EMERGENCY PROVIDER EDUCATION FOR MANAGEMENT OF PATIENTS WITH SUICIDAL IDEATION IN RURAL MINNESOTA

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DOCTOR OF NURSING PRACTICE

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ABSTRACT

This dissertation investigated the efficacy of an educational intervention aimed at enhancing the management of patients with suicidal ideation in a rural emergency department. Employing a quasi-experimental mixed-method design, the study involved an educational session, administration of online pre-, post-, and post three-month surveys, and an electronic health record review. The data was then compared to determine if provider confidence was impacted by education.

The educational session, guided by the ICAR²E mnemonic developed by Wilson et al. (2020), encompassed components focused on identifying suicide risk, effective communication with patients, assessment for life-threatening conditions, risk assessment, strategies to reduce suicide risk, and extending care beyond the emergency department. The target population was emergency department personnel, including aides, nurses, and providers. Surveys were conducted before, after, and three months after the educational session. Electronic health records were reviewed for the three months before and three months after the educational session to review for changes in documentation of referrals and diagnoses.

The survey results revealed an increase in confidence in emergency personnel between the pre- and three-month surveys. However, since surveys were not linked, there was no way to identify if the same individuals completed both surveys, so information was not able to confirm increased knowledge or confidence. A chart review was conducted to assess changes in screening for suicidal ideation and depression, as well as changes in referral practices. No changes were noted in either category from the three months before the education to the three months after the education.

The co-investigator endeavored to contribute valuable insights into the effectiveness of educational interventions on provider confidence in rural emergency settings while treating patients with suicidal ideation. The outcomes hold implications for healthcare practitioners, administrators, and policymakers involved in refining emergency care protocols, ultimately fostering improved outcomes for patients with suicidal ideation. The comprehensive approach, integrating both qualitative and quantitative methods, helped support a nuanced understanding of the long-term impact of such interventions on clinical practices and provider confidence.

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A project of this magnitude could never be accomplished by one individual. I am eternally grateful for my support system and those who gathered around me to make it possible.

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A last note of acknowledgment for the Grand Forks Curling Club. The facility and members were a haven while researching and writing.

DEDICATION

To those experiencing the struggles of mental illness:

You are seen.

Your feelings are valid.

There is always hope.

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LIST OF ABBREVIATIONS

ACEP .....American College of Emergency Physicians.

AFSP .....American Foundation for Suicide Prevention

CDC .....Centers for Disease Control and Prevention

C-SSRS .....Columbia-Suicide Severity Rating Scale

CINAHL .....Cumulative Index to Nursing and Allied Health Literature

CMS .....Centers for Medicare and Medicaid Services

DNP.....Doctor of Nursing Practice

DOI .....Diffusion of Innovation Theory

ED .....Emergency Department

HER.....Electronic Health Record

HRSA.....Health Resources and Services Administration

HPSA .....Health Professional Shortage Area

ICAR²E .....Identify, Communicate, Assess, Risk, Reduce, Extend

ICD-10 .....International Classification of Diseases 10th Revision

IRB.....Institutional Review Board

JCAHO.....Joint Commission on Accreditation of Healthcare Organizations

MD .....Medical Doctor

NAMI.....National Alliance on Mental Health

NDSU.....North Dakota State University

NP .....Nurse Practitioner

PA .....Physician Assistant

PAL.....Psychiatric Assistance Line

PHQ-2 .....Patient Health Questionaire-2

PHQ-9 .....Patient Health Questionaire-9

SAMHSA.....Substance Abuse and Mental Health Services Administration

SI.....Suicidal Ideation

INTRODUCTION

Background and Significance

Suicide has been identified as the 10th leading cause of death in the United States and mental health disorders are the 9th leading primary diagnosis (Wilson et al., 2020). The Centers for Disease Control and Prevention (CDC) identified a 30% increase in suicide rates between 2000 and 2020 (Centers for Disease Control and Prevention [CDC], 2023b). Suicide rates have trended upwards for years showing this is an issue that will not go away without intentional interventions (Hedegaard et al., 2020).

The United States requires an additional 7,074 mental health practitioners to accommodate the current patients requiring mental health care (HRSA Data Warehouse, 2022) and this is projected to increase to 15,000 practitioners by 2025 (Shah, 2022). The insufficient number of providers decreases access to mental health services and leads to increased use of emergency departments for mental health needs. Patients in an acute psychiatric crisis are often seen in the emergency department (ED) and assessed for life-threatening injuries and the need for professional intervention. In 2017, 34.6% of patients seen in the ED for suicidal ideation (SI) were discharged home after their visit, while 80.6% of patients seen for other issues were discharged home (Owens et al., 2020). The other 64.4% of patients who were seen for SI or suicide attempts were admitted to either the same hospital or another facility for specialized care. Between 2017 and 2019, approximately 50% of ED visits were for adults with a mental health disorder (Centers for Disease Control and Prevention [CDC], 2022a). Nine out of ten ED providers report they board psychiatric patients weekly, while just over half state they board these patients daily (Nicks & Manthey, 2012). Boarding patients is when an ED maintains a patient's care while waiting for approval to transport the patient to an appropriate accepting

facility/room. While a typical ER visit lasts 195 minutes boarding patients requires the room and resources to be used for longer periods of time, disrupting typical ED patient flow. The practice of boarding patients decreases available beds and resources for other patients waiting in the waiting room and does not provide therapeutic support to the mental health patients already there (Karaca et al., 2012).

Problem Statement

Patients presenting to the emergency department with suicidal ideation have increased, creating an increased workload for emergency staff. The need for familiarity with current evidence-based practice has become clear, as a way to increase confidence in treatment methods for emergency personnel.

Purpose

The purpose of this project was to determine if implementing the ICAR²E mnemonic would increase a provider's level of perceived confidence while managing the care of suicidal patients in the emergency department in rural Minnesota. Though rural providers treat and manage patients with suicidal ideation, little research is available regarding the level of confidence of ED providers caring for patients with suicidal ideation.

Objectives

Objective One

Develop and implement ICAR²E mnemonic education at a rural Minnesota emergency department.

Objective Two

In the three months following education, medical staff will document Columbia and PHQ-9 scores 50% more often than baseline of patients presenting with suicidal ideation.

Objective Three

In the three months following education, referrals will be placed for outpatient mental health care 50% more often than baseline for discharged patients with suicidal ideation.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The following chapter describes the theoretical framework and literature review on suicide and suicidal ideation in the United States of America, Minnesota, and rural settings and reviews the ICAR²E mnemonic. This review is divided into the following sections: a) Suicidal Ideation in the United States of America, b) Suicidal Ideation in Minnesota, c) Suicidal Ideation in the Rural Population, d) Suicidal Ideation in the Emergency Department, e) Provider Confidence when Treating Suicidal Ideation, f) ICAR²E Mnemonic, g) Resources in Minnesota for Suicidal Ideation, and h) Summary.

List of Definitions

Acuity. The term acuity in a medical setting applies to the level of resources and urgency necessary to treat the patient's condition. High acuity refers to a patient that requires rapid intervention while low acuity refers to patients that require few resources and are less critical (Yiadom et al., 2018).

Critical Access Hospital. The title of critical access hospital applies to a rural hospital located at least 35 miles from another hospital with a bed limit of 25 or fewer (Minnesota Department of Health, 2023).

Provider. The Code of Federal Regulations defines a provider as a medical professional authorized to provide medical treatment. Providers can refer to doctors, physician assistants, nurse practitioners, etc. (2022).

Rural. The U.S. Census Bureau defines rural as a location not included in an urban area (2023). While this definition is vague, it is also a definition of exclusion.

Suicidal Ideation. Suicidal ideation (SI) is when a subject has a preoccupation with the thought of suicide. Suicidal ideation can include the ideas behind the action of suicide, but it can

also include thoughts and wishes (Harmer, et al., 2021). Thoughts of suicide may fluctuate and range from thoughts of not wanting to wake in the morning to follow through with a suicide plan (Harmer et al., 2023).

Urban. An urban area is a designated space with a minimum of 5,000 residents or 2,000 housing units (U.S. Census Bureau, 2023).

Theoretical Framework

The Diffusion of Innovation Theory (DOI) was created in 1962 by E. M. Rogers to explain how ideas and interventions can start in a specific location and spread to surrounding people (LaMorte, 2022). This versatile theory can describe advancements in multiple industries, such as medicine, technology, communication, etc. The DOI theory was selected for this project due to its adaptability and preciseness while describing how new concepts are adopted and become standard practice. Managing care of patients with SI can be intimidating and providers may not be aware of current evidence-based recommendations. Education for current evidence-based approaches for managing patients with suicidal ideation or risk factors will gradually diffuse among staff, becoming common practice.

The DOI theory posits that ideas and products diffuse through smaller groups of people, slowly creating a more extensive consumer base. The gradual diffusion of ideas and products exposes more individuals to the information. Adopting this idea or product would mean individuals have changed their thinking patterns to implement a new concept (LaMorte, 2022).

DOI Categories

Rogers separated adopters into five categories: innovators, early adopters, early majority, late majority, and laggards (LaMorte, 2022). Each category consists of certain qualities that lend the consumer varying degrees of caution. Innovators and early adopters tend to be intrigued by

new ideas and are willing to take risks. Small amounts of persuasion are required to convince them of the need for change. The early majority and late majority make up the most extensive consumer base. These people are skeptical of change and require more evidence before adopting new concepts or products. The last category is laggards who are individuals with a deep sense of tradition and the most skeptical of change (LaMorte, 2022).

DOI Factors

Rogers also identified five factors that affect innovation adoption: relative advantage, compatibility, complexity, trialability, and observability. All people will not accept a new concept in any circumstance, and these factors promote an understanding of creating a more palatable product. The factors include relative advantage, compatibility, complexity, trialability, and observability.

Relative advantage is the scale by which the product improves the current practice. Compatibility is the product's reliability in meeting a potential user's needs. Complexity addresses the ease of use and understanding. Trialability refers to the time the product is tested before adoption, like a test trial. The last factor, observability, is the degree of concrete results visible to the consumer (LaMorte, 2022). The DOI framework will help investigators for this project and future projects understand aspects that could be improved, such as the method of education or ease of use.

Literature Review

Searches were conducted using the Cochrane Database of Systematic Reviews (Cochrane) database, Cumulative Index to Nursing and Allied Health Literature (CINAHL) database, the PubMed database, and hand searching. Searches within the Cochrane database were conducted using the keywords “suicidal ideation.” Eighteen Cochrane reviews resulted and

remained after adjusting the date range to the last seven years. Though 18 articles were present, none addressed emergency department management of care for suicidal ideation. When searching with the keywords “suicidal” AND “emergency department,” one systematic review resulted.

A search was conducted in CINAHL using the keywords “suicidal” AND “emergency department or emergency room,”. Results were further refined by changing the search criteria for articles in the past seven years. The subject age was then reduced from including adolescents to only researching adults. When decreasing the subjects from worldwide to just the United States of America. A similar investigation was completed using the PubMed database using the keywords “suicidal” AND “emergency department or emergency room,”. The search was further refined by setting the publication date to within the past seven years.

Suicidal Ideation in the United States of America

Suicide is the purposeful ending of one’s own life while having thoughts of suicide is termed suicidal ideation (Harmer et al., 2023). In 2020, the Centers for Disease Control and Prevention reported 45,979 deaths by suicide, which is equivalent to 14 deaths per 100,000 and ranked as the 10th leading cause of death (CDC, 2022). This is the equivalent of one completed suicide every eleven minutes (Centers for Disease Control and Prevention [CDC], 2023a).

The United States has the highest suicide rate compared to other wealthy nations, with fourteen out of one hundred thousand residents. This is double the United Kingdom’s rate of seven per one-hundred-thousand residents (Blumenthal, 2020), and out of all nations, the United States had the 23rd highest suicide rate (World Population Review, 2023b). These statistics are thought-provoking, underscoring the imperative for the healthcare system to remain proactive and stay ahead.

Suicide rates in the United States were found to be higher in the age ranges of twenty-five to thirty-four years (18.35 suicides per 100,000) and seventy-five to eighty-four years (18.43 suicides per 100,000), and the highest rates were found in individuals over eighty-five years old (20.86 suicides per 100,000) (American Foundation for Suicide Prevention, 2023). Non-Hispanic American Indians and Alaska Natives had the highest rate of suicide in 2020, (23.9/100,000) while the second highest rate was non-Hispanic Caucasian Americans (16.9/100,000) (CDC, 2023a). Male suicides are four times more likely than female suicides, completing 80% of all suicides in the United States.

Firearms are the most used method for completed suicides, accounting for 24,292 deaths in 2020, just over 50% of all suicides (American Foundation for Suicide Prevention, 2023). The next most common method was suffocation, including hanging, which accounted for 27.19% of completed suicides. Poisoning was the third most common method, including overdoses, at 12.03%, and other causes were listed at 7.95% (American Foundation for Suicide Prevention, 2023).

While these statistics are startling, they only account for completed suicides and do not account for the 1.2 million suicide attempts in 2020 (American Foundation for Suicide Prevention, 2023). In 2020 alone, 12.2 million American adults reported considering suicide and 3.2 million Americans created a plan for how they would complete their suicide (CDC, 2023a). The CDC (2023a) further reports that for every completed suicide,

- 275 people have considered suicide.
- 27 people have made suicide attempts.
- 8 people have visited the ED for suicide-related complaints.
- 4 people have been hospitalized for suicide attempts.

The statistics listed above are eye-opening, however, they are based on self-reported information. Because the data is voluntarily collected, it may not include all individuals impacted by suicidal thoughts, attempts, or ED visits. Completed suicides are the tip of the iceberg and many other individuals suffer from SI or have tried to end their own life.

Suicidal Ideation in Minnesota

Suicide is the eighth leading cause of death in Minnesota and has impacted the average life expectancy on a state and national level (Gingerich & Carter, 2021). Suicide rates in Minnesota have been steadily increasing for the past twenty years, showing a similar pattern to the rest of the United States. Suicide rates showed a slight decrease in 2020, from 830 deaths from suicide or intentional self-harm in 2019 to 723 deaths in 2020. Self-harm is a deliberate act that injures an individual, related to cutting, burning, poisoning, falling, or intentional traffic accidents. The American Journal of Psychiatry published an article after following individuals who committed self-harm and found these patients have a 37.2 times higher risk of completing suicide than the public (Olfson et al., 2017).

