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Implementation of a Delirium Protocol in a Community Living Center: A Short and Long-Term Care Facility

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Abstract

Delirium is the most frequent complication associated with hospitalizations of older adults and is responsible for 17.5 million hospital days at a cost of more than $6 billion each year. It is estimated delirium occurs in approximately 14 – 56% of all hospitalized elderly patients. Outcomes associated with delirium in the adult population are prolonged hospital lengths of stay, increased mortality, and post-hospitalization cognitive impairment. Hospitalized patients diagnosed with delirium may be discharged to rehabilitation centers or nursing homes for recuperation, and/or for permanent residence.

Delirium is often misdiagnosed because the presentation of signs and symptoms mimic other medical conditions or can be mistaken as an adverse medication reaction. The purpose of the project was to implement an evidence-based delirium protocol addressing non-pharmacological interventions for treatment. The project began with a baseline questionnaire completed by Registered Nurses (RNs) to determine educational opportunities for delirium recognition and assessment for patients in a short and long stay unit. An educational in-service was provided for RNs and included early recognition and assessment of delirium. Registered nurses were also re-educated on the use of the Brief Confusion Assessment Method and the Richmond Agitation-Sedation Scale. Finally, practice changes were initiated and the Initial Delirium Assessment in the electronic record was modified.

Keywords: Delirium, Confusion Assessment Method, Brief Confusion Assessment Method, Short Confusion Assessment Method, Richmond Agitation–Sedation Scale

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A Short and Long-Term Care Facility

Delirium is defined as an acute confused state, reversible dementia, or encephalopathy due to metabolic or toxic origins (Fong, Tulebaev, & Inouve, 2009). Inouye, Westendorp, and Saczynski (2014a) reported delirium as a common, under-recognized, complication often resulting in the death of the patient. Diagnostic and Statistical Manual of Mental Disorders 5th Edition (DSM-5) criteria identifies delirium as an acute state resulting in a fluctuation of impaired attention and awareness. Delirium is often missed, or misdiagnosed, because of the different ways that it can present (Fong, et al.).

Background and Significance

Delirium develops over a short period of time, typically hours to days, and there may be waxing and waning of attention throughout the day. Additional cognitive disturbances such as memory loss, confusion and disorientation, and problems with language may also be present. A patient's attention and awareness often worsen in late afternoon and at night, a mild form of delirium, and referred to as "sun-downing" (Evans, 1987). An older, healthy adult can develop sun downers if the patient has disruption of sleep pattern, change in environment, medication side-effects, and pain or anxiety.

Delirium has three sub-types: a) hyperactive state which results in agitation, restlessness, hallucinations, picking and removing tubes/lines, and/or emotional instability; b) hypoactive state which results in a flat affect, withdrawal, apathy, lethargy, and or decreased responsiveness; and c) combination of the two (Pisani, Murphy, Van Ness, Araujo, and Inouye, 2007; Taylor, Paton, & Kapur, 2015). The hypoactive sub-type is reported to be the most difficult to diagnose in the elderly population because of its inconsistent presentation which increases the potential for

a poorer prognosis. In addition, terminal delirium is experienced by patients in the last stages of dying.

The severity of delirium is dependent on the number of modifiable and non-modifiable risk factors a patient possesses (Fong, et al., 2009; Taylor, et al., 2015). Potential modifiable risk factors include medications, immobilization, especially if the patient has a urinary catheter or other invasive lines, concurrent infection, such as a urinary tract infection, and pain. Non-modifiable risk factors include the diagnosis of dementia, previous neurological events, multiple health issues or comorbidities such as chronic renal or liver disease, and age greater than 65 years. Another risk factor for health care providers to consider is that a prolonged hospital stay can increase the risk for delirium (Eeles & Rockwood, 2008; Barr et al. 2013).

Survivors of delirium may develop temporary or permanent cognitive impairment resulting in disturbances with memory, orientation, language, perception and failure to return to baseline function (Eeles & Rockwood, 2008; Fong, et al., 2009). As a result, the elderly population who survive delirium often have greater nursing care needs and required resources for their care, resulting in increased healthcare costs (Eeles & Rockwood). Many of these patients also have impaired mobility and can develop further complications with falls and skin issues.

Failure to diagnose delirium is associated with increased mortality (Barr, et al. 2013; Eeles & Rockwood, 2008; Taylor, et al., 2015). Inouye (2006) reported hospital mortality rates of 35-40% within one year for patients diagnosed with delirium. Therefore, it is imperative that timely recognition of delirium takes place to treat the underlying causes and prevent negative outcomes.

