INPATIENT SUICIDE IN THE GENERAL MEDICAL SETTING:

AN INTEGRATIVE LITERATURE REVIEW

by

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DEDICATION

This paper is dedicated to Gary and Sandy Mihelish for their ongoing support of NAMI Montana. Their tireless work has led the way to reduction of the stigma surrounding mental illness.

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ABSTRACT

As many as 69% of individuals who kill themselves visit the Emergency Department (ED) for reasons unrelated to suicide and more than one in ten completed suicides are by individuals who were seen in an ED within two months of dying. Most were not screened for suicide risk (Knesper, 2010). Although 52% of inpatient suicides occur in psychiatric settings, focusing attention on these suicides while ignoring the 48% of suicides occurring in the general hospital units is not addressing the whole of the problem. This review centered around literature pertaining to inpatient suicide in the general hospital setting with a focus on the medical-surgical and emergency departments. Data base search terms selected were "inpatient," "suicide," "impatient suicide emergency department," and "inpatient suicide medical-surgical." Twenty-one articles met the inclusion criteria (i.e., the research was done using adults in the general hospital setting, published after January 1, 2006 in the United States, written in English and was peer reviewed) and six were identified as empirical evidence. These articles were reviewed to evaluate the methodology and clinical application, compared and contrasted for similarities and differences, and patterns and themes were identified and described. After review, these studies demonstrated that nurses can play a key role in reducing suicide rates by identifying patient risk, taking appropriate action, creating a safe environment and empowering nurses to assess, make decisions and follow-up and mandatory reporting. It is clear from the literature surveyed that more research regarding inpatient suicide is a critical need.

CHAPTER I

INTRODUCTION

In 2009, suicide was the tenth leading cause of death in the United States, out pacing homicide by over two to one (The American Association of Suicidology, AAS 2011). Suicide ranked higher than septicemia, chronic liver disease and cirrhosis, essential hypertension, and Parkinson's disease in number of deaths caused in this country (AAS, 2011). Worldwide suicide rates have not decreased in the last 100 years (Centers for Disease Control and Prevention, 2009), which contrasts dramatically with progress in decreasing mortality from other diseases and disorders. As of 2009, there were forty-six randomized controlled trials published evaluating treatment interventions targeted at reducing suicidal behavior. Many of these studies were done outside the United States and none addressed inpatient suicide.

In hospitals accredited by the Joint Commission on Accreditation in the United States, inpatient suicide is considered a sentinel event. A sentinel event is defined as an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof (Joint Commission, 2011). Reporting of sentinel events is voluntary, so the number of events reported represents only a portion of actual events which have occurred.

Inpatient suicide has been a consistent problem for hospitals for as long as these events have been reported. The relationship between physical illness, psychiatric illness, personal and social factors may trigger impulsive acts and other self-harming or suicidal

behaviors. These factors can combine to make assessment for suicide risk more challenging for staff in all clinical areas of the general hospital, particularly in the emergency department and the medical-surgical units (Knesper, 2010). The Joint Commission has provided information, advice and recommendations to assist hospitals in decreasing the number of inpatient suicides, however current statistics show that these efforts are not achieving that goal (Joint Commission, 2011). Most Joint Commission requirements are aimed specifically at psychiatric hospitals and psychiatric units of general hospitals. In the general medical setting, patients are only required to be screened for suicide risk if their primary complaint is a psychiatric or emotional disorder.

Since the Institute of Medicines' report *To Err is Human* (IOM, 2000), healthcare organizations are now more focused on patient safety, but the number of patients with mental disorders is putting an increasing demand on the acute healthcare system (Bumgarner & Van Heywood, 2009). Hospitals are expected to provide a safe and therapeutic environment. The fact that there are a significant number of people committing suicide in Emergency Departments and on medical-surgical floors in U.S. hospitals suggests that there is a gap between patients who are currently meeting the Joint Commissions' screening requirements and the general hospital patients whose suicide risk has not been identified (Cullen, 2008).

<u>Physical Illness and Suicide</u>

The role played by general medical illness as a potential risk factor for suicidality is unclear due to its high co-morbidity with depression. Depression may explain the

relationship between medical illness and suicide attempts or suicidal ideation, or alternatively, medical illness could represent an independent risk factor. Whether such a relationship exists after controlling for depression is important (Druss & Pincus, 2000). In their 2000 study, Druss and Pincus examined this relationship. After adjusting for depressive illness and alcohol use a significant association was found between suicidality and chronic medical conditions. Over sixty percent of subjects with a chronic medical illness in this study reported suicidal ideation and over twenty-five percent of those with a chronic medical illness had attempted suicide. Specifically, patients with pulmonary disease had a two thirds increase in odds of suicidal ideation. Cancer and asthma patients had a more than fourfold increase in likelihood of suicide attempt (Druss & Pincus, 2000).

Many patients receiving care in a general hospital setting may also be receiving treatment for a serious mental illness (SMI). SMI as defined by the Department of Health and Human Services Substance Abuse and Mental Health Services Administration Office of Applied Studies (SAMHSA), requires the person to have at least one 12-month disorder, other than a substance use disorder, that meets DSM-IV-TR criteria (American Psychiatric Association, 2000) and to have "serious impairment" defined as a Global Assessment of Functioning (GAF) score of less than 60 on a scale of 1/100 (Endicott, Spizer, Fleiss, & Cohen, 1976). SMI is experienced if psychiatric symptoms and distress involve long-term and life-role impairing disability (Shinnar, Rothbard, Kanter & Jung, 1990).