While the number of deaths from suicide is less than 1,000, the number of visits to an ED for self-harm was 10,097 in 2020 (Minnesota Department of Health, 2022). The findings indicate a slight decrease from 10,462 visits related to self-harm in 2019 and have trended between 10,097 and 11,282 visits between 2016 and 2020 (Minnesota department of health, 2022). Some fluctuation is present; however, the frequency of self-harm visits remains high.

The Minnesota Department of Health further identified 44,317 ED visits in 2020 that were not diagnosed with self-harm, but suicidal ideation was reported (2022). In other words, no intentional acts were performed to incur an injury to the individual, but the patient endorsed

thoughts of suicidal ideation. While this does not indicate the patient will take action to end their life, it does increase their risk of completed suicide.

Suicidal Ideation in the Rural Population

One-fifth of the United States population lives in rural areas and is important to conduct suicidal ideation research in rural areas, as well as urban (Arbore, 2019). Living in rural areas increases the probability of chronic disease, poverty, isolation, disabilities, decreased health-promoting behaviors, decreased access to health insurance, and lowers life expectancy (Arbore, 2019; Cukrowicz et al., 2018; MedlinePlus, 2021). The increased health conditions are partially due to the unique barriers that impact this population, such as transportation and access to specialty services. Rural living decreases access to public transportation, requiring patients to obtain a ride from a friend or own a vehicle. The increased poverty rate in rural America makes owning a vehicle a financial difficulty, especially for those on a fixed income, such as those using social security or disability.

The lack of availability of providers is another unique barrier. In 2022, 65.6% of the Primary Care Health Professional Shortage Areas (HPSAs) were in rural regions (Rural Health Information Hub, 2022). If transportation or finances are not an issue, lack of primary care access may be another issue, let alone a mental health care provider. In 2022, rural Minnesota had one licensed mental health care provider per 741 individuals while urban Minnesota had one licensed mental health care provider for every 197 individuals (Werner, 2023). Telehealth services have helped to meet part of the need; however, financial, and technological resources are necessary for implementation and may not be available due to lack of internet connectivity in some rural areas.

One out of every ten workers in rural America is in the farming and manufacturing industries, with both imposing long hours and isolating environments (U.S. Census Bureau, 2017). Careers such as these rely on factors outside a person's control, including weather, market values, and available resources. Such unpredictability leads to financial insecurity, causing increased stress after an already long workday. The long shifts and financial strain tend to make mental health concerns less of a priority, delaying care until psychological health has reached an unhealthy level, requiring more intensive care than what would have originally been required.

Twenty-five percent of individuals 65 and older live in rural America (Arbore, 2019). Advanced age and physically demanding careers, like farming, create scenarios where chronic pain, decreased range of motion, and dexterity impact the patient's self-identity. The loss of identity, if not addressed, could develop into mental health issues, including depression, anxiety, and suicidal ideation. Suicide in rural individuals over 65 are three to four times more likely to complete suicide than their urban counterparts, and five times more likely than the rest of the population (Hu et al., 2020)

The CDC data from 1999 and 2017 reviewed suicide rates between rural and urban counties and identified that the completed suicide rate in rural counties had increased 1.4 times (13.1/100,000) compared to the urban rate (9.6/100,000) (Centers for Disease Control and Prevention [CDC], 2018). Urban counties saw an increase of 16% in completed suicides during this period, while rural counties identified a 53% increase. This growth highlights the need for competent and accessible mental health access for over 20% of the country.

Suicidal Ideation in the Emergency Department

Each year, six-hundred-fifty-thousand emergency room (ER) visits are related to suicide attempts. However, this does not address each patient who has thoughts of suicide due to non-

routine screening in the ER (Wilson et al., 2020). Nearly 10% of all adult patients seen in the ER have suicidal behaviors or thoughts though will only express these thoughts if asked (Betz & Boudreaux, 2016). A study conducted in New Jersey focused only on low-acuity patients in the ED and found that 11% of the 14,571 patients had an increased risk of suicide (McBride et al., 2018). Low acuity patients consist of patients who will likely have a rapid treatment and discharge period related to the decreased risk to patients' health. Findings also include 25% of patients screened positive for depression (McBride et al., 2018). If a patient presents to the ED solely for suicidal ideation, they are immediately categorized as high acuity and are therefore not included in the study conducted by McBride et al.

Patients with suicidal ideation also highlight the issue of "boarding" in the ED. Boarding is when a patient is held in the ED while awaiting placement at another facility. This waiting period could be lengthened by a lack of available rooms with appropriate staff or no available safe transport. Boarding patients increases morbidity and mortality, causes overcrowding, and utilizes necessary resources in the ED. Boarding also decreases patient satisfaction and caregiver spirits (Kraft et al., 2021). During this waiting period, the Joint Commission (JCAHO) requires one-to-one monitoring of the patient to ensure safety (The Joint Commission, 2020). The financial impact on the hospital can lead to a loss of $2,264 per patient per night (Nicks & Manthey, 2012).

Involuntary holds create another area of concern in the ED. Each state in the United States has a law allowing healthcare professionals to retain a patient in their care if they demonstrate risk to themselves or others (Roy et al., 2019). An involuntary hold removes the patient's civil liberties and allows the provider to keep the patient in that setting against their will until the patient is assessed as safe by a mental health professional. Roy et al. (2019), also found

in their study of 250 patients, 73.7% of patients placed under an involuntary hold were suicidal while 25% had attempted suicide. Placing an involuntary hold creates an environment where the patient loses autonomy and free choice, increasing agitation in an already mentally unstable person.

Provider Confidence when Treating Suicidal Ideation

Discussing suicidal ideation with patients can be an uncomfortable experience, causing anxiety for less experienced providers (Caine & Cross, 2018). Patients may not answer questions about suicidal ideation truthfully, or there is concern that discussing self-harm and suicide may instill thoughts of such behavior in the patient. While disproven, concerns about discussing self-harm are still a thought process in medicine today. A similar disproven thought process is the belief that suicide is not preventable, despite data showing preventative measures such as mental health counseling have decreased deaths (Betz et al., 2013). Betz et al. (2013), had 631 providers (including nurses, attendings, and residents) complete a survey regarding attitudes and knowledge while caring for patients with suicidal ideation in an ED setting. Data was collected regarding how confident providers were about different aspects of caring for patients with suicidal ideation. The following confidence levels were reported:

- Screening for suicidal ideation 81-91%
- Assessing risk severity 64-70%
- Providing patient counseling 45-46%
- Creating safety plans 23-40%

Factors that impacted the level of confidence in the research included inadequate staffing and administrative support, and provider bias (Betz et al., 2013). Further findings include the belief that mental health professionals were appropriately staffed (6-20%) or that treatment of

suicidal ideation was always a top priority in the ED (15-21%). Identification of suicidal ideation in the ED was not a concern for most of the providers surveyed, however, the provider's management of patients after screening positive for suicidal ideation showed steadily decreasing levels of confidence. The availability of appropriate staff was also less than optimal, impacting the providers' ability to provide competent care.

While Betz et al. (2013) focused their research on provider confidence in the ED, little other research is available regarding confidence in suicidal ideation management in the emergency setting. Loparo et al. measured confidence levels of providers at community mental health centers, but not in an ED setting. The study involved Behavioral health clinicians (N = 137) attending multiple educational sessions about managing patients with suicidal ideation. Confidence levels regarding suicidal ideation management were assessed before and after each educational session. The findings from this study indicate that higher levels of confidence are attained in providers who attend multiple training courses, compared to providers who attend less frequent suicidal ideation management training (LoParo et al., 2018). They also found that a provider's confidence level was positively correlated to the implementation of evidence-based practices. Increased educational frequency and habitual implementation of best practices were shown to improve provider confidence while caring for patients in community mental health centers.

ICAR²E Mnemonic

The ICAR²E mnemonic was introduced in 2020 as a method for providers to remember aspects of care while managing patients with suicidal ideation. The mnemonic is implemented at the beginning of an ED visit related to suicidal ideation and follows through to discharge from the ED. If the patient denies suicidal ideation and is not displaying concerning behavior,

implementation of the complete mnemonic is not necessary, and the provider may continue to treat the patient's concern as indicated. No studies were found implementing this method, indicating this project would be one of the first applications of the ICAR²E method in practice. The ICAR²E mnemonic is intended to improve the care of patients with suicidal ideation in the ED setting, though the article did not discuss application elsewhere (Wilson et al., 2020).

Before the ICAR²E mnemonic's development, a systematic review was conducted to create a tool for ED providers to safely manage the care of patients who report suicidal ideation (SI) and to decrease repeat visits. The American College of Emergency Physicians (ACEP) and American Foundation for Suicide Prevention (AFSP) combined efforts to create a writing group comprised of 2 ED physicians, 1 Psychologist, 1 Suicide Expert, and 1 ER nurse, with an overall goal to decrease suicidal deaths by 20% by the year 2025 (Wilson et al., 2020).

The ICAR²E mnemonic was created after a data review to help providers utilize evidence-based interventions while treating patients with suicidal ideation.

- I "identify suicide risk in the emergency department."
- C "communicate with the patient."
- A "assess for medically life-threats and ensure environmental safety."
- R "risk assessment."
- R "reduce the risk of suicide."
- E "extend care beyond the ED."

Identify Risk

Wilson et al. (2020) start their mnemonic by identifying the risk for suicide in patients presenting to the ED, alerting healthcare professionals to implement proper protocols. Risk factors for completed suicide include a previous suicide attempt, self-harm, substance use, and

depression. A patient history of self-harm has been identified to increase the chance of a future suicide attempt, with 4% of patients presenting with self-harm completing suicide within five years (Bjureberg et al., 2022).

Substance use is another risk factor for suicide. A study conducted by Urban et al. identified:

- Nineteen percent of patients with suicide risk have acute alcohol use as a documented diagnosis and were less likely to receive a thorough mental health evaluation by a mental health professional.
- Alcohol triggers suicidal ideation due to its strong depressant properties and ability to increase impulsive behaviors, such as suicide attempts.
- Seventeen states identified that 28% of women and 36% of males who completed suicide tested positive for alcohol at their time of death.
- Common treatment practice is to allow a patient to "sober up" in the ED and reassess after waking, if the patient denies suicidal ideation after waking, they are discharged home.
- Only 71% of patients presenting to the ED with suicidal ideation while intoxicated were assessed by a mental health professional, while 84% of other suicidal ideation patients were not.

Urban et al. (2020) argued that patients with acute alcohol use should be treated using the same methods as sober patients if not more intensive treatment.

Another factor that can impact the risk of suicide attempts is pre-existing mental health illness. Tadros et al. (2020) conducted a study in West Virginia and identified that of 427 patients presenting to the ED for SI, 92% had a prior psychiatric diagnosis, 51% had more than

one diagnosis, and substance use was reported in 58% of the patients. The most common mental health diagnosis was depression (67%) (Tadros et al., 2020). The presence of pre-existing mental health illness, either diagnosed or non-diagnosed, increases the risk of suicide attempts and should be identified as a risk factor. Identifying risks for suicide can be overwhelming, and screening tools can simplify the process.

Screening Tools

Screening is a helpful, evidence-based method for identifying risk and should be conducted with all patients, not only those presenting with suicidal ideation or self-harm. Eighty-three percent of individuals who have completed suicide and 95% of people who have attempted suicide had visited a provider in the previous year (Christensen LeCloux et al., 2022). Though the intensity of suicidal thoughts may vary, screening all patients instead of those just at risk could help patients gain referrals to mental health professionals before they need to be hospitalized. Up to 8% of patients may not disclose SI unless specifically questioned, therefore providers may not identify suicidal ideation without directly asking the patient (Wilson et al., 2020).

The Patient Health Questionnaire-2 (PHQ-2) and the PHQ-9 are screening tools to identify increased risk for depression (Levis et al., 2020). The PHQ-2 consists of the first two questions of the PHQ-9 which address depressed mood and anhedonia. If the patient scores three or more on the PHQ-2, the screener is encouraged to move on to the PHQ-9 to assess the severity of mental illness further. The PHQ-9 questions dig further into symptoms of depression, including sleep disturbance, low energy, appetite changes, self-esteem, concentration, and thoughts of being better off dead and the scores are combined to identify a likely diagnosis (Levis et al., 2020). Though the PHQ-2 and PHQ-9 may help identify the diagnosis, providers

cannot diagnose depression using only the questionnaires, though it does create a starting point to lead the provider in the right direction.

A meta-analysis of 44 studies with 10,627 participants found that using the PHQ-9 following the PHQ-2 is an appropriate screening method for depression (Levis et al., 2020). Levis et al. (2020) found the PHQ-2 has high sensitivity and specificity if the patient scores a two or greater. Findings with high sensitivity and specificity indicate that the PHQ-2 has a high probability of identifying depression accurately. When combining the PHQ-2 and the PHQ-9, the sensitivity decreased, and was not found to be clinically significant, but the specificity increased which is clinically significant (Levis et al., 2020). These results solidify that using the PHQ-2 and PHQ-9 together is a valid method for identifying depression; however, the findings do not support this as a validated tool for the risk of suicide.

The Columbia-Suicide Severity Rating Scale (C-SSRS) was created in 2007 as a tool to screen for depression and the level of risk for suicide (The Columbia Lighthouse Project, 2016). The C-SSRS tool is endorsed and recommended by the CDC, Food and Drug Administration, Substance Abuse and Mental Health Services Administration (SAMHSA), the World Health Organization, and the National Institute of Health (The Columbia Lighthouse Project, 2016). The C-SSRS includes five yes or no questions to assess suicidal ideation and five questions addressing the intensity of suicidality (Matarazzo et al., 2018). A study conducted by Matarazzo et al. (2018) found that the C-SSRS accurately predicted the 6-month probability of suicidal ideation and self-harm in veterans. Bjureberg et al. (2022) further confirmed the results, finding the C-SSRS successfully predicted suicides within one week and one month of patient discharge from the ED. The demonstrated predictability of the C-SSRS indicates that it would be a helpful tool for providers in identifying the risk of suicide, especially short-term risk. Providers must

remember that screening is not the only information necessary to identify suicidal ideation, and that is why the ICAR²E mnemonic is helps identify other factors that could influence a patient with suicidal ideation.

Communicate

Communicating is the second step of the ICAR²E mnemonic. The interview with the patient will help identify essential factors to consider while caring for someone with suicidal ideation, such as a plan for lethal means, intent to act, or situational stressors. A provider must consider the patient screening results with interview findings to view the complete picture and decide the course of action.