Purpose Statement

The purpose of the evidence-based delirium protocol project was to implement best practices regarding the early recognition and assessment of delirium in the Community Life Center (CLC), a short and long-term care facility affiliated with a Veterans Administration (VA) hospital in Kentucky. To promote early recognition and assessment of delirium, changes were made requiring Registered Nurses (RNs) to perform a patient's Initial Delirium Assessment (IDA) within 24 hours of admission, a previous responsibility of recreational therapists. Other changes included the addition of the Richmond Agitation Sedation Scale (RASS) and the sub-types of delirium to the IDA. Finally, a non-pharmacological delirium protocol was developed for the CLC.

Review of the Literature

The literature review consisted of investigating evidence-based practice guidelines, research studies addressing the recognition and assessment of delirium, and a systematic review of the evidence to facilitate the development of a delirium protocol for the CLC. The search was restricted to research and current clinical practice guidelines dated since 2008, except for those studies identified as seminal work. Key words used were Delirium, Confusion Assessment Method (CAM), Brief Confusion Assessment Method (bCAM), Short Confusion Assessment Method (Short CAM), and the Richmond Agitation–Sedation Scale (RASS).

Clinical Practice Guidelines

Two evidence based protocols were identified from AHRQ (http://www.guideline.gov/content.aspx?id=43920&search=Delirium) and NICE (http://pathways.nice.org.uk/pathways/delirium) addressing key areas to include in the evidence based delirium protocol for the CLC. The AHRQ (2013) guidelines' scope and purpose were to

provide a clinical practice protocol to reduce the incidence of delirium in the hospitalized older adult patient. The guidelines included assessment of risk factors, the features of delirium, and required frequency of patient monitoring. Stakeholders identified were the geriatric population and personnel such as advanced practice nurses, physicians, nurses, and other health care providers.

The AHRQ guidelines were developed by an interdisciplinary clinical work group utilizing a combination of evidence- and consensus-based processes. Guideline validation was performed by internal and external peer review. The guideline developers were from the American Medical Directors Association and the group reaffirmed the guidelines in 2013.

The NICE clinical guidelines (2015) also addressed patients at risk for delirium, general care for patients with delirium, and included recommendations to assess patients within the first 24 hours of admission to obtain baseline information; as well as interventions to prevent delirium. The aim of the NICE clinical guidelines were to improve the process and outcomes in the care of patients aged 18 years of age and older in the hospital and long-term care settings. The guidelines were also designed to improve the diagnosis of delirium, therefore reducing the number of hospital days and complications related to delirium. The guidelines were reviewed and updated by the Quality Standards, an Advisory Committee, and NICE Project Team in 2015.

Delirium Assessment Instruments/Tools

An extensive review of the research identified the original primary study conducted by Inouye, et al. (1990) who developed the CAM tool which included an algorithm for identifying and assessing delirium. The initial study was, and continues to be, the basis for the development of the bCAM and Short CAM delirium assessment tools.

Confusion Assessment Method

The CAM was developed and validated by Inouye, et al. (1990) as a standardized instrument to coincide with the DSM-III-R (1987) criteria, and intended for use by non-psychiatric clinicians to diagnose delirium. The CAM was created to assess cognitive impairments found to identify delirium. Validation of the CAM was completed as a prospective study involving two sites, including Yale University and the University of Chicago. The study conducted by Inouye et al. included 56 subjects, ages 65- 98 years of age, from medicine wards. Researchers found a sensitivity of 100% and 94% respectively and a sensitivity of 95% and 90% respectively with the CAM tool. The positive predictive accuracy of diagnosing delirium was 91% and 94% and the negative accuracy was 100% and 90% respectively when evaluated by Inouye, et al. in 1999.

bCAM

Several delirium assessment versions emerged from the original CAM. The CAM-ICU was developed by Ely, et al. (2001) and from the CAM-ICU, the bCAM was then developed by Han, et al. (2013) specifially to create a quicker and more accurate means to assess for delirium in the ED and acute care settings. Use of the bCAM also requires a brief mental status evaluation, such as Delirium Triage Screen (DTS), as well as use of the RASS to assess for level of consciousness. Han et al. found if results of the DTS were negative, no additional testing was needed. However if the DTS was positive, the bCAM and RASS need completed.

The time to complete the bCAM is less than 1 minute and approximately 5 minutes when including the DTS and RASS assessments (Han, et al., 2013). The bCAM can be performed by non-psychiatric clinicians and has been validated for use in the emergency department and other non-critical care areas to assess for delirium (Han, et al.). The bCAM had a sensitivity of 98%

and a specificity of approximately 55% for both the physician and the research assistant. The bCAM sensitivity was found to be 84% when performed by the physician and 78% when performed by the research assistant and a 95.8% specificity when the assessment was performed by a physician and 96.9% when conducted by the research assistant (Han, et al.).

Short CAM

The Short CAM was developed by Inouye, et al. (2014b) and designed for non-psychiatric trained clinicians to identify the presence or absence of acute changes in mental status, inattention, disorganized thinking, and/or altered level of consciousness, and to identify the intensity of delirium signs and symptoms in the elderly. The Short CAM takes approximately 5 minutes to perform and is easier to use than the original CAM instrument (Sullivan, 2014). The Short CAM was validated in one study with a reported overall sensitivity of 94% and specificity of 89% (Wei, Fearing, Sternberg, & Inouyve, 2008).