Co-morbidity is common between mental disorders and chronic physical diseases. Compared to people without mental disorders, adults with SMI have higher rates of chronic general medical conditions and a higher rate of premature mortality. Death rates among patients with SMI are three times higher than in the general U.S. population, with heart disease being the leading cause of death (Miller, Paschall, & Svendsen, 2006). In people with SMI, weight gain associated with medication, substance abuse, smoking, sedentary lifestyle and lack of proper personal hygiene are all contributors to an increase in the incidence of medical illnesses such as infectious diseases, COPD, high blood pressure, diabetes and cardiovascular disease. The metabolic effects of second-generation anti-psychotics, though not a focus of Miller's study, were consistent with his findings (Miller et al., 2006). These metabolic side effects are most significant with olanzapine and clozapine, and although aripiprazole and rispiridone cause less weight gain, all of these medications are contributing factors to the development of physical illnesses (Tschoner et al., 2007). Combined with SMI, these co-morbidities increase the likelihood that patients with SMI will require hospitalization in a general medical setting.

<u>Mental Illness and Suicide</u>

Ninety percent of all people who commit suicide have a diagnosable mental disorder at the time of death, and sixty percent of them were attributed to depression (World Health Organization, 2006). The American Association of Suicidology estimates that there are approximately twenty-five attempted suicides for each completion, and many people who fail in their attempt will require treatment for injuries at a general

hospital emergency department (Bumgarner & Haygood, 2009). In 2008, approximately 666,000 persons visited hospital emergency departments (ED) for non-fatal self-inflicted injury. One third of these patients required extended hospitalization, the remainder were treated and released (Centers for Disease Control and Prevention, 2011; Knesper,2010). As many as sixty-nine percent of individuals who kill themselves visit the ED for reasons unrelated to suicide and more than one in ten completed suicides are by people who were seen in an ED within two months of dying. Most were not screened for suicide risk (Knesper, 2010).

<u>Situational and Personal Factors in Suicide</u>

Patients treated in a general medical hospital setting may be at risk for suicide for reasons other than their physical illness. Many personal and situational factors may be involved. It is not clear yet whether the failing United States economy has had an impact on suicide rates or hospitalizations from attempts, although economic recessions involving the occurrence of job loss and home foreclosures have been associated with suicidal behavior (Van Orden et al., 2010). Individuals who are unemployed are two to four times more likely to attempt suicide (American Association of Suicidology, 2010).

Elders are another group who may be at higher risk. The functional impairment and increase in physical illness the elderly sometimes experience may cause them to be hospitalized more frequently, and factors such as social isolation, bereavement and family discord can increase suicide risk (Conwell & Duberstein, 2001; Caine, 2001; Conwell, Duberstein & Caine, 2002).

Family conflict is a strong risk factor for suicide, with survivors of domestic violence rating high for suicide attempts. One in four women who have survived domestic violence will attempt suicide (American association of Suicidology, 2009). Alternatively, a satisfying marriage has been shown to be a protective factor against suicide. Divorced and separated individuals are nearly two and a half times more likely to complete a suicide than their married counterparts, with nine men commiting suicide for every one woman (Kposowa, 2000).

As adults many victims of childhood sexual abuse are at higher risk for suicide attempts. An increasing number of general medical patients are now being discovered to have this history. In a recent review of adults reporting childhood sexual abuse, there was strong evidence found that in genetically vulnerable individuals, genetic changes can occur which may alter various brain functions, leaving that individual susceptible to SMI. Also, a relationship was found between history of sexual abuse and disorders such as gastrointestinal disorders, chronic pelvic pain, and seizures, increasing the likelihood of hospitalization and suicide attempts (Chen et al., 2010).

<u>Inpatient Suicide: A Sentinel Event</u>

Since 1997, suicide has consistently ranked in the top five most common sentinel events reported in hospitals (Joint Commission, 2009). Since sentinel event reporting began in 1996, suicide has been the most consistently reported event (Joint Commission, 2010). While other sentinel events have increased and decreased in numbers, suicide has remained at a constant level. While suicide is ranked fifth for the most recent years, 2009

through the third quarter of 2011, the number of inpatient suicides is growing. As of the

third quarter of 2011, suicide is likely to reach the highest number of deaths reported

since the policy was enacted (see Appendix A).

Hospitals are encouraged but not required to report these events. When an event

is reported, the hospital is expected to conduct a root cause analysis, develop a plan for

improvement, implement the plan and monitor improvements. Information about the

event, including root cause analysis and any other relevant details are then forwarded to

the Commission for use in its database. The Commission however does not monitor the

improvements, but entrusts the hospital to follow the effectiveness of improvements

(Joint Commission, 2010). While a large percentage of these suicides occur in behavioral

health units or psychiatric hospitals, as many as forty-eight percent of inpatient suicides

happen in other units of general hospitals (Mills et al., 2008). As early as 1998,

WilliamTucker,M.D., an advisor to the Joint Commission recommended that all patients

be screened on admission, those with high risk should be placed on constant observation,

and staff should check the patients suicidal intent at least once per shift if suspicion is

high (Joint Commission, 1998).

Despite the recommendations, the number of inpatient suicides is rising. In 2002,

the Commission established its National Patient Safety Goals (NPSGs) program. The

NPSGs were designed to help hospitals address specific areas of patient safety (Joint

Commission, 2011). NPSG 15.01.01 addressed the issue of patient suicide and screening

for patients at risk. It required that all patients in psychiatric hospitals and all patients in

psychiatric units of general hospitals be screened for suicide risk. Goal 15.01.01 also

encouraged but did not require screening for patients in general hospital emergency

departments or on medical-surgical floors, if their primary complaint was not related to

an emotional or behavioral disorder (Joint Commission, 2008).