When questioned directly, research has shown that 1 in 4 pts expressed suicidal ideation, though it was not listed on their chart as a complaint (Wilson et al., 2020). Having an open conversation with the patient is a way to assess suicidal ideation and gain the patient's trust. Providers should ensure the discussion is private, though disclosure may be necessary for safety concerns. ED staff should also provide an environment that is safe physically and emotionally, encouraging the patient to feel comfortable and speak freely. The environment should also be judgment-free, respecting and empathizing with the patient.

Assess for Life Threats and Ensure Safety

Recommendations from the American Association of Emergency Psychiatry and the American College of Emergency Physicians advise ED providers to conduct thorough physical and mental status assessments, identifying any current and potential threats to life. Depending on the patient report (ingestion) and facility policy, laboratory tests may be ordered. The laboratory tests are site-dependent but could include a complete blood count, comprehensive metabolic panel, thyroid stimulating hormone, and urine drug screen. If transfer to an inpatient facility is

warranted, the accepting facility will request specific labs be completed (Wilson et al., 2020). The interview with the patient should be direct and address suicidal ideation, previous attempts, current plan, current intent to act on the plan, self-harm behaviors (current or past), and any factors that may increase or decrease the likelihood of acting on suicidal ideation (The Joint Commission, 2019). Asking direct questions will provide insight into the patient's current suicidal ideation and help the clinician identify the level of care needed.

In 2019, the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) implemented new requirements for the care of mental health patients. The new JCAHO mental health requirements became applicable to critical access hospitals in 2020. These requirements included using validated screening tools for behavioral health complaints, providing a safe environment, documenting overall risk, patient monitoring, and assessing current care practices (The Joint Commission, 2019).

JCAHO and CMS require facilities to provide a safe environment for patients with a high suicidal ideation risk. These safety measures include one-to-one monitoring with a 360-degree view of the patient in a room that is ligature-resistant and potential harms have been removed (The Joint Commission, 2019; Haney, 2019). Ligature-resistant is an area that does not have points where materials may be tied to cause self-harm or attempted suicide (The Joint Commission, 2022). The safety measures apply to what is already present in the exam room and to patient belongings and belongings brought in by visitors. Removing potentially harmful items in an ED room presents a unique challenge, as some harmful equipment (monitoring cords, tubing, etc.) is necessary for treatment. However, removing extra wires, tubes, sharps, medications, and plastic bags can be easily facilitated without impacting patient care.

Risk Assessment

Risk assessment explores possible protective and risk factors that can indicate an increased or decreased risk for completed suicide. Protective factors are those that make an individual less likely to follow through with suicidal ideation, while risk factors are those that increase the likelihood of suicidal actions. Both protective and risk factor categories that should be reviewed with a patient are personal, relationship, community, and societal and will be explored further in this section. Identifying and assessing these risks and protective factors will help the provider make an informed decision regarding the safety of a patient after discharge. The documentation of such factors will also protect the provider should their charting be reviewed for legal purposes.

Risk factors are scenarios in the patient's life that increase the risk for attempted or completed suicide. The CDC has classified suicide risk factors based on individual, relationship, community, and societal levels (2022). Each risk factor decreases the individual's quality of life and can negatively impact their will to live. Risk factors include:

Table 1

Risk Factors

Personal Factors	**Relationship Factors**	**Community Factors**	**Societal Factors**
use of substances	violence	discrimination	stigma associated with seeking mental health care
tendencies towards impulsive decisions	isolation	community violence	increased ease of access to the method of suicide
hopelessness	suicide of a loved one	poor access to healthcare	poor media representation of suicide
victim of violence	victim of bullying	recent increase in completed suicides in the community	
financial instability		discrimination	
previous diagnosis of mental illness			

(CDC, 2022).

Protective factors positively influence the individual and decrease the probability of attempted or completed suicide. Protective factors can also be assessed on the individual, relationship, community, and societal levels (CDC, 2022). Protective factors include:

Table 2

Protective Factors

Personal Factors	**Relationship Factors**	**Community Factors**	**Societal Factors**
efficient coping skills	supportive care system	feeling connected to one's community	decreased access to means for suicide
identified reasons for living	close bond with loved ones	adequate access to good quality healthcare	decreased societal acceptance of suicide
sense of identity			

(CDC, 2022).

Protective factors improve an individual's quality of life and reduce the likelihood of attempted or completed suicide. Once risks have been identified, the provider can use this information to create a personalized plan to address factors to increase safety.

Reduce the Risk

Two methods are currently used to reduce risk after a patient leaves the ED: contract for safety and safety plan. The contract for safety is a form signed by the patient and provider, stating the patient will not attempt suicide and will seek appropriate treatment (Bryan et al., 2017). Bryan et al. (2017) found the contract for safety is not as effective and is not enforceable**.** The other method, which utilizes a safety plan, is more effective due to the patient's involvement with its creation. A safety plan is a document completed by the patient and provider, addressing warning signs of suicidal ideation, coping strategies, and emergency contacts (social and professional). A copy of the safety plan is then given to the patient, and another is placed in the patient's chart (Conti et al., 2020). A study by Bryan et al. identified that soldiers given the equivalent of a safety plan (crisis response plan) were 75% less likely to attempt suicide than those given the contract for safety and continued to be less likely to attempt suicide for six months (Bryan et al., 2017).

Multiple formats and suggestions exist for a safety plan. Conti et al.'s (2020) study suggested a safety plan address the "5 Ds" of suicide: "depression, functional impairment (disability), physical illness and pain (disease), social isolation (disconnectedness), and access to lethal (deadly) means". Having an established guideline for safety plans will verify that aspects of care are not overlooked, setting the patient up for success. Bryan et al. (2017) recommend addressing six steps within a safety plan: "warning signs, internal coping strategies, people who distract, people who support, professionals/agencies, increasing environmental safety".

Proper discharge planning is also critical to patient treatment, such as education to avoid triggers and use medications (Wilson et al., 2020). Providing a concrete discharge plan and safety plan, completed by both provider and patient, will lay out a strategy that the patient can follow easily. A safety plan would identify tangible signs to monitor, a team of people who can help, methods for distraction, coping strategies, and access to lethal means.

Lethal Means Access

In the initial interview with the patient, the provider will discuss if a current plan exists for suicide, such as weapons, medication overdose, drowning, or suffocation. Addressing access to lethal means is a critical aspect of the safety plan. Of adults age 65 and older who completed suicides, 7/10 have used firearms (Conti et al., 2020). Owning a gun has been linked to a higher probability of suicide later in life. If the patient owns a firearm, assess if there is more than one firearm and request the patient or family member remove the firearm(s) from the patient's home (Sudak & Krishnan Rajalakshmi, 2018). Suicidal thoughts are often short-lived and the impulse to act can last minutes or hours (Wilson et al., 2020). Rural residents have increased access to firearms, so when these impulses are present the method for suicide is close at hand, increasing the probability of attempted suicide or completed suicide (Arbore, 2019). Limiting access to weapons creates a barrier and decreases the probability of impulsive self-harm or suicidal behaviors.

Extend Care Beyond the ED

Therapeutic care is provided in the ED but not adequate due to the length of stay; therefore, following up is necessary. Within the first six to twelve months after discharge from the ED, 17% of patients who have attempted suicide will attempt to take their life again, with an increased risk within the first month (Wilson et al., 2020). JCAHO has required clinicians to

follow local counseling and follow-up care protocols after discharge from either a mental health or emergency setting to help reduce the risk of suicide attempts following discharge.

Little research has been conducted regarding referrals to mental health professionals after discharge from the ED, though Bryan et al. discovered a referral to a mental health provider decreases suicide attempts in veterans when used with a safety plan (Bryan et al., 2017). Data was not available regarding discharge referrals for patients with suicidal ideation in the general population, though nurses are informed to advocate for follow-up care, such as appointments with mental health to help decrease overall risk (Haskell, 2021).

Following up with patients after discharge via phone call, postcard, or text has also been shown to decrease the risk of suicidal behavior (Wilson et al., 2020). Carter et al. and Hassanian-Moghaddam et al. conducted studies sending postcards to patients discharged from the ED for suicidal ideation at scheduled intervals, one group showed 50% fewer suicide attempts (Carter et al., 2005), and the other found the incidence rate of suicide attempts was lowered by 30% (Hassanian-Moghaddam et al., 2011). Neither of the studies, however, were conducted in the United States, calling into question if there are cultural implications to consider.

Resources in Minnesota for Suicidal Ideation

In 1976 the state of Minnesota initiated a program called the National Alliance on Mental Illness Minnesota (NAMI) which supports individuals and family members struggling with mental illness (The National Alliance on Mental Illness Minnesota, 2018b). NAMI has been helping the state find resources for almost 50 years.

The Psychiatric Assistance Line (PAL) connects clinicians and psychiatric providers for immediate triage and consultation at no cost (NAMI Minnesota,2019). The PAL is a valuable resource for health professionals who are hesitant to create a plan of care for individuals going

through a mental health crisis. Other suicidal ideation resources include a crisis contact via phone number for calling or sending text messages on a state and national level. The target population for each of these resources is varied and ranges from any individual in crisis, to rural residents, adults, or children (NAMI, 2018a). Crisis lines are operated by individuals trained in crisis scenarios and how to speak to individuals experiencing suicidal ideation and emergencies.

Summary

The populations of rural residents and adults over age 65 have progressively increasing rates of suicidal ideation, suicide attempts, and completed suicides. Though increased rates of suicidal ideation have been identified in individuals older than 65 years in rural America, few articles address interventions focused on this population. Despite suicide being one of the leading causes of death in the United States, there is a lack of research regarding the treatment of patients with suicidal ideation in the ED. Even fewer articles exist regarding improving ED provider comfort and confidence while assessing and treating patients with suicidal ideation.

Proper screening methods can be tools when identifying the risk of suicidal ideation but cannot be the only method used. Communicating effectively and assessing the patient creates insight into the current likelihood of self-harm and allows the provider to determine if the patient is a safety risk to themselves. Discharge planning is another aspect of suicidal ideation care that requires careful attention, including working with the patient to create a safety plan and following through with outpatient care. A discharge disposition from the ED does not mean the SI has been cured, further care by mental health professionals is necessary. The ICAR²E mnemonic is a tool that was created to guide providers in the care of patients with suicidal ideation, which can be difficult in a fast-paced environment such as the ED. The evidence-based mnemonic covers all aspects of care for patients with suicidal ideation in the ED, allowing

providers confidence that they have considered all factors when deciding a course of treatment for a patient with suicidal ideation.

METHODS

The dissertation project had a quasi-experimental, mixed method design with online surveys conducted pre- and post-educational sessions and three months after the training.

Implementation Plan

Forming a Team

The team for the dissertation project consisted of a committee chair, two additional committee members, and a graduate appointee. The committee chair was a doctoral-prepared family nurse practitioner who practiced in rural Minnesota and urban North Dakota and was faculty at North Dakota State University (NDSU) in the Doctor of Nursing Practice (DNP) program. One committee member was a doctoral-prepared and practicing family nurse practitioner and faculty at NDSU in the DNP program with experience in urban clinical settings, and the other committee member is a masters prepared family nurse practitioner who has practiced in primarily urban settings with experience in emergency medicine. The graduate appointee had experience in human development focusing on geriatrics and was a senior associate at NDSU.

Site Selection

The co-investigator searched for a rural ED for site selection. One site was initially selected, however, regular communication was difficult, so the decision was made to change locations. The site was chosen due to being in rural Minnesota and a connection of knowing a provider working in the ED. The facility manager was contacted via email about the project, and permission to use their location was requested, see Appendix G. The selected ED is staffed with a diverse team comprised of one NP, four PAs, two MDs, one CNA, one paramedic, and thirty-six nurses.

The selected site for this project was a rural Minnesota level IV trauma center that provided care to over eleven thousand individuals (U.S. Census Bureau, 2023a). The community itself had just over two thousand six hundred residents and occupied five and a half square miles of land (Data USA, 2022). Roughly twenty-six percent of residents were older than 65 years, with an average age of all residents being forty years of age (World Population Review, 2023a).

Educational Session

Using the ICAR²E mnemonic provided by Wilson et al. and the literature review, the co-investigator created an informational PowerPoint to educate ED providers on current evidence-based practices regarding treating patients with SI (Appendix H). The education introduced the ICAR²E mnemonic as a tool to help providers cover all aspects of care for patients with suicidal ideation.

The original plan was to present the educational session over 60-90 minutes with facility staff, however, the facilities decision board requested it be limited half-an-hour for providers due to their busy workload. The presentation was conducted as two in-person training sessions, one lasting half an hour and the other lasting one hour. The first session was scheduled at 8:00 am on September 19, 2023, however was not able to be started until 8:30 am due to a previous meeting taking longer than expected. The room was also scheduled for another meeting at 9:00 am, causing less time for open discussion. The second session was to be the same day at 12:00 pm, however, the ED manager was unable to set aside a room and notify staff in time. The second session was then switched to October 18, 2023 at 12:00 pm and was presented via zoom rather than in person due to the schedule change. These sessions were made available to ED staff, including physicians, nurse practitioners, physician assistants, nurses, and other ED staff willing to attend.

The ED manager was responsible for recruiting individuals by sending invitations to the ED staff for the presentation and posting flyers where staff could easily view them. The invitations and flyers were created by the co-investigator and sent to the facility manager for distribution. The participating facility also set aside a room within the facility for the educational session. The space had a projector, computer, and adequate seating for all attendees.

Setting

The location of this project took place in a rural emergency department in Minnesota. The ED had a level IV trauma certification and had received accreditation from JCAHO (U.S. Census Bureau, 2023a). Each shift is staffed with one provider (NP, PA, or MD), two nurses, and one CNA or paramedic. This ensures a well-rounded and skilled team is available to provide for the diverse emergency needs of the community. The ED manager worked with the co-investigator to identify times when most staff would be available to attend the educational session. In addition, both sessions were offered online to enable more potential flexibility for possible attendance.

Sample and Recruitment

The educational session was held twice, once on September 19, 2023, and the second time on October 18, 2023, and made available to all ED staff including physicians, physician assistants, nurse practitioners, nurses, and certified nurse aides. The first educational session was scheduled after the provider department meeting to encourage attendance by the providers. The second session was scheduled before the monthly nurses' meeting to encourage nurse attendance. Exclusion criteria included individuals not working in the ED or under the age of 18 years. A recording of the second session was made available for those unable to attend; however,

those unable to attend on the dates offered were not eligible to participate in the survey portion of the study, and data was not collected from individuals not in attendance.