Richmond Agitation-Sedation Scale

The RASS is predominantly used in the intensive care unit, however can be used in other levels of care (Sessler, et al., 2002). The RASS is primarily used when titrating sedative medications, especially with patients on ventilators; however can also be used to assess and evaluate agitated behavior, and is part of the bCAM assessment tool. The RASS differentiates levels of patient anxiety or agitation, +1 denotes restless behavior to +4 for combative behavior. A zero score indicates a patient is alert and calm while a -1 describes drowsy and not fully alert, to -5 unarousable.

Evidence-Based Practice Model

The Johns Hopkins Nursing Evidence Based Model (JHNEBP) was the practice model used for this project (Dearholt & Dang, 2012). The model is an open system affected by internal

and external factors. Internal factors may include, but are not limited to leadership, organizational values, equipment and staffing, while external factors may include, accreditation bodies such as Joint Commission, regulatory bodies such as state and local government, and state boards of nursing. The JHNEBP model consists of 18 steps addressing three phases, including the development of the practice question/s, evidence to be examined, and translation of how the practice change will be designed, conducted, and assessed (see Table 1).

Methods and Procedures

Setting and Subjects

The evidence-based delirium protocol project was led by a Mental Health Advanced Practice Registered Nurse (APRN), Doctor of Nursing Practice candidate, and was implemented in a CLC facility affiliated with a VA hospital in Kentucky. All patients admitted to the CLC facility were assessed for delirium risk upon admission per facility policy and were included in the evidence-based delirium protocol project. The CLC population consisted of short stay rehabilitation, respite, and palliative/hospice patients, as well as patients requiring prolonged intravenous antibiotic therapy or awaiting nursing home placement due to dementia or medical/surgical health complications.

Registered nurses on the day shift of the CLC were included in the project. The nurse manager of the CLC recommended only day shift RNs participate since admissions primarily occurred on that shift. The remaining RN staff continued to report acute mental status changes or behavioral issues during shift change face-to-face report.

Current Practices

Several practices at the CLC led to the development of this evidence-based delirium protocol project. When the IDA was initially introduced, responsibility for completing the

assessment was assigned to Recreational Therapists (RTs) and the RNs in the CLC. Over time the RTs began completing all delirium assessments. The Mental Health APRN, DNP candidate observed the practice and recommended to nursing administration that the IDA be completed solely by the RNs within the first 24 hours of a patient's admission. In addition, the Mental Health APRN noted the three sub-types of delirium were not included in the IDA as supported by the literature.

Secondly, treatment for CLC patients who developed confusion and disorientation initially included medications such as benzodiazepines and/or mood stabilizers, with little attention given to the possible causes for the acute changes in behavior. In addition to pharmacotherapy, a consult was typically placed by the CLC APRN or physician to the Mental Health APRN, to address the behaviors without attempting to identify the cause.

Third, in the CLC Computerized Patient Record System (CPRS) the bCAM and RASS tools were available, however, the RASS was located in the reassessment section of the IDA template and not on the initial IDA assessment, making it difficult for the RNs to locate. The bCAM requires the use of the RASS to assess for level of consciousness, therefore, part of the IDA was incomplete.

Project Phases

Phase 1.

The need for an evidence-based protocol became evident to the Mental Health APRN, DNP candidate after receiving several consults from a CLC APRN revealing patients with delirium, along with failure to recognize the condition and/or absence of finding a cause. Concerns were conveyed to the leadership of the CLC by the Mental Health APRN, DNP

candidate and a team was tasked with reviewing the research to determine evidence-based delirium programs and guidelines, and then develop an evidence-based protocol.

A CLC nurse manger recommended staff nurses who could serve as project champions. An interdisciplinary team was formed and consisted of the Mental Health APRN, DNP candidate, one Clinical Nurse Specialist (CNS), one pharmacist, two nurse champions, and one nurse aide. Team member roles were discussed and projected dates and times for weekly meetings were negotiated. In addition, the Mental Health APRN, DNP candidate communicated weekly activities and progress with nursing leadership.

The project's progress was communicated to staff at scheduled weekly interdisciplinary care meetings. Staff questions were solicited, concerns were addressed, and ideas were encouraged. Based on the literature reviewed and results from a needs assessment staff nurse questionnaire, the team asked the following PICO question: What effect will an evidence-based practice change have on the early recognition and assessment of delirium in patients admitted to the short and long-term care facility?

The interdisciplinary team identified the project's major stakeholders as the patients. Additional stakeholders were the providers including physicians, APRNs, RNs, pharmacists, recreational therapists, clinical application coordinators, and CLC administration.

Phase 2.