<div align="center">Basic Suicide Assessment</div>

In 2007, the Commission produced a resource guide for implementing the updated

goals on suicide. It presents the Basic Suicide Assessment Five-Step Evaluation (BE-

SAFE). This tool, described in detail in the guide has five steps: a) Identify risk factors,

noting those that can be modified in the short term to reduce risk, b) identify protective

factors, noting those that can be enhanced, c) Ask specifically about suicide, suicidal

ideation and history of suicidal behavior, d) Determine level of risk, develop the

appropriate treatment setting and plan to address risk, e) Document the assessment,

treatment plan and instructions. The guide stresses however that assessment tools, while

valuable, are not a substitute for thoughtful clinical judgment (Joint Commission

Resource Guide, 2007, p.5).

Most recently, the Commission issued a follow-up Sentinel Event Alert in

November 2010, aimed specifically toward emergency departments and medical-surgical

units. The alert reiterates many of the recommendations made in the 2007 resource guide,

and makes additional suggestions to help staff in these units recognize and care for

suicidal patients. The alert encourages hospitals to educate nurses and empower nurses to

be proactive in patient care, providing intervention for high risk patients, calling mental

health professionals when required and conduct ongoing review of risk reduction strategies (Joint Commission Sentinel Event Alert, 2010).

When a suicide or attempted suicide occurs in a hospital, reporting is not required. It is voluntary, decided upon by the hospital administration. Should the hospital decide to report, the Joint Commission requires the hospital to conduct a root cause analysis (RCA), which is intended to distinguish where an error occurred in order to safeguard against future mishaps (Cullen, 2008). Data strongly suggests that conducting an RCA does not prevent inpatient suicides; these events have remained near the top of the list of Joint Commission sentinel events since 1995. The RCA, mandated by the Joint Commission in 1996, is considered by many to be the definitive tool for examining sentinel events. Although it has been widely embraced by hospitals, to date there have been no studies evaluating this tool for its effectiveness and utility (Ballard, 2008; Wu, 2008).The fundamental principal with RCA is post event analysis and here within lies the problem; it is not preventive, or proactive in assessment, screening, or identification of those who are at risk for inpatient suicide.

Myths about Suicide

There is a culture of stigma that surrounds suicide and care of a suicidal individual may be affected by both cultural stigma and myths (see Table1) (Wint, 2008; Valente, 2010). As healthcare professionals, our attitude toward suicide is important because most people who die by suicide have contact with a healthcare professional within a month before their death (Captain, 2006; Stacey, 2011). This may represent a

missed opportunity prevent a death. The myths about suicide are pervasive in society and

can increase the stress level of healthcare providers, so that they try to avoid the topic

altogether (Stacey, 2011).

Table 1: Myths of Suicide

Discussing suicide may "give the patient ideas"
Patients who repeatedly give suicide threats don't really want to die
A history of prior attempts means the patient is not serious
Depression is a normal reaction to medical illness
Wanting to die is common in the seriously ill patient
Suicidality and depression will simply fade away with time
Suicide happens without warning
A suicide attempt reduces the risk of future attempts
Directing anger at others reduces risk
A no suicide contract is reliable (Wint, 2008; Valente, 2010; Captain, 2006)

Dispelling the myths surrounding suicide and suicidal behavior is an important

first step in changing attitudes about suicide. Although there are data that belie each of

these conventional beliefs, these misleading views remain widely held. Sixty-nine percent

of people who complete suicide communicate their intent within the prior year, and at

least ten percent of the people who make threats eventually die by suicide. Over eighty

percent of people who complete suicide tell a healthcare professional, usually a nurse,

about their suicidal impulses. Between twenty and fifty percent of suicides are by people

who have attempted before. The most common misconception is that once a person decides to die by suicide there is nothing anyone can do to stop them, when actually a suicidal person sees death as the only way to stop their pain (Stacy, 2010; Valente, 2010).

Problem and Purpose Statement

Most of the recommendations for safety improvements and screening procedures made by the Joint Commission were instituted to address psychiatric hospitals and behavioral health units. NPSG 15.01.01, while addressing psychiatric units, also made recommendations for screening in general hospitals. While fifty-two percent of inpatient suicides occur in psychiatric settings, focusing attention on them to the exclusion of the forty-eight percent occurring in general hospital units is ignoring a large part of the problem. Therefore the purpose of this integrative review is to use diverse methodologies to define the concept and variables involved with the sentinel event of inpatient suicide. The review will analyze the evidence and identify themes which describe interventions to eliminate inpatient suicide (Whittemore & Knafl, 2005, p.547) that can be implemented by the Clinical Nurse Leader (CNL). Variables to be examined are the Joint Commissions' recommendations for preventing suicide in general hospital settings: screening patients with primary complaint of psychiatric or emotional disorder, screening patients with a history of psychiatric disorder, regardless of chief complaint, educating staff about risk factors, empowering staff to take substantive action and review of risk reduction strategies for preventing suicide in the general medical setting.

Theoretical Framework

The framework of Whittemore and Knafl (2005) will be used to guide this integrative review. This framework will enhance the rigor of this project throughout the following stages: a) problem identification, b) literature search, c) data evaluation, and d) data analysis. In addition, Whittemore and Knafl identify specific steps for identifying patterns, themes, and relationships.

Summary

Suicidality is not limited to those diagnosed with mental illness, but may include individuals with situational or personal factors which put them at increased risk. Suicide in the general hospital setting remains a significant health care problem. The general medical setting is by nature an inherently a less safe environment for patients experiencing suicidality. Those at risk may not be adequately identified and assessed for suicide, and a greater understanding of the factors associated with suicidality is a first step in dispelling the myths that limit direct care providers in addressing the needs of these patients (Bumgarner and Van Haygood, 2009). This review will examine existing literature regarding implementation of the Joint Commission recommendations to prevent inpatient suicides and gain insight into the effectiveness of current practices.