Recruitment was conducted through an email invitation/consent letter sent out by the ED manager on behalf of the co-investigator to the eligible target population of ED staff (Appendix E). The invitation email contained the informed consent listing the possible risks, such as loss of anonymity. The ED manager also posted flyers for the event around the department in easily visible locations. Participant attendance at the educational session indicated implied consent for participation in the project.

Surveys

All surveys were conducted via Qualtrics and did not contain personal identifiers such as names. Qualtrics is a data collection software that assists with survey building and analysis, allowing for secure data storage. All data was collected and reported as aggregate data. The pre-survey was provided via an online QR code at the beginning of the first and second educational sessions (Appendix B). The co-investigator provided a verbal reminder with the code on the screen to be available on the participants' own computer device or cell phone. Due to the limited time, participants had enough time to scan the QR code, but had to complete the survey during the presentation. The pre-survey consisted of eight questions estimated to take approximately five minutes. Attendees of the educational seminar were asked to complete a post-survey, consisting of six questions taking approximately five minutes, immediately after the educational session (Appendix C). The survey was distributed via QR code presented at the end of the first and second presentations on the PowerPoint slides. Due to scheduling conflicts, the initial presentation offered the QR code for a short period prior to the participants leaving the room. The surveys collected demographic information such as age, gender, current job title, number of

years in the ED, and years in clinical practice overall. The survey also assessed the participants' current perceived confidence in caring for individuals with SI, current screening tools used, and an estimated number of referrals they had placed for outpatient care after discharging a patient with suicidal ideation.

Three months following the educational session, the survey was emailed to and dispersed by the ED manager and consisted of nine questions taking approximately five minutes (Appendix D). The three-month follow-up survey asked the same questions as the initial survey but also included questions about barriers to using the ICAR²E mnemonic and an opportunity for suggestions. A survey link was sent to the ED manager to send via email to the staff. The survey link was sent to all ED staff, not just those who attended the session, along with a verbal reminder from the ED manager was implemented to encourage participation.

The ED manager pulled reports identifying patients seen in the ED three months before educational session and three months after, 18 years and older, seen in the ED for the following ICD-10 codes: suicidal ideations (R45.851), suicide attempt (T14.91), and/or intentional self-harm (X71-X83). The charts were reviewed by the co-investigator for the use of the CSSRS and PHQ-2 and PHQ-9 screening tools, and data regarding the discharge status and referral.

Institutional Review Board

The NDSU Institutional Review Board (IRB) process was completed after committee approval had been obtained. ED staff were the participants; therefore, there was no need to obtain approval to include vulnerable populations. Patient data was reviewed by the co-investigator and facility staff. All data was stored on a password-protected computer. Survey data were obtained and kept on Qualtrics, which was protected via password.

Evaluation/Outcomes/Data Analysis

Objective One Evaluation

Objective one was to "*develop and implement ICAR²E mnemonic education at a rural Minnesota emergency department*". This objective was evaluated by reviewing the data from the post-educational seminar survey, question five, and the three-month follow-up survey, question 5, conducted via Qualtrics. The level of perceived staff confidence was reviewed from the post-survey and then compared to the three-month survey to identify changes and patterns.

Objective Two Evaluation

Objective two was, "*In the three months following education, medical staff would document Columbia and PHQ9 scores 50% more often than the baseline of patients presenting with suicidal ideation*". The objective was evaluated using the PHQ-2, PHQ-9, and Columbia scale completion data provided by the electronic health record (EHR). These values were reviewed to identify trends.

A request was submitted to the ED manager to pull patient charts from the facility's EHR three months before the training and three months after the training. The charts were then reviewed by the co-investigator. The data request reviewed the patients seen in the ED three months post-educational session who had the ICD-10 for suicidal ideations (R45.851), suicide attempt (T14.91), or intentional self-harm (X71-X83). These charts were reviewed for usage of screening tools for depression and suicidal ideation and discharge disposition. If the discharge disposition was not another facility and the patient was discharged home, the data were also evaluated to determine if a referral was placed for mental health services after discharge.

Objective Three Evaluation

Objective three was, "*Within the three months following education, referrals would be placed for outpatient mental health care 50% more often than the baseline for discharged patients with suicidal ideation*". The objective was evaluated using the referral data obtained from the EHR. These values were reviewed to identify trends.

Evidence-based Practice Model or Logic Model

A logic model was utilized for the development of this project due to its simplistic layout and easily identified steps. A Logic Model is a chart that identifies necessary inputs, activities, and outputs while laying out the expected outcomes (Centers for Disease Control and Prevention [CDC], 2022c).

Table 3

Logic Model

Project Goals: Identify if using the ICAR²E mnemonic affects provider confidence about managing patients with suicidal ideation.
Objective One: Develop and implement ICAR²E mnemonic education at a rural Minnesota emergency department.
Objective Two: In the three months following education, medical staff will document Columbia and PHQ9 scores 50% more often than baseline of patients presenting with suicidal ideation.
Objective Three: In the three months following education, referrals will be placed for outpatient mental health care 50% more often than baseline for discharged patients with suicidal ideation.

Inputs	Activities	Outputs	Outcomes	
			Short	Medium/Long
▪ Training space at facility. ▪ Student time assembling data to create presentation. ▪ Committee feedback regarding project. ▪ Survey creation.	▪ Conduct educational session regarding the management of suicidal patients in the ED. ▪ Conduct pre- and post-survey to evaluate current practices and confidence levels. ▪ Conduct a survey three months after the educational session to identify practice changes and sustainability. ▪ Recruit providers to attend an educational session. ▪ Staff at the facility run reports to identify pts with SI, self-harm, and completed suicides in the three months after the intervention.	▪ Completion of educational session. ▪ Completion of pre- post-, and three-month surveys. ▪ Reports assembled by pulling data from EHR and Qualtrics surveys. ▪ Report findings to implementing facility.	▪ Improved compliance with the evidence-based practice for providers managing patients with SI. ▪ Improved documentation supporting medical decisions for pts with SI. ▪ Providers will express an increased understanding of current evidence-based practices for pts with SI.	▪ Increase referrals to outpatient mental health. ▪ Increased documentation of Columbia scale and PHQ9 scores. ▪ Providers will express a higher level of confidence while treating patients with SI.

Summary

The following is a summary of the steps taken above. Site selection considered if there was open communication with a facility, as well as it qualified as a rural MN ED. Surveys were created in Qualtrics and an educational session was prepared via PowerPoint slideshow reviewing why suicidal ideation is an issue in rural MN and teaching the ICAR²E mnemonic. From there, approval was sought from the IRB as well as the facility to implement a project. Once approved, an email was sent to the ED manager with the invitation to participate, who then forwarded it to ED staff. Participation was allowed if the individual was 18 years or older and an employee of the ED. On the implementation date, a QR code for the pre-survey was presented on the initial presentation slide and the post-survey QR code was presented on the second to last slide. The educational session lasted 30 minutes for first session and 60 minutes for the second session, with the second allowing more time for the pre- and post-surveys to be completed by participants. The final survey link was emailed to the ED manager who forwarded it to ED staff, allowing 10 days for it to be completed. The ED manager verbally reminded staff to complete the survey around the midway point.

Chart review was completed three months after the initial implementation date. It reviewed charts three months prior to the educational session and three months after, comparing charting practices regarding validated screening tools and discharge referrals for patients who presented to the ED with suicidal ideation, suicide attempt, or thoughts of self-harm. After all charts were reviewed, data from the chart review and surveys were reviewed to identify trends in confidence levels, charting practices, and beliefs associated with the ICAR²E mnemonic.

Conclusion

The purpose of this study was to determine if implementing the ICAR²E mnemonic will increase a provider's level of perceived confidence while managing the care of suicidal patients in the emergency department in rural Minnesota. Education about management of patients with suicidal ideation was presented to ED staff with hopes of improving provider confidence levels while providing treatment. Two educational sessions were conducted with pre-, post-, and three-month surveys distributed to attendees. A chart review was also conducted by the co-investigator reviewing charting, discharge disposition, and referrals to mental health providers.

RESULTS

In this chapter, the findings of the quasi-experimental, mixed-method study are presented. The results include demographics of participants, educational session results, chart review of applicable patients, and survey results from participants who attended the educational session. Communication with the ED department, changing implementation locations, and staff turnover within the timeframe of the project resulted in time constraints for actual sessions and affected the implementation and results. Findings were not able to be paired between surveys due to Qualtrics limitations in development but will be described below per objective.

Presentations

Development of the presentation consisted of gathering information presented previously in the literature review and regarding the ICARE mnemonic. An email was sent to the ED manager requesting if any topics should be covered more than others. Unfortunately, no reply was received. Please see Appendix H for a copy of the presentation.

Two separate presentations were implemented to allow for as many potential participants as possible. The first was scheduled on September 19, 2023, in person and via video conferencing and lasted 30 minutes. The second presentation was scheduled on October 18, 2023, via video conferencing and lasted 60 minutes. The time allowance for each meeting differed due to facility requests relating to participant availability, but each presentation contained the same information. Individuals were allowed to participate in the surveys if they attended the session live, either in person or via video conferencing. If they viewed the presentation recording later, they were not offered to complete the surveys.

The first presentation was attended by seven total participants: two nurses, one paramedic manager, one facility manager (MD), two PAs, and one NP. Three participants attended via

video chat and two attended in person. Gender was not reported for confidentiality. Individuals attended in person, and none attended via video conferencing. Three pre-surveys, taken immediately prior to the education, and two post-surveys, taken immediately after the education, were completed on this date.

During the first presentation, a discussion was initiated by an attendee about documentation of screening tools for suicidal ideation. Participants were advised of the recommendation to screen all patients who present to the ED, not just the patients presenting with self-harm or suicidal ideation. The same participant expressed concern that screening all patients would impact staffing and that resources may not be available to provide adequate care. The discussion was directed back to current recommendations and the participant advised staff not to complete this aspect and that future discussions would need to take place if this were to be an option in the future.

During the presentation, a participant also requested recommendations for safety plans their facility could use. The co-investigator reiterated guideline recommendations that there be a standard safety plan outline for department practitioners to individualize. The participant stated awareness but requested the co-investigator provide a couple of examples for safety plan templates for providers to see by the end of that first week of implementation. The co-investigator sent an email to a contact at the facility with two recommendations: Safety Plans Work (Substance Abuse and Mental Health Services Administration [SAMHSA], 2022) and an article reviewing safety plans (Stanley & Brown, 2012).

The second presentation was attended by thirteen RNs. Nine of these individuals attended in person at the room set aside for the presentation with the co-investigator online, and four attended live via Zoom video conferencing. All in attendance were female. The surveys were

accessible to participants via QR link displayed on the opening and closing slides of the presentation. Two pre-surveys and four post-surveys were completed on this date.

Participant questions revolved around available resources in the community and in Minnesota. The conversation was directed to resources from the National Alliance on Mental Illness Minnesota. The slide addressing available resources was reviewed once more, and emphasis was placed on resources for medical professionals and resources for patients experiencing suicidal ideation.

Surveys

Demographics and Practice Characteristics of Respondents

The age of respondents to the pre-survey ranged from 28 to 61 years of age, with one participant electing to leave the age blank. This question assessing age was open-ended for participants to free-text their ages. The survey was completed by two PAs and three nurses. Job experience consisted of one individual at "*1-2 years*", two at "*3-5 years*", one at "*11 to 20 years*", and one at "*over 20 years*". Respondents also reported that their experience specifically in the ED consisted of two participants at "*1-2 years"*, one participant at "*3-5 years",* and two participants at "*11 to 20 years*".

The age of respondents to the post-survey ranged from 23 to 42 years of age with one participant electing to leave the age blank. There were no demographics for participant position in the post-survey to determine role. This was due to an oversight in not linking the pre- and post-surveys through Qualtrics, even though was intended.

The age of respondents for the three-month survey ranged from 31 to 42 with ten individuals electing to leave the age blank. The survey was completed by 15 participants: one PA, twelve nurses, one CAN, and one "*other*" with no answer typed in the free text box. The

question "*how long have you been certified in your current position*" had fourteen responses, with one individual choosing not to answer. Six participants selected "*3-5 years*", two selected "*6-10 years*", two selected "*11-20 years*", and four selected "*over 20 years*". Respondents also reported their time practicing in an emergency setting with three people selecting "*less than 1 year",* four selecting *"3-5 years",* three selecting *"6-10 years",* three selecting *"11-20 years",* and one selecting *"over 20 years".* One respondent did not answer this question.

The pre-survey was made available to participants via QR code on the opening slide of the educational session. Time was allotted for participants to fill out the survey during the second presentation, but not during the first due to scheduling conflicts. The pre-study survey was completed by five participants: two PAs and three nurses.

The post-survey was made available to participants via QR code on the last presentation slide immediately after the educational session. Time was allotted for participants to complete the survey during the second presentation, but not the first due to scheduling conflicts. The post-survey was completed by six participants, though position within the ED was not in the information collected.

The three-month survey was made available on December 19-29, 2023 and sent to ED staff via email with the survey weblink. A verbal reminder to complete the survey was provided from the ED manager on December 26, 2023. The three-month survey was completed by 15 participants: one PA, twelve nurses, one CNA, and one "*other*" with no typed response in the available box.

Objective One

Objective one was to "*develop and implement ICAR²E mnemonic education at a rural Minnesota emergency department*." Objective one was partially met. A thirty-minute education

was developed and presented to facility ED staff on September 19, 2023. A second educational session with the same information was conducted on October 18, 2023 for sixty minutes, for facility ED staff. Surveys were conducted just prior to each educational session (question five), immediately after each educational session (question four), and three months later (question five) to assess provider confidence levels. After reviewing the data, confidence levels overall increased from the pre-survey to three-month survey. Results are reflected below in Table 4.

The question "*What is your perceived level of confidence about your current practices for managing care of patients with suicidal ideation?"* found a mean of 3.8 on the pre-survey, 3.5 in the post-survey, and 3.2 in the three-month survey suggesting that confidence levels decreased during the educational session, as well as the three-month period after the educational session. While these values show a decrease in confidence, it is important to remember that the survey results are not able to be linked to each other. With the results not linked, there is no way to guarantee the same participants completed all three surveys, making comparison of results difficult.

The next question *"What is your perceived level of confidence about identifying suicidal ideation in patients?*" had a mean of 4 on the pre-survey, while resulting in a mean of 3.6 in the three-month survey. The question was not addressed on the post-survey. The mean does decrease between surveys, but the mode for each question was 4, mildly confident. Again, comparison of results is hindered by the oversight of not linking survey results.