An internal review of delirium protocol practices at other CLCs in the VA system was completed by the Mental Health APRN, DNP candidate collaborating with the CLC CNS. After an intense search throughout the VA system, either no other CLC had a delirium protocol, or facilities did not respond to our requests. It was identified that in 2015 a delirium preventative

program was implemented in the acute care areas at the CLC, however it did not include a clinical protocol nor information concerning recognition or treatment of delirium.

An external literature search for evidence was conducted to support practice changes at the CLC and two evidence-based delirium clinical guidelines were identified. The Appraisal of Guidelines for Research and Evaluation II (AGREE II) (Brouwers et al., 2013) instrument was used to review, evaluate, and compare the NICE Clinical Guideline 103, Delirium: Prevention, Diagnosis and Management; and the AHRQ National Guidelines for Diagnosing and Management of Delirium. (see Table 2).

The AGREE II instrument consisted of 23 key elements divided into six domains and two "Overall Assessment" elements for scoring. The AGREE II is based on a rating scale of 1 - strongly disagree to 7 - strongly agree. A score of 1 is given if no information fulfills the criteria. A score of 7 is given if the information is outstanding and fully meets the criteria.

The external literature search also identified a systematic review prepared by the Health Services Research & Development Service (HSR&D) for the Department of Veterans Affairs recommending a systematic screening for delirium to prevent poor outcomes, improve early detection of delirium, allow for early intervention for treatment, and minimize permanent injury (Greer, et al., 2011). The systematic review provided the level of evidence, inclusion and exclusion criteria, patient characteristics, and outcome evaluation recommendations.

Phase 3.

After a thorough review and evaluation of the NICE and AHRQ clinical guidelines, and review of the recommendations for delirium screening, prevention and diagnosis from the Department of Veterans Affairs HSR&D (2011), the decision was made to pursue practice changes at the CLC. The interdisciplinary team believed there was strong enough evidence to

support a new delirium protocol to address early recognition and assessment of patients admitted to the short and long-term care facility.

The initial idea for an evidence-based delirium protocol project originated after a discussion between the Mental Health APRN, DNP candidate and the medical director of the CLC in September 2016, followed by discussions with the CNS. Approval of the project was ultimately obtained from the medical director, the chief nursing officer, and the nurse manager of the CLC facility in May 2017. The nurse manager stated approvals from the nursing union were also required because of the proposed practice change. Union approval was obtained July 2017 by the president and vice-president of the National Association of Government Employees (NAGE).

Approval to modify and use a 10-item questionnaire, as a needs assessment for RNs, was obtained March 2016 from Jennifer Densmore, one of the authors of the delirium questionnaire (Edwards, Densmore, and Whitehead, 2005). The Institutional Review Board (IRB) granted the project exempt status in May 2017.

Phase 3 (see Table 2) officially began with educational in-services for the RNs based on results from the literature review and a needs assessment delirium questionnaire previously completed. The educational in-services included review of delirium, the bCAM and RASS instruments, modifications to the IDA, and presentation of the non-pharmacologic evidence-based delirium protocol with corresponding changes to the CPRS.

The educational in-services were taught by the Mental Health APRN, DNP candidate, lasted approximately 30 minutes, and included an interactive lecture with handouts and time allotted for questions and answers. Completion of in-services and progress meeting the project's goals were communicated to the CLC leadership by the DNP candidate weekly for the first

month and then as each activity was completed. On-going delirium educational in-services were recommended by CLC leadership at the completion of the DNP project.

Modifications were made to the CLC's IDA and included the RNs assuming responsibility for completing the assessment within 24 hours of a patient's admission. The nurse manager was approached by the Mental Health APRN, DNP candidate to change the practice to require an RN assessment in an effort to provide more accurate and concise data and to decrease the likelihood of missing a delirium diagnosis. The assessment is a deliberate inquiry and systematic compilation of biologic, social, and psychologic information to determine the patients current and past health, how functional patients are, and how patients are responding to current health and mental problems (Boyd, 2012).

A second modification to the IDA included the addition of the three subtypes of delirium. The subtypes were added to the first section of the IDA, within the CPRS, allowing for RNs to easily access the information. The NICE clinical guidelines (2015) recommended the addition of the sub-types of delirium as treatment interventions are different for each.

Lastly, the Mental Health APRN, DNP candidate noted the RASS was not included in the initial section of the IDA within the CPRS. The bCAM requires the RASS as part of the assessment, therefore, the recommendation was accepted by the CLC director to move the RASS to the initial section of the IDA for RNs ease of use.

The non-pharmacologic delirium protocol implemented at CLC was an adaptation of the ICU delirium protocol developed by the Critical Illness, Brain Dysfunction, and Survivorship (CIBS) Center in 2012, and focuses on interventions to prevent, recognize, and treat delirium (see Figure 1). The non-pharmacologic delirium protocol was developed as a tool to guide staff from a patient's initial admission through their entire length of stay at the CLC. The protocol was

reviewed and approved by nursing leadership and medical director of the CLC and will be published in the VA Hospital, Lexington Kentucky's intranet protocols section.

