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**An Evidence Based Curriculum on Early Recognition and Prevention of Delirium in
Hospitalized Elderly**

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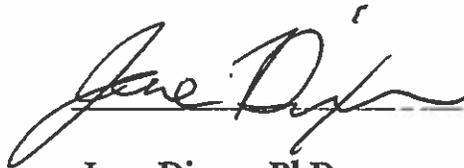
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This capstone is accepted in partial fulfillment of the requirements for the degree Doctor of Nursing Practice.



Ruth McCorkle, PhD, RN, FAAN - Committee Chair

Date here 03/10/2016



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Signed: Albert Behno
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Abstract

Background: Delirium in older adults is common, but there is evidence that programs utilizing a set of non-pharmacologic interventions are effective in preventing it. Early recognition and delirium prevention programs may save lives and reduce healthcare costs.

Problem: Hospitalized older adults have special needs that can be addressed using evidence-based clinical practice. However, hospital nurses may lack the competency to care for patients at risk of developing delirium and can benefit from a delirium educational training program.

Design: The development of an Education program.

Methods: Critical content was identified, synthesized from the literature and developed into a curriculum outline. A panel of delirium/gerontology experts validated the content.

Significance of the Project: The validation of evidence-based content provides an opportunity to transform the education of nurses who care for patients at risk of developing delirium.

Keywords: *delirium, older adults, elderly, aged, prevention, early, recognition, education, curriculum, evidence-based, competency, hospitalized, hospital-acquired, hospital*

Introduction

The mainstream media, and some within the academic community, have labeled delirium a hospital-acquired condition.¹ Patients young and old, but predominantly those older than 65, can develop delirium that they did not have prior to being admitted to the hospital during their stay.²⁻⁶ A recent feature in the popular Public Broadcasting Service Newshour and Kaiser Health News calls delirium a “surprising side-effect” of the hospitalization of older adults⁷, contributing to an era in which hospitals are viewed as dangerous places.⁸ This is an issue that the healthcare community can no longer ignore. Establishing a delirium prevention program is key to solving this problem, especially as research has demonstrated that these programs are both low-cost and effective at reducing the incidence of this condition.^{6,9,10}

The unfamiliar hospital environment, persistent noise, and multiple repetitive conversations with healthcare professionals, in addition to invasive interventions typical of today’s hospital environments, can trigger acute confusion and disorientation that arises, often insidiously, in older adults.¹¹ For some it takes very little stimulation to tip them over to a condition of frailty¹² that can often result in prolonged hospitalization and an increased risk of death, which may subsequently lead to the remainder of a lifespan being spent in skilled nursing facilities.^{13,14} Older adults and their families are widely cautioned to know what to expect, especially in terms of the risk of delirium, whenever going into hospital emergency rooms.^{1,2,4,5,12,15} Consequently, studies have shown that hospitalized older adults with delirium are twice as likely to die within a year (adjusted hazard ratio of 2.11, 95% confidence interval, 1.18-3.77).¹³ Hospitalized patients with delirium require extra care following discharge and are at an increased risk of being discharged to a skilled nursing facility rather than to an acute rehabilitation unit or directly home.^{14,16} In addition to prolonged days on mechanical ventilation

for patients who are in critical care, patients who develop delirium also show cognitive impairments as a consequence of this condition.¹⁷

The Problem and Background

Delirium in hospitalized older adults is common.¹⁸ It is described as a “disturbance of consciousness with impaired attention and disorganized thinking that develops rapidly and with evidence of an underlying physiologic or medical condition.”¹⁹ It can also be quite costly.²⁰ Delirium is present in 10%-31% of admitted adults, observed to develop as new delirium at a rate of 3%-29% per admission, and generally occurs at a rate of 11%-42% per admission.²⁴ However, when specific interventions are planned and implemented, delirium can be preventable.^{9,20-23} There is strong evidence that programs utilizing a set of non-pharmacologic interventions are effective in preventing delirium in the elderly.¹⁰