The third question that addressed confidence asked participants *"What is your perceived level of confidence about creating safety plans?".* The mean from the pre-survey increased from 3 to the three-month survey mean of 3.1, suggesting a slight increase in confidence levels. While both surveys had a mode of 4, mildly confident, the pre-survey's other mode was 2, non-

confident, and the three-month survey's mode was neither confident nor non-confident. The increase in both mode and mean is encouraging, however, survey results cannot be compared effectively due to not linking survey results.

The last question addressing confidence asked "What is your perceived level of confidence about current referral practices after a patient with suicidal ideation is discharged?". A slight increase was noted in the mean from the pre-survey to the three-month survey, increasing from 2.8 to 2.9, implying a slight increase in confidence levels. The mode, however, shows a decrease with most respondents selecting neither non-confident nor confident in the pre-survey and most respondents selecting non-confident in the post-survey. The variation in selections would indicate a decrease in confidence levels for most participants. Here again, however, results cannot be accurately compared due to not linking the surveys.

Table 4

Results of Confidence Questions

Question	Responses to Pre-Survey (*N*=5)	Responses to Post-Survey (*N*=6)	Responses to Three-Month Survey (*N*=15)
1. What is your perceived level of confidence about your current practices for managing care of patients with suicidal ideation?	Mean: 3.8 Mode: 4	Mean: 3.5 Mode: 3	Mean: 3.2 Mode: 4
Very Non-Confident	0	0	0
Non-Confident	0	0	5
Neither Confident nor Non-Confident	1	4	2
Mildly Confident	4	1	8
Very Confident	0	1	0
2. What is your perceived level of confidence about identifying suicidal ideation in patients?	Mean: 4 Mode: 4		Mean: 3.6 Mode: 4
Very Non-Confident	0	N/A	0
Non-Confident	0	N/A	3
Neither Confident nor Non-Confident	1	N/A	2
Mildly Confident	3	N/A	8
Very Confident	1	N/A	2
3. What is your perceived level of confidence about creating safety plans?	Mean: 3 Mode: 2, 4		Mean: 3.1 Mode: 3, 4
Very Non-Confident	0	N/A	1
Non-Confident	2	N/A	3
Neither Confident nor Non-Confident	1	N/A	5
Mildly Confident	2	N/A	5
Very Confident	0	N/A	1
4. What is your perceived level of confidence about current referral practices after a patient with suicidal ideation is discharged?	Mean: 2.8 Mode: 3		Mean: 2.9 Mode: 2
Very Non-Confident	1	N/A	1
Non-Confident	0	N/A	6
Neither Confident nor Non-Confident	3	N/A	2
Mildly Confident	1	N/A	5
Very Confident	0	N/A	1

Objective Two

The second objective was "*in the three months following education, medical staff will document Columbia and PHQ9 scores 50% more often than baseline of patients presenting with suicidal ideation.*" Objective two was not met. To evaluate this objective, survey questions numbers six and seven on the pre- and three-month surveys were evaluated. In addition, a chart review was completed by the co-investigator starting three months prior to the educational session and for three months after the educational session to review charting practices relating to documentation of validated suicidal ideation and depression screening tools. See Table 5 below for results from the pre- and three-month survey.

The question *"What tools do you currently use to screen for depression and suicidal ideation? Select all that apply."* was addressed to participants, with most participants selecting the PHQ-9 in both the pre- and three-month surveys. The next question asked *"How often do you document the results of a screening tool for depression or suicidal ideation?".* The mean increased from the pre-survey, 2, to the three-month survey, 2.5, indicating an increase in documentation of screening tools. This is also echoed in the mode which was "*never*" and "*rarely*" in the pre-survey, and increased to "*sometimes*" in the three-month survey. Though the two questions paint relatively clear pictures of consistency in the preferred screening tool, as well as the increase in documentation, results are not clear due to the results not linked to each other.

Table 5

Results of Screening Tools Questions

Question	Responses to Pre-Survey (*N*=5) (*n*=4)	Responses to Post-Survey	Responses to Three-Month Survey (*N*=15)
What tools do you currently use to screen for depression and suicidal ideation? Select all that apply.			
PHQ-2	1	N/A	0
PHQ-9	2	N/A	11
Columbia Scale	0	N/A	1
Other	1	N/A	3 Free Text: "*Talking/Conversation*" "*I don't use one as an LPN but I believe we use the PHQ-9 in our clinic/hospital setting*"
How often do you document the results of a screening tool for depression or suicidal ideation?	Mean: 2 Mode: 1, 2 (*n=5)*		Mean: 2.5 Mode: 3
Never	2	N/A	4
Rarely	2	N/A	3
Sometimes	0	N/A	6
Often	1	N/A	1
Always	0	N/A	1

Charts were reviewed if the patient was 18 years or older, seen in the ED between the dates of June 19, 2023 and December 19, 2023, and the diagnosis code included ICD-10 codes for suicidal ideations (R45.851), suicide attempt (T14.91), and/or intentional self-harm (X71-X83). Eleven ED encounters met the above criteria from June 19, 2023 to the first implementation date, September 19, 2023. During those eleven encounters, no screening tools for suicidal ideation or depression were documented by the ED staff. Between September 20, 2023 and December 19, 2023, seven ED encounters met the above criteria. The guidance provided recommended using the first date of implementation for the cut-off between pre and

post chart review for time purposes, however, future projects should wait until the educational sessions are complete. Of these seven charts, no screening tools were documented by the ED staff. Of note, no referrals were anticipated or needed if the patient was admitted to the hospital. Please see Table 6 and 7 for chart review results.

Table 6

Chart Review June 19, 2023-September 19, 2023

ICD Code	Discharge (D) Admit (A)	Referral	Screening Tool*
R45.851	D	Given phone number for First Link, no referral placed	N
R45.851	D	None Placed	N
R45.851	A	N/A	N
R45.851	A	N/A	N
R45.851	A	N/A	N
R45.851	D	Appointment with therapist already scheduled.	N
R45.851	A	N/A	N
R45.851	A	N/A	N
R45.851	A	N/A	N
R45.851	A	N/A	N
R45.851	A	N/A	N

Table 7

Chart Review September 20, 2023-December 19, 2023

ICD Code	Discharge (D) Admit (A)	Referral	Screening Tool*
R45.851	D	None placed	N
R45.851	A	N/A	N
R45.851	D	Appointment with therapist already scheduled	N
R45.851	A	N/A	N
R45.851	A	N/A	N
R45.88	D	Advised to reach out to therapist	N
R45.851	A	N/A	N

*Important to note screening was completed by Avelle Ecare, a mental health video consultant company, but not added to the provider note.

Facility practice within this organization is to have an outside mental health video consultant conduct a screening on patients identified with mental health concerns and determine if the patient is safe to return home or needed to be admitted to a mental health facility. The video consultant documents both the C-SSRS and the PHQ-9. This documentation is then submitted to the ED and uploaded to the patient chart with the recommendation to admit or discharge the patient. The screening tools are documented in this documentation, but not in the file completed by the ED staff.

Objective Three

Objective three was "*within the three months following education, referrals will be placed for outpatient mental health care 50% more often than baseline for discharged patients with suicidal ideation*." Objective three was not met. Surveys were conducted to review

perceived referrals. Charts were reviewed if the patient was 18 years or older, seen in the ED between the dates of June 19, 2023 and December 19, 2023, the patient was discharged home, and the diagnosis code included any or all of the following: ICD-10 codes for suicidal ideations (R45.851), suicide attempt (T14.91), and/or intentional self-harm (X71-X83).

Table 8 displays the results for the pre-survey question number four asking providers "*how often do you place a discharge referral to a mental health professional for patients with suicidal ideation*." The mean decreased between the pre-survey, 3.5, and the three-month survey, 2.9, indicating a decrease in placement of referrals. The mode for each survey was evenly spread, plus or minus one. Reviewing the data below appears straight forward, however, survey results cannot be linked between participants, calling into the question if the same individuals participated in both surveys.

Table 8

Results of Discharge Referral Question

Question	Responses to Pre-Survey (*N*=5, *n*=4)	Responses to Post-Survey (*N*=6)	Responses to Three-Month Survey (*N*=15)
How often do you place a discharge referral to a mental health professional for patients with suicidal ideation?	Mean: 3.5 Mode: 2, 3 4, 5		Mean: 2.9 Mode: 3
Never	0	N/A	3
Rarely	1	N/A	3
Sometimes	1	N/A	4
Often	1	N/A	3
Always	1	N/A	2

Three months prior to the project implementation, chart evaluation regarding referrals made between the dates of June 19, 2023 and September 19, 2023, are as follows. Three of the

patients were discharged home without any referrals. One of these three patients was provided a phone number to a crisis intervention company that offers referrals to resources, listening, and support. One patient had a pre-existing appointment scheduled with a mental health professional. The last patient did not have a referral placed for any mental health professional or recommended to use any additional resources. Please refer to Table 6 above for further details.

Three months after the project implementation, chart evaluation regarding referrals made between the dates of September 20, 2023 and December 19, 2023, were as follows. Three of the patients were discharged home. One patient had a pre-existing appointment scheduled with a mental health professional, one was advised to reach out to their current therapist and schedule an appointment, and the last patient did not have a referral placed for any mental health professional or recommended to use any additional resources. Please refer to Table 7 above for further details.

Implementation of ICAR²E Survey Results

The post-survey posed the question "*how likely are you to implement any or all aspects of the ICAR²E mnemonic in your current practice?"* All six respondents selected "*likely*". The participants were then asked "*what barriers do you anticipate to using the ICAR²E mnemonic method in practice? Select all that apply*". Four individuals selected "*inadequate time*", one selected they were "*unfamiliar with the mnemonic*", one selected they "*do not see a need for it*", and one selected "*other*" and used the free-text box to type "*provider resistance*". Table 9 displays the results to question number six on the post-survey.

Table 9

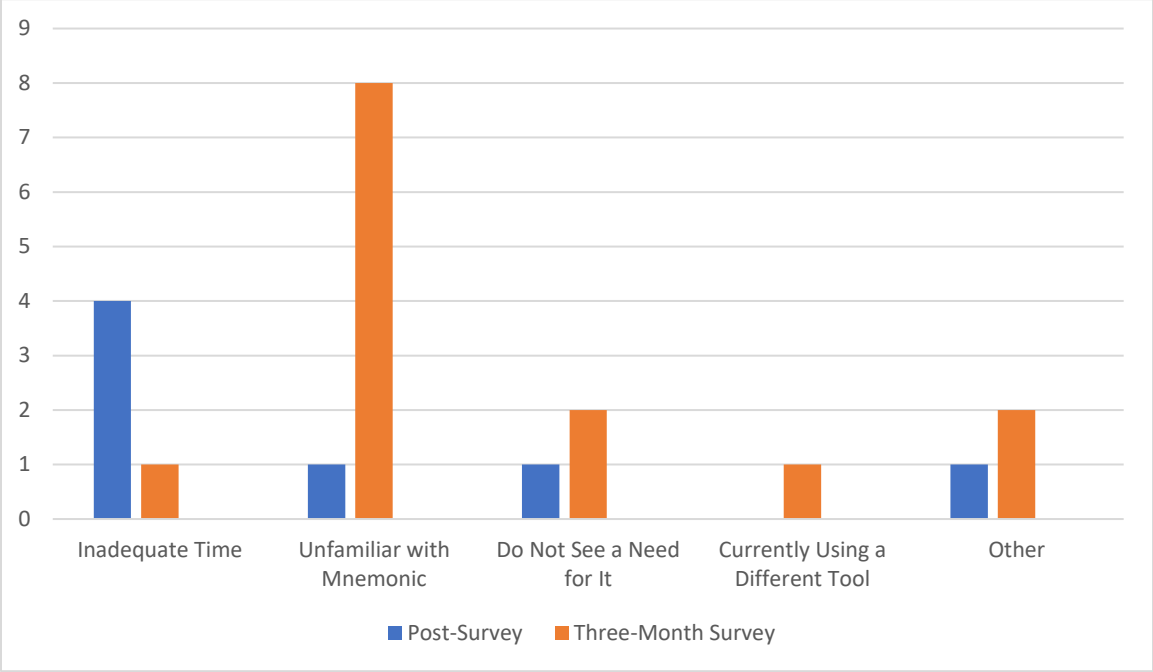
Results of ICAR²E Mnemonic Question

Question	Responses to Pre-Survey	Responses to Post-Survey (*N*=6)	Responses to Three-Month Survey
How likely are you to implement any or all aspects of the ICAR²E mnemonic in your current practice?		Mean: 4 Mode: 4	
Very Unlikely	N/A	0	N/A
Unlikely	N/A	0	N/A
Neither Likely nor Unlikely	N/A	0	N/A
Likely	N/A	6	N/A
Very Likely	N/A	0	N/A

Below is Figure 1 which shows the results from question six on the post-survey *"what barriers do you anticipate to using the ICAR²E mnemonic method in practice (select all that apply)"* and question nine on the three-month survey asking, *"what barriers have you encountered implementing the ICAR²E mnemonic method in practice?"* The post-survey had one free-text response from an individual who selected "*other".* It stated *"provider resistance".* The three-month survey also had a free-text response to *"other"*, the respondent said *"redundant, not useful".* Overall, there was variabity in anticipated and experienced barriers from pre-survey to three-month post-survey due to not linking survey results or knowing if those that took the pre-survey also took the three-month post-survey.

Figure 1

Anticipated and Experienced Barriers Identified in the Post-Survey and Three-Month Survey



DISCUSSION AND RECOMMENDATIONS

Summary

The purpose of this educational session aimed to determine if implementing the ICARE mnemonic will increase a provider's level of perceived confidence while managing the care of suicidal patients in the emergency department in rural Minnesota. Findings were collected through survey responses and chart review. The initial intent was to link the surveys for each participant to identify individual changes, however, this function was inadvertently not completed in the survey creation process. The surveys each had a different number of participants and were not linked, so comparing the answers is coincidental and does not lead the reader to a scientifically supportable conclusion.

The pre-survey had five total participants, while the post-survey, administered directly after the presentation, had six. There could be several explanations for the difference in total surveys before and after the educational session. The initial presentation had scheduling conflicts causing the session to start late, and less time was allowed for the introduction slide where the QR code for the pre-survey was displayed. Due to the late start, one participant joined later in the presentation. The late start also prevented one individual from staying for the whole presentation. The number of survey results could also be related to participants joining the educational session late for the second presentation on October 18, 2023. The scheduling conflicts and participants not able to set aside the whole time for the presentation could have had an impact on the number of completed surveys.