The practice changes were monitored and communicated to the CLC leadership in the second quarter of 2018. Evaluation of available project outcomes are shown in Table 3.

Discussion

Delirium is a common complication in hospitalized patients, with no single cause, and can result when a person has predisposing health factors. Delirium is responsible for increased length of stay, falls, transfers to hospitals from non-acute care facilities, and mortality. Delirium can affect patients 65 years of age and older because of physiological changes such as hearing and sight loss and metabolic changes with aging. Most elderly patients have increased comorbid conditions, so delirium is often misdiagnosed or is a totally misdiagnosed. Complicating the diagnosis of delirium, is the patient who is admitted to a hospital or long-term care facility with other medical and/or surgical conditions that can have similar signs and symptoms as delirium.

The PICO question was partially addressed by the development of the evidence-based practice changes regarding the prevention, early recognition, and assessment of delirium in patients admitted to the CLC facility. The changes introduced resulted in a more user-friendly CPRS and 100% RN compliance in completing the IDA within 24 hours of a patient's admission. Further investigation is required to determine if the practice changes impacted the recognition and treatment for patients diagnosed with delirium after their initial admission assessment.

Recommendations from the interdisciplinary team include collecting additional long-term data in an effort to determine the effectiveness of practice changes. Currently at the VA psychotropic medication use is reported weekly during interdisciplinary rounds. The

recommendation is for the Mental Health APRN to track and trend psychotropic medication use, and report usage to the interdisciplinary team, as one measure of effectiveness. In addition it is recommended the Mental Health APRN conduct periodic chart reviews from the CPRS Behavior Intervention Note. Data collected will include the non-pharmacologic prevention interventions as outlined in the new protocol.

A few barriers were encountered during the implementation of the evidence-based delirium protocol and practice changes. Initially, the director of the CLC and the nurse manager were concerned the proposed practice change would increase workload on the RNs. The RTs were instrumental in alleviating any concerns of excessive time or workload on the RNs by demonstrating how easy the assessment was to complete. As predicted, the RNs voiced concerns about the additional time needed to complete the IDA. However once the RNs were able to access practice templates in the CPRS and complete the assessment in less than 5 minutes, the changes were accepted by the RN staff.

Another barrier was the delay in CPRS changes requested, as several weeks passed before the changes were made. The clinical applications clerk (CAC) was contacted to determine reasons for the delay in implementing the requested changes. Ultimately the chief nursing officer responsible for the CLC needed to expedite the recommended changes to the IDA.

Open and frequent communication between the Mental Health APRN, DNP candidate, nurse manager and the director of the CLC were the foundation for implementing a successful evidence-based delirium protocol. Meeting with the nurse manager provided insights into how the unit functioned while meeting with the medical director of the CLC gave insight regarding the goals and expectations from an administrative perspective. Both the director of the CLC and

the nurse manager voiced concerns about the potential increased time it may take RNs to complete the IDA, however, both agreed that RNs should perform the IDA.

Lastly, the Mental Health APRN, DNP candidate has been selected to participate on a strategic planning initiative as an expert on delirium and the in-service materials, assessment information, and evidence-based delirium protocol are being considered for implementation in acute care.

Table 1. Phases of Implementation of Delirium Project

JHNEBP Steps	Timeframe	Activities to be completed	Person(s)/team responsible
EBP Project Phase 1			
1 – Recruit team	Month 1	Interdisciplinary team to include: DNP Candidate, Clinical Nurse Specialist, Pharm-D, Registered Nurse Champion, Nurse Aide	Project Manager
2 – Develop PICO question	Month 1	practices, define population, identify current practices	Project Manager
3 – Define scope of question and identify stakeholders	Month 1	Determines stakeholders and how the problem affects multiple disciplines	Interdisciplinary team
4 – Determine responsibility of project leadership	Month 1	Identification of the team leader	Interdisciplinary Team
5 – Schedule team meetings	Month 1	Determines meeting place, Determine when participants can meet Maintains tools, items for meeting	Team leader
EBP Project Phase 2			
6 – Conduct internal and external search for evidence	Month 1	Reviews clinical practice guidelines, evidence-based quality improvement data, reviews needs assessment	Interdisciplinary team
7 – Appraise level and quality of each piece of evidence	Month 1	Assess and evaluate research and non-research evidence	Interdisciplinary team
8 – Team summarizes the relevant findings that answers the EBP question	Month 1	Evaluates and records the evidence	Interdisciplinary team
9 – Synthesizes strength and quality of the evidence	Month 1	Determines the strength and quality of the evidence	Interdisciplinary team
EBP Project Phase 3			
10 – Develop recommendations for change based on the evidence synthesis	Month 2	Determines recommendations to establish evidence into practice Questionnaire completed	Interdisciplinary team Team leader