Early recognition using diagnostic tools

Diagnosis is primarily done through clinical observation of the patient in, or at risk for, delirium and targeted at key features of the disease.²⁵ The use of valid and reliable diagnostic tools is imperative to ensure the accuracy of the diagnosis in all settings.^{17,25} The Confusion Assessment Method (CAM) stands out as the most frequently used tool for delirium screening with a high sensitivity (94% and 100%) and specificity (95% and 90%).²⁵ The CAM has the strongest supportive data, with the highest pooled positive likelihood ratio (LR) of 9.6 (95% CI: 5.6-16.0), compared to other instruments used to detect delirium in terms of ease of use and test performance.²⁵ The CAM has been adopted for use with intensive care unit patients (CAM-ICU). However, varying findings regarding sensitivity and specificity, from several studies and experts, suggest that the predictive accuracy is dependent on physician buy-in. Thus, even with the use of CAM, it is estimated that many patients with delirium remain undiagnosed.¹⁷

The evidence on delirium

There have been a few studies on delirium prevention that have had varying degrees of success. The Yale Delirium Prevention Trial⁹ demonstrated the effectiveness of a multicomponent intervention protocol targeted towards six risk factors collectively referred to as Elder Life Program: (1) orientation and therapeutic activities for cognitive impairment; (2) early mobilization; (3) non-pharmacologic approaches to minimize use of psychoactive drugs; (4) interventions to prevent sleep deprivation; (5) communications and adaptive equipment for vision and hearing impairment, and; (6) early intervention for volume depletion.

A similar study by Vidan and colleagues²², utilizing a risk-directed approach, used an educational intervention targeted at seven risk areas (with the addition of nutrition) combined with monitoring for adherence. This study of adults seventy years old and up in a public hospital in Spain reported an effect rate of 60% reduction (11% vs. 18.5%, OR=0.40, CI=0.24-0.77, p=0.0005) without the use of additional staff resources, through the implementation of the intervention along with the daily clinical work of staff.²² However, the intervention group (in a geriatric unit, n=170), when compared to the usual care group (in a medical unit, n=372), had the possible benefit of selection bias associated with the care environment that potentially presented obvious advantages in terms of the skills and competency of the staff and the accompanying empathy towards older adults.²²

The NICHE (Nurses Improving Care for Healthsystem Elders) system of care delivery for older adults defines a protocol approach to implementing delirium care as a component of a geriatric syndrome along with dementia and depression.^{19,26-28} NICHE is a collaborative group at New York University's Hartford Institute for Geriatric Nursing. It proposes approaches to care for designated hospitals that require intensive leadership engagement and empowerment of staff

nurses in shared decision-making by using either the Acute Care of the Elderly (ACE) unit approach, the Geriatric Resource Nurse (GRN) approach, or both.²⁷ As the most frequently used system in over 500 designated hospitals worldwide, NICHE had early beginnings with the implementation of the GRN model of care at Boston's Beth Israel Hospital and Yale-New Haven Hospital in the 1980s and continues to influence the nurse practice environment of these designated hospitals today. It is also likely to be seen in Magnet hospitals, signaling their commitment to excellence in older adult care.²⁹ The educational strategy and content offered by NICHE, based on the textbook by Boltz and colleagues,³⁰ to designated hospitals include options for an instructor-led or web-based delivery and offer a general approach to early recognition, prevention, and treatment.³¹ However, facilities that opt to implement a delirium prevention program would still need a curriculum that utilizes a change management approach based on a theoretical framework that directly confronts ageism biases, in addition to a social incentives approach, coupled with well-defined actionable clinician activities ingrained into the educational content offered by NICHE, in order to sustain the hardwiring of the process. This opportunity to transform the educational content, combined with the change management principles empirically defined from field studies by both the HELP (Hospital Elder Life Program used in the Yale Delirium Prevention Trial) and NICHE approaches to care, primarily provide the evidence for this project.^{27,32,33}

A recent meta analysis by Hshieh and her team¹⁰ from Harvard Medical School, which looks at the combined effectiveness of all studies done from January, 1999, the year of the Yale Delirium Prevention Trial, up to December 31, 2013, provides strong supporting evidence for this project. Fourteen interventional studies were included in the analysis, yielding a compelling case for the adoption of delirium prevention bundles in the care of older adults as current best

evidence. Eleven (11) studies demonstrated as much as a 53% reduction in delirium incidence (OR, 0.47, 95% CI, 0.38-0.58), while four randomized or matched trials reduced delirium incidence by 44% (OR, 0.56, 95% CI, 0.42-0.76). Fall reduction as an outcome variable also decreased by 62% (OR, 0.38, 95% CI, 0.25-0.60) in the intervention group of four studies. Length of stay and the odds of institutionalization were also reduced. This is the best evidence so far to support the widespread adoption of delirium prevention bundles (a well-defined set of interventions correlated to desirable positive outcomes).