The difference in survey responses from the pre- (N = 5), post- (N = 6), and three-month survey (N = 15) was most likely related to time constraints of the participants. The three-month survey also had a reminder sent out by the ED manager for staff to remember to complete. The

three-month survey was opened on December 19, 2023 and remained available until December 29, 2023, allowing for ten days to respond. The ED manager inquired into the number of completed surveys after opening for four days and three had been completed. This prompted the manager to send out an email and verbal reminder for staff to complete the survey, leading to a total of fifteen completed three-month surveys.

Barriers in Preparation

Several barriers presented themselves while preparing and implementing this project. They included choosing an available location, scheduling available times for as many staff as possible to attend, decreased opportunity for direct staff communication, and staff turnover during the implementation phase. While these issues presented obstacles, the ED stakeholders were able to find effective solutions.

Location was the initial hurdle to address. Plans to find a location were initiated in March 2023 with a facility in another town. Communication from the ED manager was difficult to obtain, complicating the scheduling process. After three months of attempted communication, the co-investigators sought out another facility for implementation. This did force the timeline to be altered and sped-up.

Finding an available room and time for the presentation was another hurdle for the first presentation. The implementation site set aside a room at 8:00 am on the assigned date, however, they were reassigned to a smaller room at the last minute. This other room was occupied for another meeting, going over the allotted time, leading to the presentation starting thirty minutes late. Due to starting late, the session cut into the beginning of the next scheduled meeting, causing the question and survey time to be cut short. This might have impacted on the number of staff able to attend and the number of individuals able to participate in the pre- and post-survey.

The second presentation was supposed to be conducted the same day over the lunch hour, but reserving a room was not possible. The next month was spent trying to find a new date, which was scheduled for October 18. Distance to the facility presented a barrier for on-site implementation, so the education was conducted via video chat.

Another barrier that presented was staffing turnover within the facility. The emergency department manager was unable to follow through on agreed upon systems change for the EHR and recommended provider practices due to personal reasons impacting the project. The manager eventually resigned during the time of the project. The systems change was not continued by the following ED manager and the system change was not implemented.

Discussion

Demographics

Upon reviewing the data, demographic data may have had an influence on survey results. A variety of job titles were represented in the surveys including PAs, NPs, and nurses. Career titles such as RN vs. Licensed Practical Nurse (LPN) may impact if they are trained to use the validated screening tools listed above and were not delineated between in surveys. Also, providers can place orders for referrals to outpatient mental health but this is out of the scope of practice for other staff members. Due to the surveys not linking to each other, age collected from participants was not able to be correlated with results.

Presentation

An educational session was created using the framework of the ICAR²E mnemonic developed by Wilson et al. The original plan was to educate for 60-90 minutes in one presentation for all ED staff. During the initial meeting with the facility staff, a manager requested it be split into two separate sessions, one for the providers (MDs, PAs, NPs, etc)

lasting 30 minutes and one for the rest of the ED staff lasting 60 minutes. The comment was made that setting aside so much time for a presentation prevented staff from completing their daily tasks.

The initial presentation highlighted the low priority the education was given. This includes the change in venue, education time limitation, and abrupt end allowing minimal time for questions. Participants were rushed out of the room to allow for the next meeting and to resume their normal work duties. Identifying an optimal teaching method and modality could help promote the subject material to highlight the importance, as well as improve retention.

Objective One

The first objective addressed confidence level of ED staff while managing patients with suicidal ideation. The survey results paint a complicated picture showing an increase in individuals feeling neither confident nor non-confident immediately after the educational session, less individuals identifying as mildly confident, but also included one person identifying as very confident. The increase in neither confident nor non-confident brings into question if the education presented new topics that the staff had not implemented or been aware of in the past or that the education should have been presented in another way. Results indicate the same or mild increase (in only one participant) for confidence that likely was impacted by design and implementation barriers yet may also need to consider other modalities of educating future participants.

Three months later, the confidence levels both increased and decreased, complicated by the fact that more than double the participants completed the three-month survey compared to the pre- and post-surveys. The change in survey results could have been related to the length of time from the education causing a decrease in confidence. The information could have also been

retained or sparked an interest in researching the topic further, causing a jump in individuals reporting mildly confident.

The second question addressing confidence levels was *"what is your perceived level of confidence about identifying suicidal ideation in patients"* and was addressed in the pre- and three-month surveys. Very non-confident stayed the same in both surveys at "*0*", non-confident increased from "*0*" to "*3*", neither confident nor non-confident increased from "*1*" to "*2*", mildly confident increased from "*3*" to "*8*", and very confident increased from "*1*" to "*2*". The increase in each category could be related to the increase in survey responses from the pre-survey ($N = 5$) to the three-month survey ($N = 15$). The largest increase was the mildly confident category showing an increase in confidence when identifying suicidal ideation in the emergency department, but there was also a large increase in the non-confident category, from "*0*" to "*3*". Unfortunately, not knowing if the same participants filled out the surveys hinders the information abled to be gleaned from these results.

The third question about confidence addressed perceived level of confidence about creating safety plans, which was addressed on the pre- and three-month surveys. An increase was noted in each category, please refer back to Table 4 for specifics. The increase in each category, similar to the previous questions, would partially be related to the increase in survey participants for the three-month survey. The group with the largest increase was neither confident nor non-confident category. Though examples of safety plans were sent to the ED manager, the plans were not implemented department wide, but the chart review was not completed to assess the frequency of safety plan use as this data was not part of the formal objectives.

The last question addressing confidence levels is *"What is your perceived level of confidence about current referral practices after a patient with suicidal ideation is discharged".*

The largest increase was non-confident followed by the mildly confident respondents. Causation cannot be extrapolated from this data due to the surveys not being linked and the low number of participants, however, exploring alternative education methods may impact confidence in future research.

A systematic review by Shin et. al, identified that ED providers' lack of confidence while providing care for patients with suicidal ideation, can present a barrier to providing adequate care (Shin et al., 2021). The lack of confidence was found to create feelings of frustration and inadequacy, especially when patients present to the ED multiple times for suicidal ideation or self-harm tendencies. The systematic review went on to identify the low amount of education provided on suicidal ideation management caused fear and apprehension. Confidence levels were not linked between the pre- and three-month surveys; however, future implementation of a similar project could further explore confidence levels and how they impact perception of burnout and quality of patient care.

Prudent effort should be put into the format of education in future studies. Education published by the Accreditation Council for Continuing Medical Education (ACCME) highlights the importance of small groups, dedicated time, and space, as well as creating activities that encourage full group participation (ACCME, 2022). The ACCME further encourages role play and full group discussions. The time allocated for the educational session did not allow for group discussion or activities but could be adjusted in the future.

Objective Two

Objective two was built to assess the frequency of documentation of validated screening tools for suicidal ideation and depression in the ED. The objective was not met because there

was no change in documentation frequency of validated screening tools. Analysis of the survey results and chart review were completed and listed in this section.

Emergency department staff were asked in the pre- and three-month surveys to answer the question *"what tools do you currently use top screen for depression and suicidal ideation? Select all that apply".* One individual selected "*PHQ-2*" in the pre-survey, but it was not selected in the three-month survey. The rest of the screening tools utilized increased between the pre- and three-month surveys. A free text option was available for those who selected *"other"* but was only used by two respondents in the three-month survey. The first respondent advised *"talking/conversation"* is their selected screening method, using the "*C*" in the ICAR²E mnemonic for *"communicate with the patient*". The second response to "*other*" was "*I don't use one as an LPN but I believe we use the PHQ-9 in our clinic/hospital setting*", calling into question which provider roles should complete validated screening tools in the ED. The survey results highlight a need in the department to create a system to identify which role is responsible for collecting the validated screening tool.

The pre- and three-month surveys asks, *"how often do you document the results of a screening tool for depression or suicidal ideation".* Again, the number of respondents for each survey varied, but most categories increased, with those selecting "*often*" remaining the same. An overview of the results can be seen in Table 5. The largest increase was the participants selecting "*sometimes*" with the second largest increase in individuals who selected "*never*", though it should be remembered that the surveys cannot be compared reliably due to survey formatting. The chart review identified that screening tools were not documented in the three months prior to the education nor the three months in provider notes but were documented for each self-harm or suicidal patient in the outside mental health video consultants' notes. The ED

providers follow recommendations from the outside consultant for discharge or patient admit, but do not acknowledge the screening tools in their own notes. The fact that the validated screening tools were conducted and reviewed by another agency may be one reason why they were not addressed by the provider. Again, data from the surveys cannot be compared reliably due to the failure to link the surveys.

During the educational session, the topic of documenting validated screening tools, even if conducted by an outside consultant, was discussed. A participant pointed out that the screening tool is already used and if providers document it in their note as being reviewed, it can be used for financial reimbursement, but the tools are only used if the patient presents with a mental health concern. The recommendation to screen all patients for depression and suicidal ideation was reiterated, however, it was dismissed due to the increase in staff and resources necessary if the patient expresses suicidal ideation, such as a one-to-one sitter and room safety protocols.

Screening for suicidal ideation for all patients and not just those presenting to the ED with suicidal ideation or mental health concerns is recommended per the MN Health Collaborative (2021). Universal screening is found to increase detection of suicidal ideation by almost double (Laliberte et al., 2021). Increased identification of suicidal ideation allows providers to alter their plan of care to meet the patients' needs. Keeping in mind available resources is a variable that must be considered prior to implementing universal screening. CMS released a memo recommending screening for suicidal ideation only when resources are available to provide treatment (Centers for Medicare and Medicaid Services [CMS], 2024). Availability of resources was a concern addressed by a participant in the first presentation, limiting the EDs potential for screening all patients for suicide and depression, not just those presenting with a mental health concern.

Objective Three

Objective three was designed to assess changes in referrals for outpatient mental health care after the patient is discharged from the emergency department. Objective three was partially met, as there was no change in referral practices three months prior to and after the education but chart review and survey results were assessed. Assessment was completed via chart review and a survey question addressed perception of frequency of discharge referrals.

The question *"how often do you place a discharge referral to a mental health professional for patients with suicidal ideation"* was asked in the pre- and three-month surveys with four individuals responding and one abstaining in the pre-survey and fifteen responding in the three-month survey. Each category showed an increase in responses, see Table 8 for review. Chart review showed in the three months before and after the educational seminar similar practices. Each three-month period had one patient with a pre-existing appointment scheduled and one patient did not have a referral documented in the provider's note. One patient was advised to reach out to a crisis intervention company in the three months before education, and one was verbally told to call their current therapist and schedule an appointment.

Prior to chart review, the definition of referral was not identified, calling into question if the pre-existing appointments or verbally telling patients to call their provider counts as a referral. Either way, the objective of having a 50% increase in referrals was not met. Factors that could have contributed include shortage of mental health professionals and the frequency of patients discharged per period.

The pre- and three-month surveys addressed provider perception of this objective by asking *"how often do you place a discharge referral to a mental health professional for patients with suicidal ideation".* Each possible response showed an increase, please see Table 8 for

review. The perception of frequency of discharge referrals, while increasing in the surveys, remained the same in the chart review. Comparing the survey responses does not create a reliable picture due to the surveys not being linked. Verbal recommendations to follow up with a mental health professional were documented, however, parameters were not defined prior to the project as to what constitutes a referral and if verbal recommendations should be included. While education was provided about the importance of referrals, further information could have been supplied about how to place such referrals and which providers were accepting new patients.

A systematic review found that treatment in the ED often fails to meet the patients' needs for individualized safety plans and referrals (Shin et al., 2021). Roughly 70% of patients at risk for suicide or self-harm were found to not have an outpatient mental health visit within the first 30 days after discharge from the ED (MN Health Collaborative, 2021). The emergency department can only provide acute care, but it cannot be the only care the patient receives for mental health. Continuing treatment must be conducted in an outpatient setting.

ICAR²E Mnemonic

Participants were asked in the post-survey how likely they are to implement either part or all of the ICAR²E mnemonic into their current practice, and all six respondents selected "*likely*". Immediately after the education these six individuals reported they were likely to use at least part of the education in their practice, but which part of the education was not asked as a follow-up question. The question was not followed-up at the three-month mark which would have given an idea about if the mnemonic was implemented at any level.

Participants were also asked about anticipated barriers to implementing the mnemonic in the post-survey and experienced barriers in the three-month survey. The selected answers for the post and three-month surveys showed mixed results and can be reviewed in Figure 1. The

preconception of inadequate time proved to not be the hindrance that it was expected to be. The difference in responses on the three-month survey could have been due to several influences, such as completing the survey to please the ED manager or individuals might have responded when they did not attend the educational sessions. The difference could also be attributed to decreased memory over length of time between the presentation and follow-up with the participants. It was interesting to note that in both surveys at least one individual selected that they do not see a need for the ICAR²E mnemonic. One individual in the three-month survey identified it as *"redundant, not useful"* bringing in the question of the perceived need for a new tool for treating patients with suicidal ideation. A future study could dig deeper into perceived need of the ICAR²E mnemonic, looking into if a tool improves patient outcomes and perception of ED experience.

Strengths and Limitations

Limitations

Every study has limitations, and this project is no different. A limitation of this study included the small sample size, limiting the possibility of the results being statistically significant. Another limitation was the decreased time available for the educational session imposed by management at the participating facility. Decreasing time for the presentation limited the amount of time available for questions and to complete the surveys. The last limitation to address is the surveys not linking to each other. Due to this error, there was limited ability to analyze any meaningful data between surveys or make other inferences from responses gathered.

Strengths

On the other side of the coin, every study has its strengths. For this project, the main strength was the availability of presentations over video conferencing. The alternative format

allowed for more individuals to participate in the live presentations. The flexible offering online also allowed for the educational session to be recorded for future use.

Recommendations

The study has shown many areas for growth and improvement. Below are recommendations for future research or replication. The recommendations address the theory/model used, facility buy in, educational session, surveys, chart review topics, and creating recommendations to the participating ED.

The Diffusion of Innovation theory is a helpful theory, but the project could be improved using the Adult Learning Theory. Using the new theory would allow the co-investigator to fine tune the educational session to allow for optimal retention, as well as shorten the time needed to present. The Logic Model created a nice visual of the step-by-step process, however, the Iowa Model would have encouraged more communication with the implementation site, ensuring greater buy in from the facility and staff stakeholders.

Facility buy in was an issue in the project and would need to be addressed. The shortened communication time prior to implementation did not encourage facility involvement with the information presented. A recommendation would be to find a facility that proves responsive to attempts to reach out. Another recommendation would be to offer incentives for individuals to participate. This could include offering gifts cards to those who complete all three surveys, continuing education credits, and/or a meal.