11 – Determine fit, feasibility, and appropriateness of recommendations for transition pathway	Month 2	Obtained permission from leadership and clinicians concerning recommendations for practice changes	Interdisciplinary team
12 – Create action plan	Month 3	Develops evidence-based delirium protocol and provided in-services for the day shift RNs	Interdisciplinary team
13 – Obtain support and resources to implement action plan	Month 3	Communicates and works closely with department and organizational leaders for successful implementation of protocol	Interdisciplinary team
14 – Implement action plan	Month 4	Provides in-services to communicate practice changes	Select members of the Interdisciplinary team
15 – Evaluate outcomes	Month 4	Team evaluates outcomes and determines opportunities for learning	Interdisciplinary team
16 – Report outcomes to stakeholders	Month 4	Team reports outcome results to leadership	Interdisciplinary team
17 – Identify next steps	Month 4	Team reviews the process, determines if any lessons learned, and if additional steps need to be taken	Interdisciplinary team
18 – Disseminate findings	Month 4	Communicate findings to the organization	Interdisciplinary team

Table 2

Comparison and Scoring of NICE Clinical Guidelines and AHRQ Guidelines Using AGREE II Instrument (2013)

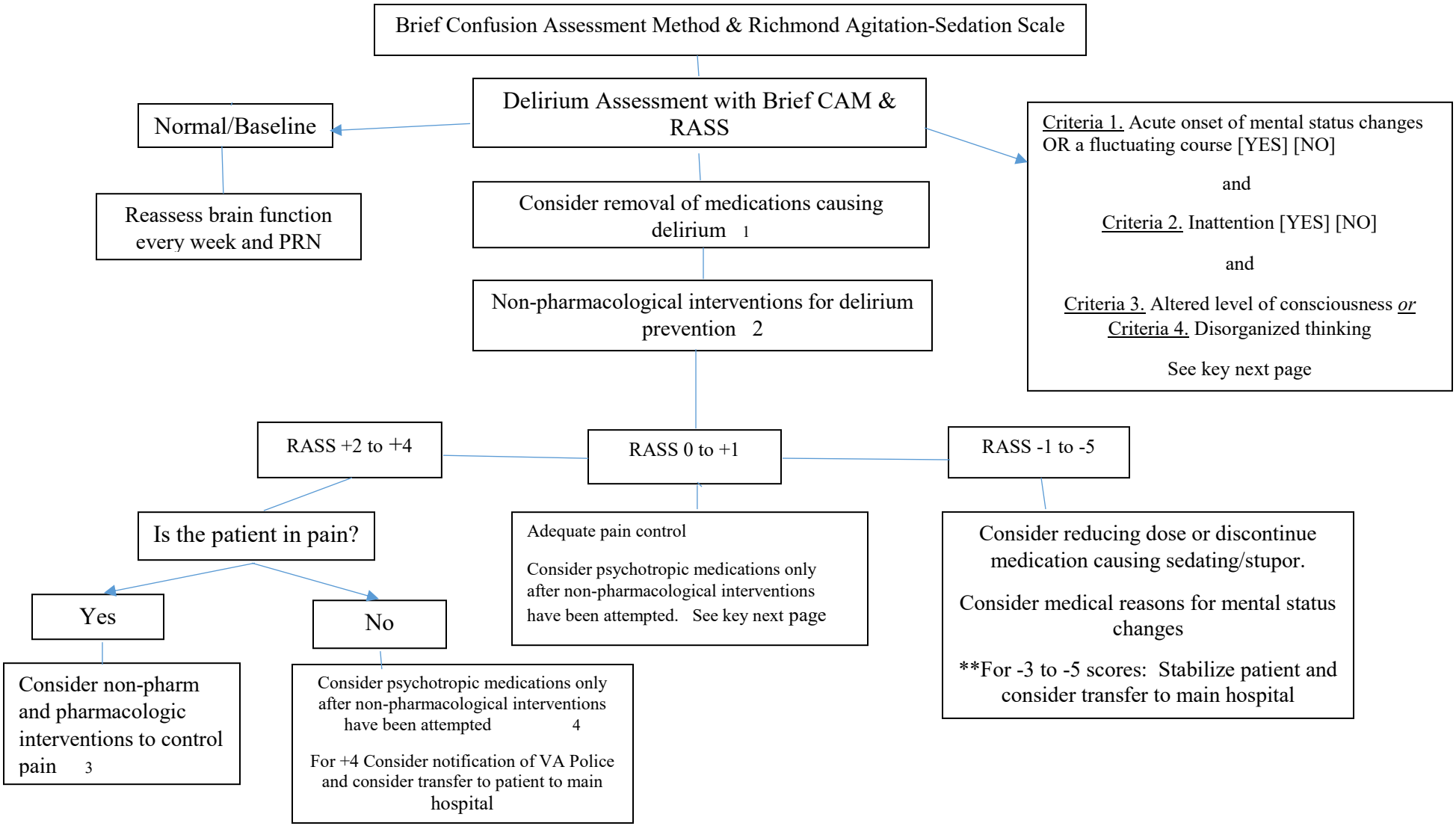
Agree II Instrument Domains	NICE Clinical Guideline 103	AHRQ Guidelines	NICE Score	AHRQ Score
Domain 1: Scope and Purpose				
1. The overall objective(s) of the guideline is (are) specifically described.	Addresses prevention, recognition, diagnosing and treating delirium	Addresses prevention, recognition, diagnosing and treating delirium	7	7
2. The health question(s) covered by the guideline is (are) specifically described.	Person-centered care - Lists key priorities for implementation	Describes methods of preventing, identifying, diagnosing, and treating delirium	7	7
3. The population (patients, public, etc.) to whom the guideline is meant to apply.	18 years of age and older, in-hospital and long term care. Excludes end-of-life patients, intoxication/withdrawal from drugs/alcohol	18 years of age and older, in-hospital and long term care. Excludes end-of-life patients, intoxication/withdrawal from drugs/alcohol	7	7
Domain 2: Stakeholder Involvement				
4. The guideline development group includes individuals from all relevant professional groups.	Guideline Development Group, NICE project team, and Guideline review panel NICE delegated the National Clinical Guideline Centre (NCGC) to develop the guideline	All intended users and clinical specialties were identified	7	7
5. The views and preferences of the target population (patients, public, etc.) have been sought.	Identifies target population, designated caregiver population	Satisfaction of care was asked of patient, family and caregiver delivery of care	7	7