The Educational Need and Pedagogy of Early Detection and Prevention of Delirium

While delirium is difficult to recognize, hospital staff may also lack the competency to care for older adults who are at risk for it. The Institute of Medicine³⁴ reported that less than 1% of Registered Nurses and pharmacists, and less than 4% of social workers, are certified in geriatrics. Meanwhile, only 29% of baccalaureate programs have a gerontology-certified faculty. Roughly 2.6% of advanced practice registered nurses (APRN) are certified in geriatrics.³⁴ The clinical diagnosis of delirium presents difficulty even when conducted by experts, especially when using diagnostic criteria from the DSM-5 (Diagnostic and Statistical Manual of Mental Disorders).³⁵ The condition can manifest in either the hyperactive or hypoactive form, the latter of which often goes unrecognized by clinicians.²⁵ In a study comparing nurses' and researchers' ratings of delirium (n=797 patients and 2721 observations), nurses identified only 19% of observations as delirium in 31% of patients compared to researchers, supporting the investigator's conclusion that nurses often do not recognize delirium.³⁶ Several studies have concluded in their specific populations that clinical nurses have a perceived lack of competency, as well as a knowledge gap, on the subject.³⁷ Hence, this project meets the need for a validated, evidence-based curriculum that would assist clinical educators and administrators in

delivering educational content that is vetted by experts on the subject in order to bridge this gap in practice.

Today's healthcare organizations have evolved into teaching enterprises that benefit the continuing education of nurses in the workplace.³⁸ The quick turnaround time needed to respond to regulatory requirements, corrective actions from survey findings, and mandatory educational content for staff, has made it imperative to create curriculum within the organization rather than depend on external offerings that may not suit the organization's timetable. However, there is too much focus on new technology and regulations in curricula. This led the Carnegie Foundation for the Advancement of Teaching report, titled "Educating Nurses: A Call for Radical Transformation", to conclude that nursing programs in the United States, "are not generally effective in teaching nursing science, natural sciences, social sciences, technology and humanities."³⁸ The report goes on to describe how education materials are usually presented in a "highly abstract way, with standardized lectures delivered mainly through slide presentations."³⁸

As a result, the report proposed an alternative approach to nursing education. This radical approach is summed up by Benner's study team³⁸ as four imperative shifts in thinking for faculty and students: (a) Emphasis on teaching for a sense of salience, situated cognition and action, (b) Emphasis in integrative teaching, rather than the separation of classroom and clinical teaching, (c) Emphasis on clinical reasoning and multiple ways of thinking and knowing, rather than just critical thinking, and (d) Emphasis on formation using narrative pedagogy to develop advocacy behaviors for patients.

This change in thinking is necessary in caring for elderly patients, especially as older adults are subjected to significant ageist biases. Pisani³⁹ warned that "chronologic age does not necessarily correlate to physiologic age," yet it is one of the top three stereotype assumptions that

social psychologists talk about, along with race and sex⁴⁰. Recent developmental psychology literature in behavioral economics offered a framework for understanding why humans think automatically, socially, and in mental models, much like we assume that an older person is frail when they are not, need assistance when they do not, and have physiologic functional reserve when they can easily tip towards the imbalance of disease if a challenge to their equilibrium is mounted^{39,41}.

Purpose, Contribution to the Literature.