CHAPTER II

LITERATURE SEARCH

An integrative review was conducted of pertinent literature about inpatient suicide in the general hospital setting with a specific focus on the medical-surgical and emergency departments. Integrative review methodology was chosen because it is the broadest type of research review method. Nursing researchers strive to provide the best evidence to inform practice and this goal cannot be met if the literature used is narrow in scope. Finding the existing science without introducing bias can be a challenge (Conn, Isramalai, Rath, Jantarakupt, Wadhawan, & Dash, 2003). A comprehensive research strategy requires use of electronic databases, ancestry searches, citation index searches, research registries and internet searches. Each of these methods has limitations and advantages as a search strategy, and a determination must be made by the researcher before beginning a literature review.

Inclusion and Exclusion Criteria

For the purpose of this review, the researcher set the following limits: a) research published after January 1, 2006, b) research conducted in the United States, c) adults, d) general hospital setting, e) English language, and f) peer-reviewed. The date limit was set to coincide with the NPSG 15.01.01 (identifying patients at risk for suicide). The United States was chosen because the U.S.care system is currently patient or third party payer, while other countries have universal healthcare systems. Adults were chosen

because pateints under the age of eighteen years of age would be treated in a pediatric unit. General hospital was chosen because this population was identified in the Sentinel Event Alert of 2010. Only English language, peer reviewed studies of both experimental and non-experimental design were included. Theoretical data from peer reviewed journals were not included because the researcher wanted empirical evidence to evaluate progress made in implementing the Joint Commissions' NPSG 15.01.01, and survey the results to see what strategies were successful.

<div align="center">Search Strategy</div>

A research librarian was consulted for determination of appropriate data bases and search terms. At the suggestion of the librarian, data base search terms selected were "inpatient" and "suicide". Databases suggested by the librarian and used were Cochrane, CINAHL, Medline on Web of Science, PsychInfo, and Google Scholar. If databases had the ability to set limiters those limits were applied based on the inclusion and exclusion criteria described.

Using these keywords and limiters no results were found in the Cochrane database. When the remaining databases were searched twenty-one articles were found meeting the criteria outlined. Due to this small number it was decided to use the additional terms "inpatient suicide emergency department", and "inpatient suicide medical-surgical". Through the application of these search strategies and limiters three hundred and thirty abstracts were reviewed. No additional articles were found. The

twenty-one articles found were extensively reviewed and six contained empirical

evidence. These included two descriptive studies and four retrospective studies.

Summary

Using standard search techniques and the most frequently used databases yielded

only twenty-one articles for this review, only six of which contained empirical evidence.

These six were single studies, representing the lowest level of evidence on a topic.

CHAPTER III

DATA EVALUATION

The goal of this integrative review was to examine empirical literature related to

implementation of The Joint Commission recommendations in NSPG 15.01.01.

According to levels of evidence described in DiCenso (2005), practice guidelines are

developed using evidence from systematic reviews and synopses of syntheses. These

guidelines are found at the National Guideline Clearinghouse (NGC) website

(www.guideline.gov). These guidelines are considered the highest level of evidence

available on a healthcare topic. The Cochrane database is considered midlevel

preprocessed evidence. It will produce systematic reviews which are commonly used to

inform clinical decision making. When using either of these databases, inclusion and

exclusion criteria should be specified to conduct a comprehensive search. A good

guideline will summarize all evidence from clinical trials (DiCenso, 2005).

Using the unprocessed databases of CINAHL, Medline, PsychInfo and Google

Scholar will produce largely original studies the quality of which may be excellent or

poor (DiCenso, 2005, p. 39). Individual studies represent the foundation of the hierarchy

of evidence and may represent different study design categories. These may range from

randomized, double blinded controlled trials, considered the gold standard of study

design, to non -experimental single case reports (DiCenso, 2005).

The following steps were followed for analysis of the empirical data found in this

review: each study was read through to get a sense of the whole and critiqued for

methodology, and clinical application. Each study was compared and contrasted for similarities and differences and the patterns and themes were identified and described. Using this framework, described by Whittemore and Knafl (2005), the evidence found will be presented.

CHAPTER IV

EVALUATION OF THE LITERATURE

Six studies were chosen for this integrative review based solely on their having

met the inclusion criteria (Table 2).   They represent a disparate level of quality and

applicability. The literature search for this review yielded four descriptive retrospective

studies and two non-randomized descriptive studies. These single studies are very low on

the hierarchy of evidence described by DiCenso et al. (2005). Though meeting the

inclusion criteria of articles published after January 1, 2006, the majority of data was

collected much earlier than 2006.

Overview of Studies Included

 Suicide in the Medical Setting

 Ballard, Pao, Henderson, Lee, Bostwich and Rosentstein, (2008), compiled data to

compare characteristics of three groups of people who completed suicide. Data from

twelve case series' were compiled for general medical patients, CDC data from 2004 was

gathered for the general population and nineteen articles on psychiatric inpatients were

identified. Due to a lack of current data, studies with data from as far back as 1947 were

used and these included several studies from outside the United States. Details about sex,

age, marital status and employment were missing from most reports. Other data was also

missing making aggregate analysis impossible. The highly variable data about medical

prognosis, diagnosis and method of suicide prevented any accurate statistical analysis.

The authors suggest that the results of this review point to a need for more accurate data collection and propose a comprehensive central database.