6. The target users of the guideline are clearly defined.	Provides all recommendations for all healthcare professionals	Target users clearly identified	7	7
Domain 3: Rigour of Development				
7. Systematic methods were used to search for evidence.	Referencing the full guideline, provided risk factors, new evidence reviewed annually, and methodology	Section with a search strategy. Used Cochrane Database pf Systematic Reviews, CINAHL, and Medline or Pubmed	7	7
8. The criteria for selecting the evidence are clearly described.	Referencing the full guideline, criteria updated annually, concise	Listed rating scheme by levels of evidence, VI levels listed	7	7
9. The strength and limitations of the body of evidence are clearly described.	Commentary on new evidence found in full guideline, references listed "Think delirium" criteria: evidence supports frequent observation to prevent negative outcomes from delirium	Method used to assess quality and strength of the evidence scored by weight according to a rating system	7	7
10. The methods for formulating the recommendations are clearly described.	"Think delirium" criteria lists concise recommendations for patients in-hospital and long term care	Methods used to formulate the recommendations by expert consensus.	7	7
11. The health benefits, side effects, and risks have been considered in formulating the recommendations.	Risk factor assessment found in full guideline addresses 3 types of delirium, benefits of observation with delirium especially hypoactive	Potential benefits were listed for the patient, the healthcare provider, and the institution. Potential harms not listed.	7	7
12. There is an explicit link between the recommendations and the supporting evidence.	Supporting evidence with key references after each sub-section	Evidence supporting the recommendations listed under types of evidence supporting the recommendations	7	7

13. The guideline has been externally reviewed by experts prior to its publication.	Appendix B identifies an independent review panel overseeing the guideline development	Method of guideline validation was performed by internal and external peer review	7	7
14. A procedure for updating the guidelines is provided.	New evidence is updated every 3 years or sooner	Dates for revised guideline did not specify a routine for updates	7	1
Domain 4: Clarity of Presentation 15. The recommendations are specific and unambiguous.	Descriptions are clear and concise	Recommendations are detailed, clear and concise	7	7
16. The different options for management of the condition or health issue are clearly prescribed.	Delirium in long-term care is addressed separately; information is concise and clear	Delirium is addressed in the long-term care setting, and as evidence-based geriatric nursing protocols for best practice	7	7
17. Key recommendations are easily identifiable.	Recommendations reflect the key information of the guideline	Recommendations are listed as Major Recommendations and include assessment parameters, features of delirium, nursing strategies, follow-up monitoring	7	7
Domain 5: Applicability 18. The guideline describes facilitators and barriers to its application.	Barriers were listed as uncertainties Facilitators were not found	Barriers were not listed, only potential benefits, not facilitators	4	4
19. The guideline provides advice and/or tools on how the recommendations	Implementation see: www.nice.org.uk/guidance/CG103	Implementation strategy was not provided, but the tools were provided.	7	7

can be put into practice.				
20. The potential resource implications of applying the recommendations have been considered.	Found in full guideline	Included potential benefits for the patient, healthcare provider, and institution.	7	7
21. The guideline presents monitoring and/or auditing criteria.	Daily observations at a minimum	Very specific monitoring and strategies were included in the recommendation	7	7
<u>Domain 6</u>: Editorial Independence 22. The views of the funding body have not influenced the content of the guidelines.	Guideline review panel responsibilities	The National Guideline Clearinghouse (NGC) disclaimer	7	7
23. Competing interests of guidelines development group members have been recorded and addressed.	Guideline review panel responsibilities	The National Guideline Clearinghouse (NGC) disclaimer	7	7
Overall Guideline Assessment 1. Rate the overall quality of this guideline			6.96	6.60
2. I would recommend using this guideline			Yes, with modifications	Yes, with modifications