The educational session is one area for improvement. Per participant request, adding suggestions of safety plans would be beneficial to include in the presentation. Reviewing the examples with the staff would encourage familiarity with the plans and promote use in the future. Adding a handout with available mental health providers in the area, online resources, and

personal Iphone applications would also be beneficial. The handout would allow providers and patients to know what resources are available in the community and readily accessible to rural patients. The presentation should also be made available in multiple formats to adapt for participant schedules. Formats could include pre-recorded video and/or synchronous video conferencing. In addition, regularly scheduled reminders of the mnemonic or flyers with the mnemonic posted in staff and provider workspaces could help retention of the information for further implementation implications.

The surveys could also use alterations. The first suggestion would be to link all three surveys to the participant to allow reviewers to follow the progression of the participants' understanding. Questions should be included to address the perceived quality of the education, allowing for improvements in educational offerings for quality and flexibility. The number of respondents may be influenced by offering an incentive for completed surveys, as well as offering each survey via email and QR code, rather than just one or the other.

Recommendations also address chart review. The first suggestion would be to include the frequency of safety plans documented for patients presenting with thoughts of self-harm or suicidal ideation. Safety plan documentation was not an objective of the current project however could potentially be beneficial to review in future research. Another recommendation would be to review patient perception of their ED experience when the ICAR²E mnemonic is used in their care. Comparing patient experiences with and without the mnemonic would help investigators determine if the mnemonic is beneficial to the patient.

The facility itself is another area with recommendations. Going forward, identifying a process for screening tools would clarify which role is responsible for implementing the PHQ-9 and C-SSRC. If staff are too busy to go through the surveys, copies could be filled out by

patients while waiting in the waiting room. Another recommendation or the facility would be to identify a process to verify the PHQ-9 and C-SSRS are part of the providers decision. While the screening tools are documented in outside documentation, providers at the ED face higher scrutiny if it is not part of their own documentation. The recommendation is to include the screening tool results in the provider note to help protect the provider and facility.

As stated in the literature review, there are not many available studies addressing provider confidence while treating patients with suicidal ideation in the emergency department. Continuing research regarding confidence in capability could increase understanding about the type of education needed. The last recommendation is to continue research similar to this educational project.

Dissemination

The project methods and literature review were shared at the North Dakota Nurse Practitioner Association Pharmacology Conference in fall of 2023; however, results were not available to disseminate at that time. The findings of this project will be discussed with the implementation facility, shared with the dissertation committee via the co-investigator's final defense, published in NDSU Proquest, and was shared with the author of the ICAR²E mnemonic to encourage further research. Journal publication is another avenue of dissemination that is being considered.

NP Role

Medicine is always evolving through current research. Recognizing and managing care of patients with suicidal ideation with current evidence-based practice is an important aspect of the NP role. The role of the NP is often within the rural setting. Equipping NPs with adequate tools and resources will help reduce the prevalence of suicide and help improve mental health

outcomes in rural America, as well as support the patients and family members of those at risk of a suicide attempt.

As well, the NP can act as scholar in linking research findings with gaps in patient care and processes to positively impact outcomes for patients, communities, and organizations. In addition, NPs can act as leader to help facilitate change, such as implementing safety plans into routine practice for patients with suicidal ideation. Finally, the NP can act as educator to educate colleagues, staff, and organizations as well as patients for improved care.

Conclusion

Suicidal ideation in the emergency department presents a unique complication to the flow of patient care by tying up staff and resources. The aim of this project was to empower ED staff with an easy to remember mnemonic to ensure all aspects of care are addressed. Survey findings, unfortunately, cannot be used to paint a reliable picture of how the education was perceived due to the surveys not being linked. Chart review showed the education had no impact on practice. Though very little information from this study informs further immediate practice, the project does present areas for improvement in the future and implications for further research in this area, specifically with this mnemonic and its use in the practice setting.

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APPENDIX A: IRB APPROVAL

NDSU NORTH DAKOTA STATE UNIVERSITY

09/12/2023

Dr. Adam G Hohman
Nursing

Re: IRB Determination of Exempt Human Subjects Research:
Protocol #IRB0004881, "Emergency Provider Education for Management of Patients with Suicidal Ideation in Rural Minnesota"

NDSU Co-investigator(s) and research team:

- Adam G Hohman
- Stephanie Lea Slivnik

Approval Date: 09/12/2023
Expiration Date: 09/11/2024
Study site(s): Glenwood MN, at Glacial Ridge Health System emergency department
Funding Source:
The above referenced human subjects research project has been determined exempt (category 2,4) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, *Protection of Human Subjects*).

Please also note the following:

- The study must be conducted as described in the approved protocol.
- Changes to this protocol must be approved prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
- Promptly report adverse events, unanticipated problems involving risks to subjects or others, or protocol deviations related to this project.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.

NDSU has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.

RESEARCH INTEGRITY AND COMPLIANCE
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NDSU is an EO/AA university.

APPENDIX B: EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Emergency Provider Education for Management of Patients with Suicidal Ideation in Rural Minnesota

Introduction

The escalating issue of mental health, particularly regarding suicide, has become a growing concern. Visits to the Emergency Department (ED) related to suicidal thoughts and self-harm are on the upswing, leading ED staff to adjust to the heightened workload. Rural EDs are grappling with more significant challenges as they experience a rapid increase in rates of suicidal ideation within their communities compared to urban counterparts. The surge in patients has resulted in a shortage of mental health professionals in rural Minnesota, subsequently reducing the availability of treatment options. This scarcity forces patients to turn to emergency care rather than receiving treatment in an outpatient setting. Providing tools for delivering current evidence-based care is expected to enhance staff confidence in providing care and improve patient outcomes.

Purpose

This project aims to determine if implementing the ICAR²E mnemonic will increase a provider's level of perceived confidence while managing the care of suicidal patients in the emergency department in rural Minnesota. Though rural providers treat and manage patients with suicidal ideation, little research is available regarding the level of confidence for ED providers caring for patients with suicidal ideation.

Project Design

The dissertation project had a quasi-experimental, mixed method design with online surveys conducted pre- and post-educational sessions and three months after the training. An education session was created through literature review and use of the ICAR²E mnemonic and presented to emergency department staff in a rural Minnesota setting. Surveys were completed regarding the surveys and the impact on their current practice.

Results and Conclusion

- Scheduling conflicts and decreased educational time reflected decreased interest in the topic.
- ED staff did report overall confidence in treating patients with suicidal ideation.
- Chart review showed no impact to current charting practices.

Recommendations

- Adjust educational session to include interactive activities such as role playing and group discussion.
- Surveys should be adjusted to be available through multiple avenues, as well as include questions regarding the quality of education.
- Chart review should be adjusted to include patient perception of care and implementation of safety plans.

APPENDIX C: PRE-SURVEY

Management of Patients with Suicidal Ideation in the Emergency Department Pre-Survey

DEMOGRAPHICS

Age: ___

Current Job Title:

- Physician
- Physician Assistant
- Nurse Practitioner
- Nurse
- Certified Nurse Aide
- Other _____

How long have you been certified in your current position?

- Less than 1 year
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- 11-20 years
- Over 20 years

How long have you practiced in an Emergency Department setting?

- Less than 1 year
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- 11-20 years
- Over 20 years

MANAGING SUICIDAL IDEATION
Likert Scale:
What is your perceived level of confidence about your current practices for managing care of patients with suicidal ideation?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

What is your perceived level of confidence about identifying suicidal ideation in patients?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

What is your perceived level of confidence about creating safety plans?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

What is your perceived level of confidence about current referral practices after a patient with SI is discharged?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

Which tools do you currently use to screen for depression and suicidal ideation? Select all that apply.

- PHQ-2
- PHQ-9
- Columbia Scale
- None
- Other _____

How often do you document the results of a screening tool for depression or suicidal ideation?

- Never
- Rarely
- Sometimes
- Often
- Always

How often do you place a discharge referral to a mental health professional for patients with suicidal ideation?

- Never
- Rarely
- Sometimes
- Often
- Always

APPENDIX D: POST SURVEY

Management of Patients with Suicidal Ideation in the Emergency Department Post-Survey

DEMOGRAPHICS

Age: ___

Current Job Title:

- Physician
- Physician Assistant
- Nurse Practitioner
- Nurse
- Certified Nurse Aide
- Other _____

How long have you been certified in your current position?

- Less than 1 year
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- 11-20 years
- Over 20 years

How long have you practiced in an Emergency Department setting?

- Less than 1 year
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- 11-20 years
- Over 20 years

MANAGING SUICIDAL IDEATION
Likert Scale:
After today's seminar, what is your perceived level of confidence about your current practices for managing care of patients with suicidal ideation?

- Very non-confident
- Non-confident
- Neither confident nor non-confident
- Mildly confident
- Very confident

After today's seminar, how likely are you to implement any or all aspects of the ICAR²E mnemonic in your current practice?

- Very unlikely
- Unlikely
- Neither likely nor unlikely
- Likely
- Very likely

After today's seminar, what barriers do you anticipate to using the ICAR²E mnemonic method in practice? (Select all that apply)

- Inadequate time
- Unfamiliar with mnemonic
- Do not see a need for it
- Currently use a different tool
- Other _____

APPENDIX E: THREE MONTH SURVEY

Management of Patients with Suicidal Ideation in the Emergency Department Three-Month-Survey

DEMOGRAPHICS

Age: ___

Current Job Title:

- Physician
- Physician Assistant
- Nurse Practitioner
- Nurse
- Certified Nurse Aide
- Other _____

How long have you been certified in your current position?

- Less than 1 year
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- 11-20 years
- Over 20 years

How long have you practiced in an Emergency Department setting?

- Less than 1 year
- 1 to 2 years
- 3 to 5 years
- 6 to 10 years
- 11-20 years
- Over 20 years

MANAGING SUICIDAL IDEATION
Likert Scale:
What is your perceived level of confidence about your current practices for managing care of patients with suicidal ideation?

- Very non-confident
- Non-confident
- Neither confident nor non-confident
- Mildly confident
- Very confident

What is your perceived level of confidence about identifying suicidal ideation in patients?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

What is your perceived level of confidence about creating safety plans?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

What is your perceived level of confidence about current referral practices after a patient with SI is discharged?

- Very non-confident
- Non-confident
- Neither confident or non-confident
- Mildly confident
- Very confident

Which tools do you currently use to screen for depression and suicidal ideation? Select all that apply.

- PHQ-2
- PHQ-9
- Columbia Scale
- None
- Other _____

How often do you document the results of a screening tool for depression or suicidal ideation?

- Never
- Rarely
- Sometimes
- Often
- Always

How often do you place a discharge referral to a mental health professional for patients with suicidal ideation?

- Never
- Rarely
- Sometimes
- Often
- Always

What are the barriers to post-discharge follow-up for mental health care?

- Availability of mental health professionals
- Patient transportation
- Other: _____

What changes have you made in practice since the educational session? (select all that apply)

- Implemented screening tools such as the PHQ-2, PHQ-9, or the Columbia scale
- Implemented safety plans
- Other: _____

What barriers have you encountered implementing the ICAR²E mnemonic method in practice? (Select all that apply)

- Inadequate time
- Unfamiliar with mnemonic
- Do not see a need for it.
- Currently use a different tool
- Other _____

APPENDIX F: INVITATION TO PARTICIPATE

Department of Nursing
NDSU Dept. 2670
Fargo, ND 58108-6050
701-231-7395

Refresher Couse on Management of Suicidal Ideation

My name is Stephanie Slivnik, and I am a DNP student at North Dakota State University. I am conducting an educational session among rural emergency department providers about the management of patients with suicidal ideation. The goal is that participation in my educational session, roughly one hour, will increase knowledge and confidence while providing care to an individual experiencing suicidal ideation.

As a rural emergency department employee, you are invited to participate in this project and attend the educational session. Your participation is completely voluntary, and you may withdraw from the seminar at any time with no penalty to you.

There are some risks to participants. These known risks may include the expectation to follow CDC guidelines and take additional precautions due to the COVID-19 pandemic. By participating in the project, you may benefit by receiving education related to management of suicidal patients.

After completion of the educational session, I will request your feedback on the seminar as well as obtain demographic information via a post-seminar survey. It should take about 5-10 minutes to complete the pre and post-seminar surveys. You will be asked to complete another survey three-months after the educational session that should take 10-15 minutes. These surveys are voluntary and seminar data is anonymous. That means that no one, not even members of the practice improvement project team, will know that the information you give comes from you.

If you have any questions or concerns about this project, please contact me at stephanie.slivnik@ndus.edu, or contact my chair Adam Hohman at adam.hohman@ndus.edu

You have rights as a research participant. If you have questions about your rights or complaints about this research, you may talk to the research team or contact the NDSU Human Research Protection Program at 701.231.8995, toll-free at 1-855-800-6717, or by email at ndsu.irb@ndsu.edu.

Thank you for your time and taking part in this practice improvement project,

Stephanie Slivnik, DNP-Student
Email: stephanie.slivnik@ndus.edu

North Dakota State University School of Nursing DNP Program
Invites you to attend: **Refresher Couse on Management of Suicidal Ideation**
Speaker: Stephanie Slivnik, BSN, RN

Topics: **Managing Patients with Suicidal Ideation**

Education will be completed through lecture.

Learning Objectives: At the end of the presentation, participants will be able to:

- Identify validated screening tools for depression and suicidal ideation
- List protective and risk factors for patients with suicidal ideation
- Identify topics to include in a safety plan

September 18, 2023
Glacier Ridge Emergency Department
Room determined by ED Manager
8a-830a

October 18, 2023
Glacier Ridge Emergency Department
Room Determined by ED Manager
12p-1p

Participation is completely free.
If a participant has any questions, please email stephanie.slivnik@ndus.edu

APPENDIX G: PERMISSION FOR ICAR²E

Re: Permission Request

Slivnik, Stephanie <stephanie.slivnik@ndsu.edu>
Mon 4/3/2023 10:28 AM
To: Wilson, Michael P <MPWilson@uams.edu>
Cc: Hohman, Adam <adam.hohman@ndsu.edu>

Dr. Wilson,

Thank you for your approval. I will make sure to send you a copy once it's finished.