Table 2. Summary of Individual Study Methodology

Author	Study Design	Sample Size/Char	Intervention	Research Question/Results	Study Limitations	Clinical Application
Ballard, E. et al. (2008)	Retrospective Descriptive Comparison percentages	N= 335 General Hospital N= 1,664 Psychiatric Setting N= 32,439 General Population Sample: patient completing suicide (medical records)	Comparison: Demographics, Medical Status, Method Timing and Location of Suicide	Examine differences between methods and circumstances among completed suicides in different settings. Could not be determined if clinically relevant distinctions exist./recommendations for data collection.	Highly variable data self selected time frames for inclusion. General Hospital/Medical Setting= 1947-2002 Psychiatric Setting= 1980-2000 General Population= 2003. Demographics General Hospital= US and outside US. Psychiatric Setting= Not Specifically Identified. General Population= US Limited aggregation. Sample Bias intrinsic to limited and selective reporting in the literature (sensationalism).	Suggested recommendations for data collection, variable inclusion for a central database to be used to improve screening/assessment tools and reporting mechanism. Recommends a national data base.

Table 2. Continued

Becker, K. & Schmidtke (2010)	Non-Expérimental Non-randomized Descriptive Comparison Percentages	N= 177 Sample : nurses	Four question admission screening tool to assess emotional/ behavioral state-suicide risk.	Will screening for suicide risk on admission to a general hospital help identify patients in need of psychiatric services?/ 7% of screened patients received services.	Not randomized population/ admission nurses hand selected/tool not tested/ no data regarding total number of admitted during time frame for comparison to study population no reported non intervention control group.	Suggested that screening will increase identification of patients in need of further assessment/treat ment.
Drew, B. et al (2006)	Retrospective Record Review (July and August 2003) Correlational	N= 3 EDs 163 records Sample: general medical providers and behavior health providers	Intensity of Suicidal Ideation Scale Self tailored record review form.	1. Who comes to ED because of suicidal thoughts or self-harm behavior-personal and clinical characteristics? Results: 51% female 2.What is the relationship between level of suicidality and health service decisions following ED visit?/(p= .50) Spearman's rho was .05 -no relationship 3. What is the relationship between	Data was non-randomized, combined from three hospitals. There was some discrepancy between the reviewers (inter-rater). The data collection tool was modified for this study without psychometric testing	More females attempt suicide than males. More males complete suicide. No significant difference in who screened for suicide. Implications: Screening for suicide can be done by general non-psych health providers.

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Table 2 Continued

				assessment by provider and follow-up disposition Results: Patients seen by ED provider were more likely to be referred in psychiatric inpatient or transferred to another facility (p=.014) Chi square=8.54		
Giordno, R. & Stichler, J. (2009)	Pre test-post test design Non randomized convenience sample	n= 118 Sample: nurses	An education module to enhance nurses knowledge and skill in suicide prevention	RQ: Examine the decision-making skills for patient disposition and appropriate level of care or discharge. Stats: dependent t-test Results: (p. <. 05)	Limited to one hospital. Mandatory for all staff. Limited to ED nurses	Nurses in the ED can learn to assess, and make appropriate decision for patient disposition and appropriate level of care or discharge for patients at risk for suicide.
Mills et al. (2006)	Retrospective Record	75 VHA facilities	None	RQ: To gain information to	Study completed in VA health care	To decrease para suicide events

Table 2 Continued

	review	n=42 completed suicides n=94 aggregate		develop action plans, success factors, obstacles to improve safety in parasuicidal patients Good tracking system correlates with implementation rate Spearman's rho=.358 (p=.002). Strong leader support correlates with improved clinical outcomes. Rho=.333 (p=.005).	system	VA needs administrative support, improved tracking devices to enhance data collection and communication. Mandatory reporting.
Mills et al. (2008)	Review of methods and environmental factors	n= 185 attempted (n=143) and completed (n=42) suicide patient medical records	None	RQ: What methods and environmental risk factors were present in attempted (n=143) and completed (n=42) suicide patient medical records Statistics: Spearman Rho for root cause analysis Results: Environmental risks	Study completed in VA health care system	Eliminate doors when not required by code. Remove doors on wardrobe cabinet. Replace hangers and rods with shelf, eliminate razors, shoe laces, and belts. Ensure protocol in place to eliminate

Table 2 Continued						
				were identified and types of attempts For many patients there was NO root cause identified		access to drugs. Conduct environmental rounds to include a comprehensive checklist of hazards. Use active observation skills. A VHA check list was developed.

This in itself is valuable as it can be used to develop a screening tool specific to

characteristics identified in patients who have completed suicide.

 Suicide Risk Screening, A Pilot Study

      In a 2010 Pilot Study, *Suicide Risk, a Pilot Study*, Becker and Schmidtke

addressed the need for a screening tool in a community hospital in Wisconsin. The

authors were employees of the hospital. The short study presented no abstract, but a one-

paragraph commentary on suicide statistics and the Joint Commission's NPSG 15.01.01.

While not stated as a problem, their goal was to comply with the Commission's

NPSG15.01.01. No literature review was offered.

      The study described a prescreening proces to help nurses screen patients for

suicide risk at admission. Developed by a team of interdisciplinary nurses at the hospital,

the four-question tool was designed and used as part of the admission process to screen

patients for suicide risk. The tool was used by two admission nurses for sixty days on all

patients admitted. After one week the wording of one question was changed to refine the

process. After sixty days the authors tabulated the data and made the assumption that

those screened who were referred for mental health services would have gone

unrecognized otherwise.

      During the period of the study, 177 patients were screened and 17 referred for

assessment and treatment. Of those, 12 actually received services. No other data is

reported. The authors acknowledged the limitations of the study. Not all admissions were

screened, only those when the two nurses involved were on duty. There was no testing

for reliability or validity, nor was there any generalizability, given the limited time and

location of the study. There was no information about what the implications of the study were, whether or not the screening would be implemented permanently, or any recommendations made for further study.