A focus on prevention strategies over treatment strategies has been found to be more efficacious, relative to outcomes in using multicomponent interventions for hospitalized older adults, in planning delirium care.⁴² However, in the almost two decades since the seminal Yale Delirium Prevention Trial, there have been prevailing assumptions that prevention interventions in hospitals are widespread because they are protocol-based.⁴³ The development of an evidence-based curriculum provides a turnkey solution to help educate the nursing workforce on this issue using expert-validated content. This project consisted of three aims: (1) review currently available evidence on early recognition and prevention of delirium in older adult; (2) identify critical content for the educational program based on the current literature, and; (3) validate the critical content of the curriculum with a panel of experts.

Methods

For the first step, the literature on the definition, epidemiology, assessment, and prevention of delirium was systematically reviewed using search terms as keywords including, “delirium”, “prevention”, “elderly”, “aged”, “older adults” in search engines in the Orbis Yale University catalog, Pub Med, Ovid, Cochrane Library, and EBSCO Databases. The keywords “elderly”, “aged”, and “older adults” were combined with “OR” and later combined with

“delirium” and “prevention” with the “AND” combinator, yielding 269 articles. Based on the hierarchy of evidence,⁴⁴ this yield was further limited to clinical trials published between 1990-2015, which ultimately produced ten articles. In CINAHL (Cumulative Index of Nursing and Allied Health Literature), the same search keywords were used and, when limited to research articles, yielded 186 articles with considerable duplicates and, when further limited to clinical trials, produced the same ten articles. Resources and support were garnered from the Yale University library system and voluntary and confidential collaboration with professional peers and mentors on the delirium topic. The evidence was organized and presented in a table that described the author, journal, place of publication, title, purpose of study, identified content, and level of evidence. The articles were grouped by topics and subcategories. Inclusion criteria was based on the top three methodology ranking in the hierarchy of evidence outlined by Melnyk and Fineout-Overholt⁴⁴, namely, systematic reviews, randomized controlled trials, and controlled cohort studies. Exclusion criteria were: (1) lower-ranked methodology studies; (2) published in a language other than English.

In the second step, the identified content was written as separate topics of the educational program and was grouped into domains and subdomains. A curriculum outline was developed based on the review of the literature and categorization of evidence. Four domains and specific subdomains were identified by the first author and reviewed by the last author.

In the third step, a five-member expert panel reviewed the previously-identified content in order to provide content validity regarding the domains and subdomains. The expert panel process followed recommended guidelines by Lazenby et al.⁴⁵ The expert panel included doctoral-prepared researchers and clinicians in medicine, nursing, and sociology, all with expertise in delirium. They were identified through their prominence in the literature, as well as

through referrals from fellow experts, and were selected with the deliberate intent of garnering diverse perspectives. (See Table 1.)

The domains and subdomains were organized into a rating form, which was developed using the Qualtrics survey software, to determine the relevance and importance of each in terms of early detection and prevention of delirium in the hospitalized older adult.⁴⁶ In addition, an area to write comments was included for each domain and subdomain. A short letter with the curriculum outline and accompanying electronic survey form for rating the curriculum content was sent by electronic mail to each of the five participating experts. For each domain and subdomain, the experts were asked to respond to two questions: “Is this RELEVANT to the curriculum?” and, “Is this IMPORTANT to the curriculum?” These questions were structured with binary response options – “yes” and “no”. The experts, who all agreed to participate prior to receiving the survey, reviewed and rated the domains and subdomains for relevance and importance using the developed rating guide. Each of the experts returned the surveys, with their ratings, within four weeks.

Percent agreement for the domains and subdomains were calculated. Based on recommendations by Polit, Beck and Owen regarding item level Content Validity Index (I-CVI), the domains and subdomains with 78% or higher agreements were judged as having shown content validity within this panel of experts.⁴⁶ For the entire curriculum, based on similar recommendations by Polit, Beck and Owen on scale level Content Validity Index averaged across all domains and subdomains (S-CVI/Ave), a score of 90% or more would be judged as having shown content validity for the curriculum.⁴⁶ Domains and subdomains for the education program rated by the experts are presented in Table 2.