Thank you,

Stephanie Slivnik, BSN, RN
North Dakota State University
Doctor of Nursing Practice Student
stephanie.slivnik@ndus.edu

From: Wilson, Michael P <MPWilson@uams.edu>
Sent: Saturday, April 1, 2023 2:47 PM
To: Slivnik, Stephanie <stephanie.slivnik@ndsu.edu>
Cc: Hohman, Adam <adam.hohman@ndsu.edu>
Subject: Re: Permission Request

Stephanie - I would be delighted if the manuscript would be helpful in this way, and your research would be one of the first implementation efforts. Please let me know if I can help in any way, and please be sure to send me your results when done.

Best,
Mike
/Michael Wilson, MD PhD

From: Slivnik, Stephanie <stephanie.slivnik@ndsu.edu>
Sent: Saturday, April 1, 2023, 14:15
To: Wilson, Michael P <MPWilson@uams.edu>
Cc: Hohman, Adam <adam.hohman@ndsu.edu>
Subject: Permission Request

This Message Is From an External Sender
This message came from outside your organization.

Hello Dr. Wilson,

I am a North Dakota State University DNP student and request permission to use one of your articles for my dissertation. The article is titled "ED recommendations for suicide prevention in adults: The ICAR²E

mnemonic and a systematic review of literature". I was impressed with the research and structure and believe it would be perfect for my project. I plan to use the mnemonic as the structure to provide education to rural Minnesota ED providers with the goal to increase providers' perception of confidence while caring for patients with suicidal ideation. My committee chair has been CC'd on this email. Please let me know if you have any questions or concerns. I appreciate your time.

Thank you,

Stephanie Slivnik, BSN, RN
North Dakota State University
Doctor of Nursing Practice Student
stephanie.slivnik@ndus.edu

Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and privileged information. Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

APPENDIX H: PERMISSION TO IMPLEMENT

Stephanie,
We don't have a formal IRB here. But our CEO has authorized our ED Medical Director and I to review your study and to approve it to move forward (provided we don't have concerns or you're able to address our concerns).
Email is the most reliable way to get in touch with me, or by leaving a voicemail. My direct line is (320) 334-5647.

Mandy Recker, MSN, RN, PHN

Emergency Department Manager

From: Amanda Recker <Amanda.ReckerRN@glacialridge.org>
Sent: Wednesday, September 6, 2023 2:36 PM
To: Slivnik, Stephanie <stephanie.slivnik@ndsu.edu>
Subject: Re: Dissertation Project IRB

I'm verifying with my higher-ups right now. I should have the answer of where to get it to tomorrow at the latest.

Mandy Recker, MSN, RN, PHN
Emergency Department Manager

From: Slivnik, Stephanie <stephanie.slivnik@ndsu.edu>
Sent: Wednesday, September 6, 2023 2:07 PM
To: Amanda Recker <Amanda.ReckerRN@glacialridge.org>
Cc: nathan tiedeman <nathan.tiedeman@outlook.com>; Hohman, Adam <adam.hohman@ndsu.edu>
Subject: Dissertation Project IRB

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.
Hello Mandy,

I am working with the NDSU IRB and they requested to get in touch with someone from Glacial Ridge IRB to discuss this project. May I provide them with your contact information? If so, what is your preferred method of contact?

Thank you,

Stephanie Slivnik, BSN, RN
North Dakota State University
Doctor of Nursing Practice Student
stephanie.slivnik@ndus.edu

APPENDIX I: PRESENTATION SLIDES

PRE-SURVEY

1

MANAGEMENT OF SUICIDAL IDEATION

Stephanie Slivnik, BSN, RN
North Dakota State University
Doctor of Nursing Practice Program

2

TABLE OF CONTENTS

01 SUICIDAL IDEATION (SI) STATISTICS

02 ICAR²E MNEMONIC

03 MINNESOTA RESOURCES

3

SUICIDAL IDEATION IN THE UNITED STATES

10th leading cause of death

30% increase in suicide rates between 2000 and 2020

23rd highest suicide rate in the world

(CDC, 2022) (CDC, 2023)
(World population review, 2023)

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For each completed suicide

- 275 people have contemplated suicide
- 27 people have made suicide attempts
- 8 people have visited the emergency department for suicide attempts
- 4 people have been hospitalized for suicide attempts

(CDC, 2023)

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Suicidal Ideation in Minnesota

8th leading cause of death

723 deaths in 2020

10,097 emergency visits related to self harm

44,317 emergency visits reporting suicidal ideation, but not self harm

(Gengerich & Carter, 2021)
(Minnesota department of health, 2022)
(Olfson et al., 2017)

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Suicidal Ideation in Rural areas

Mental Health Providers in Minnesota

Rural: 1:1,960
Urban: 1:340

Over 65 years old

3x to 4x more likely than urban individuals

Rate Increase between 1999 and 2017

Rural counties: 53%
Urban counties: 16%

(Rural health information hub, 2022)
(Minnesota's hospitals, 2019)
(CDC, 2018)

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Suicidal Ideation in the Emergency Department

650,000 Emergency department (ED) visits related to suicide annually

10% of ED patients have suicidal thoughts/behaviors but are not reported

11% of low acuity patients have increased risk of suicide

(Wilson et al., 2020)
(CDC, 22022)
(Betz & Boudreaux, 2016)
(McBride et al., 2018)

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American Journal of Emergency Medicine 38 (2020) 571–581

Contents lists available at ScienceDirect

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Original Contribution

ED recommendations for suicide prevention in adults: The ICAR²E mnemonic and a systematic review of the literature

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[c] American Foundation for Suicide Prevention, New York, NY, United States of America
[d] Emergency Nurses' Association, Des Plaines Schaumburg, IL, United States of America
[e] Department of Psychiatry, University of Colorado School of Medicine, Denver, CO, United States of America
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ABSTRACT

Introduction: Caring for suicidal patients can be challenging, especially in emergency departments without easy access to mental health specialists. The American College of Emergency Physicians and the American Foundation for Suicide Prevention appointed a working group to create an easy-to-use suicide prevention tool for ED providers.

Methods: The writing group created an easy-to-use mnemonic for the care of adult patients as a way of organizing sequential steps, accompanied by a systematic review of available ED-based suicide prevention literature. The systematic review was performed both to ensure that all relevant evidence was taken into account as well as to evaluate the strength of evidence for each recommendation. Levels of evidence were assigned utilizing the ACEP level of evidence classification.

Results: The writing group created the mnemonic ICAR²E, which stands for Identify suicide risk; Communicate; Assess for life threats and ensure safety; Risk assessment (of suicide); Reduce the risk (of suicide); and Extend care beyond the ED. 31 articles were identified in the search, and were included in the systematic review.

Conclusions: The ICAR²E mnemonic may be a feasible way for practicing ED clinicians to provide evidence-based care to suicidal patients. However, further research is needed.

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ICAR²E

- I-Identify suicide risk in the emergency department
- C-Communicate with patient
- A-Assess for medically life threats and ensure environmental safety
- R-Risk assessment
- R-Reduce risk of suicide
- E-Extend care beyond emergency department

(Wilson et al., 2020)

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Identify Suicide Risk in the Emergency Department

Screening

Patient Health Questionnaire (PHQ) 2 and 9

Columbia-Suicide Severity Rating Scale (C-SSRS)

(Christensen LeCloux, et al., 2022)
(Wilson et al., 2020)

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Patient Health Questionnaire

Patient Health Questionnaire-9 (PHQ-9)

Instructions:
Please respond to each question.

Over the last 2 weeks, how often have you been bothered by any of the following problems?

Give answers as 0 to 3, using this scale:
0=Not at all; 1=Several days; 2=More than half the days; 3=Nearly every day

1. **Little interest or pleasure in doing things**
   ☐0 ☐1 ☐2 ☐3
2. **Feeling down, depressed, or hopeless**
   ☐0 ☐1 ☐2 ☐3
3. **Trouble falling or staying asleep, or sleeping too much**
   ☐0 ☐1 ☐2 ☐3
4. **Feeling tired or having little energy**
   ☐0 ☐1 ☐2 ☐3
5. **Poor appetite or overeating**
   ☐0 ☐1 ☐2 ☐3
6. **Feeling bad about yourself - or that you are a failure or have let yourself or your family down**
   ☐0 ☐1 ☐2 ☐3
7. **Trouble concentrating on things, such as reading the newspaper or watching television**
   ☐0 ☐1 ☐2 ☐3
8. **Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual**
   ☐0 ☐1 ☐2 ☐3
9. **Thoughts that you would be better off dead or of hurting yourself in some way**
   ☐0 ☐1 ☐2 ☐3

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

Give answers using this scale:

☐Not difficult at all ☐Somewhat difficult ☐Very difficult ☐Extremely difficult

(NIDA, 2014)
(Levis et al., 2020)

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Columbia-Suicide Severity Rating Scale (C-SSRS)

COLUMBIA-SUICIDE SEVERITY RATING SCALE
Screen Version - Recent

SUICIDE IDEATION DEFINITIONS AND PROMPTS	Past month YES	NO
Ask questions that are bolded and underlined.		
Ask Questions 1 and 2		
1) ***Have you wished you were dead or wished you could go to sleep and not wake up?***		
2) ***Have you actually had any thoughts of killing yourself?***		
If YES to 2, ask questions 3, 4, 5, and 6. If NO to 2, go directly to question 6.		
3) ***Have you been thinking about how you might do this?*** E.g. "*I thought about taking an overdose but I never made a specific plan as to when where or how I would actually do it…and I would never go through with it.*"		
4) ***Have you had these thoughts and had some intention of acting on them?*** As opposed to "*I have the thoughts but I definitely will not do anything about them.*"		
5) ***Have you started to work out or worked out the details of how to kill yourself? Do you intend to carry out this plan?***		

6) ***Have you ever done anything, started to do anything, or prepared to do anything to end your life?*** Examples: Collected pills, obtained a gun, gave away valuables, wrote a will or suicide note, took out pills but didn't swallow any, held a gun but changed your mind or it was grabbed from your hand, went to the roof but didn't jump; or actually took pills, tried to shoot yourself, cut yourself, tried to hang yourself, etc. **If YES, ask: *Was this within the past three months?***	YES	NO

Low Risk
Moderate Risk
High Risk

(The Columbia Lighthouse Project, n.d.)
(Wilson et al., 2020)

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Identify Suicide Risk in the Emergency Department

Risk factors
- Self-harm
- Substance use
- Pre-existing mental health illness

(Bjurebert at al., 2020)
(Urban et al., 2020)

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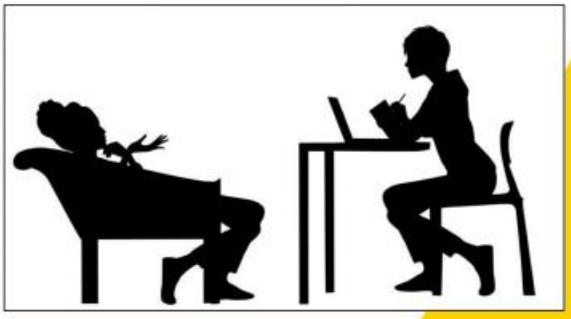
Communicate with Patient

Interview
Environment



(Wilson et al., 2020)

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Assess for Medically Life Threats and Ensure Environmental Safety

Physical Exam
Mental Status
Laboratory Tests

Safe Environment

(JCAHO, 2019)
(Wilson et al., 2020)

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Risk Assessment

Risk and Protective Factors:

Personal

Relationship

Community

Society

(CDC, 2022)

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Risk Assessment
Risks

Personal:
- Substance use
- Impulsiveness
- Hopelessness
- Victim of violence
- Financial instability
- Previous mental health diagnosis

Community:
- Discrimination
- Community violence
- Poor access to healthcare
- Increase in completed suicides

Relationship:
- Violence
- Isolation
- Suicide of loved one
- Victim of bullying

Societal:
- Stigma
- Ease of access to method
- Media representation

(CDC, 2022)

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Risk Assessment: Preventative

Personal:
- Efficient coping skills
- Reasons for living
- Sense of identity

Community:
- Feeling connected
- Access to healthcare

Relationship:
- Supportive care system
- Close bond with loved ones

Societal:
- Decreased access to means for suicide
- Decreased societal acceptance of suicide

(CDC, 2022)

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Reduce Risk of Suicide

Safety Plan

Lethal Means Access

(Wilson et al., 2020)

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Reduce Risk of Suicide

Safety Plan

Safety plan vs contract for safety

What it should include:

- Warning signs of SI
- Coping strategies
- People to distract
- People to support
- Professional support
- Environmental safety

(Bryan et al., 2017)
(Wilson et al., 2020)

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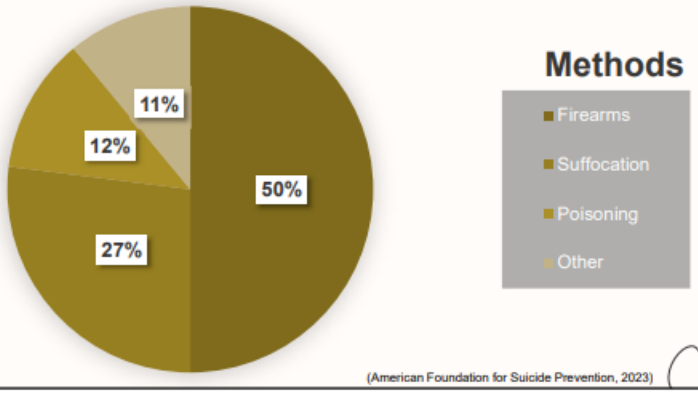
Reduce Risk of Suicide

Access to Lethal Means



(American Foundation for Suicide Prevention, 2023)

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Extend care beyond emergency department

Referral

- Pair with safety plan

Reach Out

- Post Card
- Secure Message
- Phone call

(Bryan et al., 2017)
(Carter et al., 2005)
(Wilson et al. 2020)

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ICAR²E

- I-Identify suicide risk in the emergency department
- C-Communicate with patient
- A-Assess for medically life threats and ensure environmental safety
- R-Risk assessment
- R-Reduce risk of suicide
- E-Extend care beyond emergency department

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Resources in Minnesota

National Alliance on Mental Illness

(NAMI)
Supports individuals and family members

Psychiatric Assistance Line

(PAL)
Connects clinicians to psychiatric providers
No cost

National Suicide Hotline

988
Trained counselors for individuals experiencing crisis

(The National Alliance on Mental Illness Minnesota, 2018)

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Post-education survey

- Please scan the code and respond to the 10–15-minute survey
- Another survey will be sent to you in 3 months to assess if the education was helpful

Thank you for your time today

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THANKS!
DO YOU HAVE ANY QUESTIONS?
youremail@freepik.com
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