Emergency Department Visits
for Suicidality in Three Hospitals

This 2006 retrospective chart review, *Emergency Department Visits for Suicidality in Three Hospitals*, Drew, Jones, Meldon and Varley, evaluated charts to extract specific data. From the abstract, 163 charts were examined from ED visits for suicidal ideation or behavior.

The introduction provided a brief overview of suicidality in the context of the ED and a literature review described ED visits for suicidality. The summary of the literature review pointed out the lack of information about ED visits for suicidal ideation because data on visits for suicidal ideation are not systematically collected. The authors proposed to discover what the relationship was between the patients' level of suicidality and their referral for mental health services, and also whether there was a relationship between the level of referral for services depending upon the patients' having been evaluated by a mental health professional or an ED staff member.

Subjects were all patients seen in a thirty-one day period in three hospitals. Data was taken from charts based on the patients score on the Self-Inflicted Injury Severity Form (SIIF) and the Intensity of Suicidal Ideation Scale (ISIS). The authors stated that both of these tools have demonstrated reliability in prior studies, however no details

about these tools were given, nor any details regarding how they were used clinically.

Two ED medical records coders and a third year psychiatric resident did coding.

The findings for the first question, the relationship between level of ideation and referral were that 72% of these subjects were admitted to a psychiatric inpatient unit and the remainder discharged. Of those discharged, 68% were referred to outpatient mental health services. Results for the second question, the relation between evaluation by ED staff or mental health providers was statistically insignificant. In their discussion the authors stated that another goal of the study was to evaluate the utility of the ISIS. It was decided that more information would be needed to make a determination about who would code the information, due to poor inter-rater reliability in this study. The authors acknowledged that the findings of this study were of limited value due to the use of only medical records and raised reliability and validity as issues with the results. The authors concluded that the study provides a descriptive foundation for research to address the question of which type of mental health specialist is best suited to assess ED patients and what it is like to be suicidal in the ED.

Improving Suicide Risk Assessment
 in the Emergency Department

This 2009 study done by Giordano and Stichler evaluated an educational module designed to enhance nurses' knowledge about suicide risk factors. No abstract is presented, but an introduction provides some basic information about NPSG 15.01.01 and suicide in general. A review of literature presents a small amount of data about some of the demographics of suicide.

The educational program is not described in any detail, but the authors state that it focused on the use of the SAD PERSONS scale for identifying suicide risk. No details were provided on the background or use of this tool. The review of the content by a staff psychiatrist and ED director were considered sufficient validation for the educational program, which is described as a "performance improvement project".   The educational module was given to 118 nurses who took a pre-test to determine their knowledge before the module and then a post-test survey to evaluate learning. Results were determined by comparing mean scores on the pre and post tests. The results showed that nurses' knowledge increased for the post-test (M=45.29) in contrast to the pre-test (M=39.73). The measure of success was determined by cost/benefit analysis, the potential financial risk to the hospital being the prime concern. The potential loss to the hospital for a patient who was not identified and who subsequently killed himself was described as "millions of dollars". In summary the authors reported that the cost benefit analysis was positive and that there was an administrative decision to implement the suicide prevention education in other departments.

Actions and Implementation Strategies

The 2006 study by Mills, Neily, Luan, Osborne and Howard summarizes aggregate reviews from VHA hospitals from October 2000 to March 2003. This study was designed to demonstrate how parasuicidal events are addressed and success factors and obstacles to implementation of action plans. The introduction describes the root cause analysis (RCA) method. The problem of underreported parasuicidal events in VHA is problematic, but the author gathered aggregate reviews of 775 parasuicidal

events in VA hospitals across the United States. Reporting was voluntary and 75 of the

163 hospitals reported. Action plans from the RCAs were evaluated for specific actions

addressing each root cause and which actions were implemented. Of the one-hundred and

seventy root causes identified, the top five were communication issues, followed by

policy regarding assessment and treatment, patient stresses, staff education, and the fifth

leading root cause was "no root cause found." Two research team members did coding

together. Outcome measures were evaluated and reported. The top three improved

outcomes reported by facilities were improved discharge planning 47.9%, fewer suicidal

patients lost to follow-up 35.4%, and reduced reports of suicides 32.4%. The discussion

addressed the reasons for these improvements. Correlation data demonstrated that a good

tracking system was significantly related to implementation and improved clinical

outcomes. Improved clinical outcomes were correlated with perceptions of strong

leadership strong front-line staff support and sufficient resources. The authors

acknowledge the limitations. First the findings cannot be considered causal, are based on

self-report and so may be biased. Facility characteristics were not controlled for which

may affect outcomes and a significant number of facilities made no report at all.

Inpatient Suicide and Suicide Attempts
in Veterans Affairs Hospitals

This Mills, DeRosier, Ballot Shepherd and Bagain study from 2008 analyzes

possible methods of eliminating suicide in VA hospitals. Forty-eight percent of these

suicides occur in the general hospital setting, most notably in the ED. While other studies

have focused on characteristics of patients at risk this study focuses on environmental

hazards which may be eliminated to increase safety and decrease the potential for suicide. The most common methods of committing suicide were hanging, cutting, drug overdose and strangulation. Belts shoelaces and bedding are the most common methods of hanging and for infection control and patient comfort, bedding is not taken away, leaving a significant risk. Mills et al.(2008), on the basis of this study developed an environmental risk checklist which is used at VA hospitals across the nation.

Summary

It is clear from the research in these studies that inpatient suicide presents a complex challenge for the health care team. Several authors identify a need for more complete data. Implementation of NPSG 15.01.01 is the framework for others. While low level study design and data bias limit the generalizability of these studies, they provide a beginning understanding of the problem and highlight the need for additional research.