This project was exempt from Institutional Review Board approval as it took the form of a literature review used to design an education program, utilizing professional experts to validate the content.⁴⁷

Results

All four domains were identified as relevant and important based on the literature review. These domains include: (1) age-related changes in older adults (5 subdomains), (2) delirium and early recognition (9 subdomains), (3) the delirium prevention bundle (11 subdomains), (4) putting it all together (5 subdomains). (Table 2)

Three of the four domains received 100% expert agreement on relevance and importance, with the exception of the last domain, “putting it all together”, which garnered 60% expert agreement. Two of the five experts rated that last domain as neither relevant nor important. Thus, this domain is identified in the topical outline as optional content. While the majority (19 of 30) of the subdomains received >78% expert agreement, each of the domains include subdomains that were rated lower than 78% and were also identified as optional content. One subdomain item, “AARP Population Survey”, was rated negatively by all of the experts and, as such, was eliminated from the proposed curriculum. Two of the experts commented on the “Age Related Changes in Older Adults” domain as, “Important for understanding why recognizing delirium is important in older adults,” and, “Teaching this in relation to symptoms that nurses would see in practice is needed since overview can seem boring to some.” One expert also added that the subdomain “Why Early Recognition and Prevention Matters” was “one of the most important part of this curriculum.” One of the experts recommended re-naming the subdomain on “Ageism, Stereotypes and Biases” as “barriers to detection” so as “not to blame the learner.” Three of the experts cautioned against losing the interest of learners when discussing the validity and

reliability of the CAM instrument, as staff nurses do not evaluate them in practice. One advised to “keep this brief” and another to “at least provide a reference.” Lastly, one expert notably commented that the Elder Life Program (described as the intervention in the Yale Delirium Prevention Trial) “was effective due to the dedicated research staff assessing and performing the prevention strategies,” because it was “difficult to engage staff RNs due to competing demands.” She added that, “It would be helpful to review the outcomes of present hospitals that acquired HELP and maintenance of the program.”

Despite the lack of expert agreement, identifying the domains and subdomains that were rated less than 78% as optional content may be of use to gerontology educators for inclusion in their audience-specific learning groups because of their existence in the literature. The overall content validity of the entire topical outline, including the optional content as rated by the expert panel using the S-CVI/Ave calculation method (averaging across all items),⁴⁶ is 81%, which falls below the recommended standard. However, the validity rises to 91% (excellent content validity) when items (domains and sub-domains) with lower expert agreement (deemed optional content) are excluded. See Table 3 for the final list of evidence-based domains and subdomains of early recognition and prevention of delirium in the hospitalized elderly.

Discussion

Three of the four domains, and nineteen of the thirty subdomains, achieved expert ratings, indicating acceptable or excellent content validity. These ratings have several implications for clinical educators, nurse managers, and hospital administrators. First, the select content to be included in the educational sessions represent the best evidence in the literature currently on the topic. Secondly, the expert panel confirmed which content was to be prioritized in planning the actual training program for staff. Thirdly, the authors note that the low-rated

domains and subdomains were more pedagogical approaches than delirium content. The experts in this panel of five were selected based on their content expertise, and did not agree (to recommended standard) that these pedagogical approaches were relevant and important. Future iterations of this scholarly process may include separate specific ratings for pedagogical approaches by pedagogy experts in the academe and clinical education settings to further enrich the content validated product.

The two-step process of identifying and validating the content strengthened the ability to educate based on material firmly grounded in the evidence. This systematic and scholarly process can rapidly influence and improve clinical practice. In addition to using the final content outline as a blueprint for clinical educators and administrators to follow to implement in-service education on this topic, the process described can also inform how educational programs can be validated through the garnering of a simple percent of agreement among content experts.

Conclusion.

The process of developing an evidence-based content outline on the early recognition and prevention of delirium can potentially bridge the “know-do” gap^{10,43} between the state of the science and the clinical practice of preventing and treating delirium in the hospitalized elderly. Elderly patients, their families, and the clinical staff who take care of them all benefit from the utilization of an evidence-based instructional program that informs and enhances the nursing department’s ability to improve the quality and promptness of care and quickly react to the constantly evolving standards and practices that guide the management of this vulnerable population. An impact analysis on the attainment of changes in clinical behavior, practice change, and patient outcomes using this validated content deserves further evaluation.

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Table 1. Expert Panel Members' Profiles.