Figure 1. NON-PHARMACOLOGIC DELIRIUM PROTOCOL FOR THE COMMUNITY LIFE CENTER – Refer to key on next page



KEY FOR THE DELIRIUM PROTOCOL FOR THE COMMUNITY LIFE CENTER

Diagnosis of Delirium requires a "yes" answer for criteria 1 and 2 and either 3 or 4 on previous page.

Prevention Interventions

1 Consider discontinuing anticholinergics such as H2 blockers and Metochlorpromide, Benzodiazepines, Steroids, etc.

2 Consider non-pharmacologic interventions:

Orientation: Provide hearing aids, glasses
Encourage communication, frequent reorientation to environment/day/time
Familiar objects in patient's room
Consistent nursing staff to care for patient
Provide TV, radio, newspaper for daily activity
Calming, non-verbal music

Environment: Sleep hygiene – Lights off at night/on during the day
Back rub, comfort measures
Control noise at night, minimize sleep disruptions
Ambulate or mobilize patients; encourage socialization activities

Clinical parameters: Maintain systolic B/P > 90mmHg, O2 sats >90%
Treat medical reasons for confusion: UTI, electrolyte imbalances, constipation, drug ingestion, infection

3 Adequate pain control using non-pharmacologic and pharmacologic interventions. Consider analgesia time scheduled if patient has dementia and cannot ask for prn medication

4 Consider atypical or typical antipsychotics only after non-pharmacologic interventions have been attempted

The Richmond Agitation-Sedation Scale (RASS)

+4	Combative	Overly combative, violent, immediate danger to staff
+3	Very Agitated	Pulls or removes tube(s) or catheter(s); aggressive
+2	Agitated	Frequent non-purposeful movement
+1	Restless	Anxious or apprehensive but movements not aggressive or vigorous
0	Alert and calm	Spontaneously pays attention to caregiver
-1	Drowsy	Not fully alert, but has sustained awakening, with eye contact, to *voice* **(≥ 10 seconds)**
-2	Light sedation	Briefly awakens with eye contact to *voice* **(≤ 10 seconds)**
-3	Moderate sedation	Movement or eye opening to *voice* **(but no eye contact)**
-4	Deep sedation	No response to voice, but movement or eye opening to *physical* stimulation
-5	Unarousable	No response to *voice or physical* stimulation

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Table 3. Evaluation Plan

Outcomes	**Measure/Operational Definition**	**Rationale for Measure**	**Data Collection Approach**	**Goal**	**Results**
Formation of delirium team	Team leader, CNS, Pharm-D, nurse champions, nurse aide	To assist with implementation and collaboration with specialty services acceptance of changes	Meetings and emails for communication	Weekly meetings until practice change completed. Then bi-weekly for 3 months for re-evaluation of changes	Team formed. Weekly meetings initially followed by bi-weekly meetings were conducted.
RN needs assessment questionnaire	10 item True/False and multiple choice questionnaire	Determine learning opportunities	Pencil and paper	Response rate of 90%	Completion of questionnaire 30% Results: RN: 90% (4) 80% (2) 70% (2) 60% (1) 50% (1) LPN: 80% (1) Nurse aide: 60% (1) 50% (4) (2) with no title
In-service education program for dayshift RNs	Provide education addressing prevention, risk factors, assessment, and the revised IDA	Re-educate RN staff to review delirium prevention, recognition, and non-pharmacologic treatment interventions	Sign-in sheets reflect total number of participants attended in-service (9) Total # day shift RNs: 10	Attendance goal: 90% No post-test	Actual attendance: 90%
Increase the recognition of delirium with newly admitted patients	Recommended addition of the RASS to the initial section of the IDA Recommended adding subtypes of delirium to the initial assessment portion	To identify comprehensive baseline patient assessment regarding delirium	Monitor number of delirium cases admitted to the CLC	Implementation of revised IDA 100% of patients were assessed within 24 hours of admission	Added RASS to IDA Added subtypes of delirium to initial assessment portion To date: 100% compliance with

					IDA completion of RASS and subtypes
Create & implement delirium protocol	Evidence-based practice protocol for the prevention, identification, and management of delirium	Consistency of practice	CPRS Chart review of notes	Improve prevention, recognition, and non-pharmacologic interventions	Delirium protocol for CLC develop and implemented

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