Elements of Analysis

According to Whittemore and Knafl (2005), an integrative review method summarizes what is already known about a topic and incorporates diverse methodologies to capture the context, processes and subjective elements of a topic. Data analysis and synthesis of themes and patterns in this review have potential application to clinical practice. Creative and critical analysis of the data were important in accurate identification of patterns and themes (Whittemore and Knafl, 2005). As each study was

reviewed thoroughly to evaluate methods and clinical applicability, similarities and differences were noted between them. There were also some clearly identifiable themes and relationships running through some of the studies.

Identification of Themes

Four of these studies focused on the identification of patients at risk as a critical need. Ballard et al.(2008), Drew et al., Becker and Schmidke(2010), and Giordano and Stichler(2009) all look at possible ways to increase awareness of at risk patients. Mills et al.(2006), Becker and Schmidke(2010), Drew et al.(2006) & Giordano and Stichler(2009) address the need for appropriate action to increase positive outcomes. Ballard et al.(2008), Mills et al.(2006), Mills et al.(2008) address the need for safer environments in general medical settings. Empowering nurses to take action and intervene for suicidal patients and provide follow-up is identified by Ballard et al.(2008), Drew et al.(2006) & Giordano and Stichler(2009) as a means to improve outcomes for these patients. Finally, the use of mandatory reporting is suggested by Ballard et al.(2008), Drew et al.(2006) & Mills et al.(2006), as a wat to collect accurate data about suicides and develop strategies to prevent them.

Identifying Patients at Risk

Ballard et.al. (2008) attempted to generate hypotheses regarding medical inpatient suicide by examining published reports for demographic or phenomenological differences between suicides committed in medical settings compared with suicides in

psychiatric settings or the general population.   Risk factors identified included central

nervous system dysfunction, general medical disorders and specific symptoms such as

pain and physical limitations. Numerous other risk factors were identified which Ballard

has included as variables for a central database on in-hospital suicide (Table 3).

Table 3 Variables for Inclusion in a Central Database

Location and patient status	■ Type of health care facility (e.g., general medical hospital, VA hospital, psychiatric hospital) ■ On hospital grounds vs. on leave (e.g., home vs. public location) ■ Location on hospital grounds (e.g., patient room, bathroom, stairwell, etc.) ■ Authorized leave vs. AWOL
Method	■ Hanging, jumping, overdose, cutting, poisoning, etc. ■ If poisoning or overdose, which substances used ■ Suicide note/communication of intent
Timing	■ Duration of hospital stay ■ Time of day, time of year, holidays ■ Relation of suicide to time of discharge
Demographic characteristics	■ Age ■ Gender ■ Race ■ Socioeconomic status ■ Marital status ■ Religion ■ Profession/occupation ■ Living situation ■ Military status
Diagnosis	■ Primary diagnosis ■ Reason for hospital admission ■ Secondary diagnosis, if applicable ■ Prognosis ■ Presence of cognitive impairment
Symptoms at time of suicide	■ Pain ■ Difficulty breathing ■ Fatigue ■ Agitation
Psychiatric concerns	■ Documentation of a previous psychiatric consultation ■ Documentation of a suicidal assessment ■ Previous suicide attempts or other self-injurious behavior ■ Psychiatric diagnosis ■ Psychiatric symptoms (e.g., anxiety, depression, delirium) ■ Substance abuse, dependence, or withdrawal ■ Current mental health care and/or use of psychotropic medications
Systems concerns	■ Environmental factors (e.g., unsecured window, atrium, breakaway shower rods) ■ Inadequate assessment or monitoring of suicidality or depression ■ Concerns identified in sentinel event review

* VA, Department of Veterans Affairs; AWOL, absent without leave.

 Ballard et. al.,2008

Ballard proposes this system as a way to obtain consistent, reliable data to draw conclusions about this population and to allow for more comprehensive research.

Drew et. al. also focused on identifying the personal, clinical and health service characteristics of suicidal persons, but in an ED setting. Drawing on retrospective data from chart review, Drew et. al. was more successful than Ballard at extracting data about these characteristics, because Ballard et. al. was limited to twelve articles detailing three hundred and thirty-five suicides in the medical setting obtained from a literature search. Drew et. al. was able to obtain data on sex, age, race, degree of suicidality and method of self harm, however this study was also limited by confinement to a thirty day period in three hospitals and the fact that it was a focused population of ED patients who had committed self- injury, but the intent of suicidality was not always established.

Becker and Schmidtke (2010) and Giordano and Stichler (2009) both focused on nurses' ability to screen patients at admission based on knowledge of risk factors. These studies were done at the hospital, or "front line" level, using real nurses in actual hospital settings. Both studies concluded that enhanced awareness among nurses about risk factors would increase identification and referral of patients at risk.

Identifying patients at risk is a challenging task, a sentiment reflected by the authors of these studies. As a member of the interdisciplinary team, in both the ED and medical-surgical unit settings, the CNL is in position to keep abreast of current guidelines regarding risk identification, educate staff in the use of these guidelines and assist them in applying them to identify patients at risk of suicide in their units.

Taking Appropriate Action

Four of these studies address the importance of intervention for high risk patients. In the VHA, Mills et al. (2006) found that actions plans formulated after RCA's were performed had an effect on risk reduction in hospitals, depending on certain factors. Improved clinical outcomes were associated with good tracking systems, strong front line staff support, sufficient resources and enough staff to implement action plans.