The panel members are as follows:

Elizabeth Capezuti, Ph.D., R.N., F.A.A.N. is the William Randolph Hearst Foundation Chair in Gerontology & Professor, Hunter-Bellevue School of Nursing, Hunter College of the City University of New York. Dr. Capezuti's program of research focuses on promoting quality care practices for older inpatients including prevention of falls, injuries, deconditioning and delirium. Dr. Capezuti was the John W. Rowe professor in Successful Aging at New York University College of Nursing and director of NICHE (Nurses Improving Care for Healthsystem Elders). In her role as the Director of NICHE, Dr. Capezuti has led the development of NICHE into a financially sustainable model fostering geriatric excellence in 500 hospitals and health care organizations. Of her 90 published articles, many have appeared in prestigious nursing, gerontology and interdisciplinary journals. She is also a frequent editorialist with a bi-monthly co-column on acute care of the elderly for Geriatric Nursing.

Marquis D. Foreman, Ph.D., R.N., F.A.A.N. is the John L. and Helen Kellogg Dean of Nursing. Rush University College of Nursing. Dr. Foreman has been active in clinical geriatric research for almost 30 years, and participated in multidisciplinary, multi-site research. Most of Dr. Foreman's research has consisted of multidisciplinary teams (nursing, medicine, pharmacy, epidemiology among others) studying the epidemiology, natural history, recognition and long-term outcomes of delirium in hospitalized older adults. His current research, funded by the National Science Foundation, is a multi-site, interdisciplinary [nursing and engineering] study to develop a multi-modal (vision, speech, and haptics) communication interface between an older person and an assistive robot. Dr. Foreman has mentored several pre- and post-doctoral

fellows many of whom were supported by T32, F31, or other research training support. He was the director of a PhD in nursing science program for almost 4 years.

Margaret Pisani, M.D., M.P.H. is the Associate Professor of Medicine (Pulmonary); Program Director, Pulmonary and Critical Care Medicine Fellowship; and Co-Director, Sleep in the ICU Task Force at the Yale New Haven Hospital, New Haven, CT. Dr. Pisani's research focuses on improving the care and outcomes of older critically ill patients. She holds a Masters in Public Health in chronic disease epidemiology and brings this training and her research focus to her role as mentor for fellows and junior faculty doing clinical and translational work in pulmonary and critical care medicine. In addition, she has extensive experience in conducting longitudinal clinical research studies both in the critical care setting and the outpatient setting. Her work has focused on predisposing risk factors as well as precipitating or modifiable risk factors such as medication use in the intensive care unit. She has strong interests in delirium, its pathogenesis, treatment and impact on outcomes. Dr. Pisani is currently studying sleep in an intensive care unit population. She is examining risk factors for sleep disruption, use of portable polysomnography in the ICU, and the impact of sleep deprivation on delirium and other ICU outcomes. The Yale Pepper Center on Aging, American Lung Association, The Chest Foundation, The Hartford Foundation and Merck/American Federation on Aging Research and the NIH have funded her studies. Dr. Pisani has also established a national Sleep in the ICU Task Force for which she is co-chair.

Eva Schmitt, Ph.D. is the Associate Director, Aging Brain Center Institute for Aging Research at the Harvard Medical School, Boston, MA. Dr. Schmitt is a Social Gerontologist and Social

Worker with over 25 years of clinical, research, and teaching experience in aging. Her work is focused on research to better understand the long-term consequences of delirium and the implementation of evidence based practice to prevent delirium in the hospital. Dr. Schmitt works closely with Dr. Sharon Inouye, principal investigator of the Yale Delirium Prevention Trial, who also leads the Aging Brain Center at Harvard.

