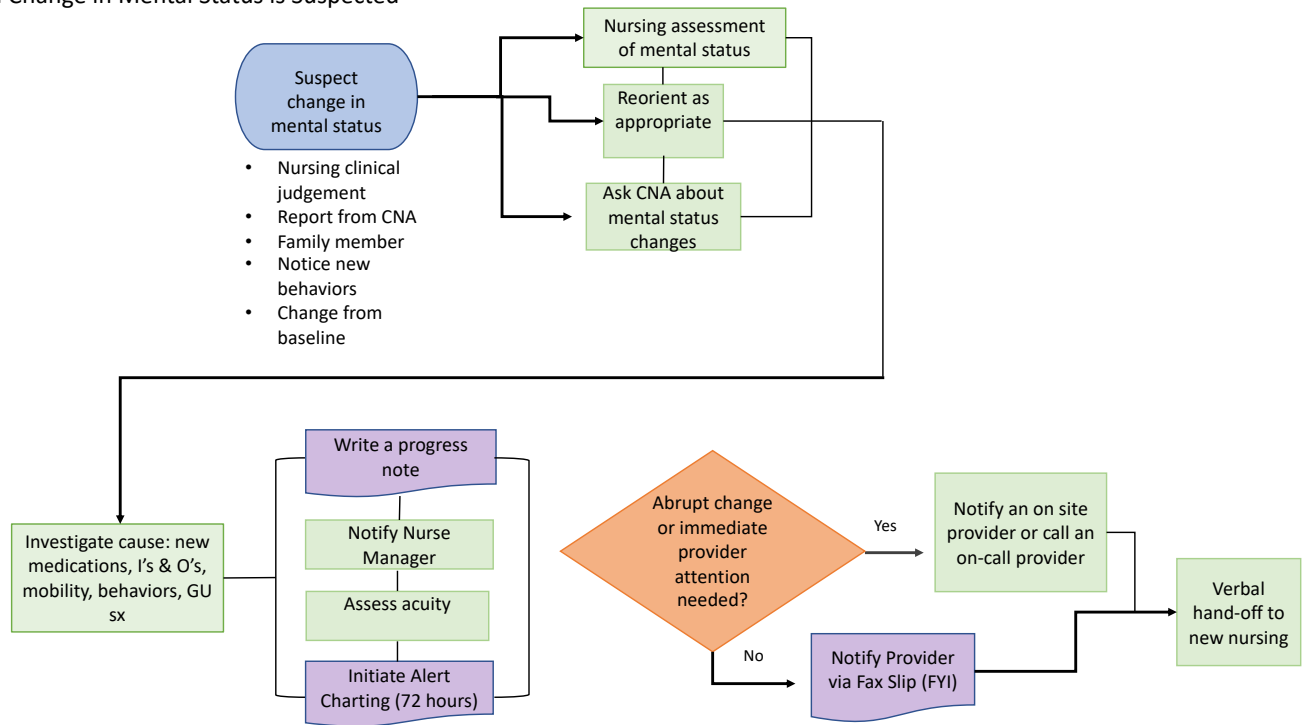If a Change in Mental Status is Suspected

Figure A2. Process map of the current steps for screening for delirium in residents of the long-term care facility with a suspected change in mental status.