Christine Tocchi, Ph.D., A.P.R.N., G.N.P.-B.C. is an Assistant Professor at Duke University School of Nursing, Durham, NC. Dr. Tocchi is a board certified Gerontological Nurse Practitioner and has more than 20 years of experience in the education of gerontological nursing students providing care to older adults across the healthcare continuum. Dr. Tocchi was the interventional nurse practitioner in Dr. Sharon Inouye's team in the Yale Delirium Prevention Trial implementing the Hospital Elder Life Program (HELP). She co-initiated a primary care home visit program for frail homebound older adults, initiated a Nurses Improving Care for Healthsystem Elders (NICHE) program within an acute care hospital, and was a health provider and Director of Patient Care at a long-term care facility. Her program of research is focused on frailty prevention in older adults. Her doctoral research as a John A. Hartford Building Academic Geriatric Nursing Capacity (BAGNC) Scholar at Yale University has led to the development of The Frailty Index for Elders (FIFE), a multidimensional measure for frailty in older adults.

Table 2. Proposed Domains and Sub-domains of the Early Recognition and Prevention of Delirium Education Curriculum.

	Is this Relevant?	Is this Important?
I. Age-Related Changes in Older Adults	1.00	1.00
1. (Optional) Brief stories on Age-Related Changes from Learners	0.60	0.60
2. Age-Related Changes by Body System	1.00	1.00
3. Ageism, Stereotypes and Biases	1.00	0.80
4. Self-Experiencing / Simulation of Age-Related Changes	0.80	0.80
II. Delirium and Early Recognition	1.00	1.00
1. (Optional) Brief stories on Delirium from Learners	0.60	0.60
2. Definition, Incidence and Prevalence	1.00	1.00
3. Life Impact of Delirium to Hospitalized Older Adults	1.00	1.00
4. Why early recognition and prevention matters	1.00	1.00
5. The Confusion Assessment Method (CAM)	1.00	1.00
6. (Optional) CAM Validity and Reliability	0.60	0.80
7. (Optional) Using the CAM on vignette case	0.60	0.80
8. Using the CAM on actual patient	0.80	1.00
9. Policy / Workflow in using the CAM in your unit	0.80	0.80
III. The Delirium Prevention Bundle	1.00	1.00
1. Brief stories on the bundle from Learners	0.80	0.80
2. The Evidence on the Bundle	1.00	1.00
3. Cognition/Orientation Care Strategies	1.00	1.00
4. Early Mobility Care Strategies	1.00	1.00
5. Hearing Care Strategies	1.00	0.80
6. Vision Care Strategies	1.00	0.80
7. Sleep/Wake Cycle Care Strategies	1.00	1.00
8. Hydration Care Strategies	1.00	0.80
9. Policy/Workflow on the Bundle in your unit	0.80	0.80
10. (Optional) Performance Improvement Plan on the Bundle	0.60	0.60
11. Outcome Measures on the Bundle	1.00	1.00
IV. (Optional) Putting It All Together	0.60	0.60
1. (Optional) Shared stories and questions on the Delirium Prevention Bundle	0.60	0.60
2. (Optional) One thing I learned today that I did not know before	0.60	0.60
3. (Optional) One thing I knew before that now understand in a different way	0.60	0.60
4. (Optional) Lingering questions and concerns	0.60	0.60
5. (Optional) Practice start dates and ongoing reflections	0.60	0.60
Total S-CVI (average) --all domains / sub-domains	0.81	0.81
Modified S-CVI (average) – validated domains / sub-domains	0.91	0.89

Table 3. Evidence Based Domains and Sub-domains of the Early Recognition and Prevention of Delirium Education Curriculum.

I. Age-Related Changes in Older Adults

1. Age-Related Changes by Body System
2. Ageism, Stereotypes and Biases
3. Self-Experiencing / Simulation of Age-Related Changes

II. Delirium and Early Recognition

1. Definition, Incidence and Prevalence
2. Life Impact of Delirium to Hospitalized Older Adults
3. Why early recognition and prevention matters?
4. The Confusion Assessment Method (CAM)
5. Using the CAM on actual patient
6. Policy / Workflow in using the CAM in your unit

III. The Delirium Prevention Bundle

1. Brief stories on the bundle from Learners
2. The Evidence on the Bundle
3. Cognition/Orientation Care Strategies
4. Early Mobility Care Strategies
5. Hearing Care Strategies
6. Vision Care Strategies
7. Sleep/Wake Cycle Care Strategies
8. Hydration Care Strategies
9. Policy/Workflow on the Bundle in your unit
10. Outcome Measures on the Bundle