Becker and Schmidke (2010), Drew, et al. (2006) and Giordano and Stichler (2009) all addressed knowledge of available resources as an important factor in nurses ability to take appropriate action. Transfer to a higher acuity level of care, referral to hospital based mental health professionals or transfer to another facility for further psychiatric evaluation are all potential patient interventions. Awareness of available community resources for effective discharge planning also contributes to appropriate care. Drew et al. (2006) reported using all three of these patient options, while Becker and Schmidke (2010) were simply referring patients to the assessment and referral department of their hospital. Giordano and Stichler (2009) suggest the use of community resources.

After identifying a patient as a suicide risk, taking appropriate action to care for that patient is the next concern. The CNL, in teaching staff which resources to use in helping each patient and functioning as liaison for directing referrals is a critical position in each unit.

Creating a Safe Environment

Mills et al. (2008) reported that weaknesses in environmental safety were the root cause of almost seventy-three percent of reported suicides. Ballard et al. (2008) and Mills et al. (2008), collected data on the methods used in completed suicides to develop plans for creating a safer environment. Ballard et al. (2008) found that while patients in psychiatric units most commonly commit suicide by hanging, on medical floors jumping from heights is the most common method. Both Ballard et al. (2008) and Mills et al. (2006) recommend restricting access to means as an important prevention strategy. Restricting access to heights, preventing rooftop access, and locking windows will achieve this goal. Removing belts, shoelaces and other materials that can be used for hanging, as well as removing interior doors and any other structures that can be used as anchor points will eliminate potential environmental hazards. Portable cleaning carts must be attended at all times. A mental health environment-of-care checklist has been implemented by the VA and is available to the public for use (Mills et al., 2008).

Environmental checklists are available in most hospitals but frequently are not updated regularly. Again drawing on the ability to seek the latest knowledge about environmental hazards and how to correct them the CNL in a supervisory role, has the ability to survey each unit of the hospital and along with other members of the team, develop and implement plans to increase patient safety.

Empowering Nurses to Assess, Make Decisions and Follow-up

An ED visit is a critical juncture for suicidal patients and nurses have a significant role in assessing and referring persons at risk. Screening patients at hospital admission is a role that should be done routinely by ED nurses (Drew et al., 2006). Currently many nurses express concern about their lack of competency in assessing these patients and as "gatekeepers" of the hospital, empowering them with screening tools and knowledge of how to broach the subject of suicide with patients will make the nursing staff more effective advocates for patients at risk (Ballard et al., 2008; Giordano and Stichler, 2009). In order for nurses to be empowered to advocate for patients management must provide sufficient staff and resources. Then changes to clinical practice can be made and subsequently evaluated. Once sufficiently trialed, the clinical changes can effect policy to solidify the process (Mills et al., 2006).

In this very important aspect of patient care, the CNL as a member of the interdisciplinary team has a large role in continually educating other staff about current guidelines so they are in a position to advocate for patients. By tracking what procedures work, the CNL will be in a position to make recommendations for policy changes.

Mandatory Reporting

Underreporting of suicide has been a significant problem and it seems reasonable to conclude that more data about people who commit suicide would lead to prevention. A broader picture of suicidal persons is needed before effective interventions can be developed. The current medical literature contains limited information about factors

associated with inpatient suicides and reveals a need for comprehensive and systematic

data acquisition (Ballard et al. 2008; Drew et al., 2006; Mills et al., 2006). Mandatory

reporting to a centralized database as suggested by Ballard et al. (Table 3), would identify

the scope of the problem as well as facilitate additional necessary research.

The topic of underreporting and unclear reporting is a common theme in research

into suicide. If data is collected and managed at the hospital level about all inpatient

suicide related events, the concept of a national database which will provide insight and

knowledge about the scope of the problem will be within reach.

<div align="center">Summary</div>

These themes provide insight into the challenge of preventing inpatient suicide.

The purpose of this review, to analyze the evidence regarding what is being done to meet

the NPSG 15.01.01 has been thwarted by the lack of evidence in the literature. There is

still no data on who is being screened in hospitals or under what circumstances. There

has been, to date, no follow-up done on potentially suicidal patients who are dismissed

from the hospital, although the definition of inpatient suicide extends to those who

commit suicide within seventy-two hours after being dismissed from the hospital setting.

It isn't possible to discover whether those who commit inpatient suicide are a subset of

those who are at risk in the general population, because, as Ballard et al. found in their

2008 study, the data has never been collected. The level of implementation of the Joint

Commissions' NPSG 15.01.01 is not addressed in the literature except by Becker and

Schmidke (2010) and Giordano and Stichler (2009) and then not directly as relates

implementation, but as studies of potential methods of achieving compliance in their hospitals, with no follow-up on whether any implementation of these programs was successful. If there is any compliance with NPSG 15.01.01 in hospitals around the United States, it has not been reported in the literature.

Patients will continue to die if healthcare organizations don't take appropriate action to assess patients at risk for suicide in general hospitals (Becker and Schmidtke, 2010, p.21).

CHAPTER V

DISCUSSION

It is clear from the lack of empirical data available that more research regarding inpatient suicide is a critical need in the United States, and the complete lack of substantive research mirrors attitudes and myths about suicidality in our culture in general. Clinical judgments and professional behaviors are to a large extent shaped by attitudes (Knesper, 2010). Without a change in these attitudes, no progress can be made in reducing the rate of suicides in our hospitals. Staff can be provided with the tools for screening, protocols for care of suicidal patients, and the empowerment to follow through with patients, but if negative attitudes persist, these resources will be underutilized, if used at all. The first and most important knowledge given to all management and staff needs to be information to help them overcome the fear of suicidal patients, dispel the myths surrounding suicidality and help in understanding that suicidality is a symptom of a larger, treatable disease process. Individuals with mental disorders experience discrimination, and discrimination has far-reaching consequences. ED staff is not immune to this discrimination, and many of them dissociate mental illness from "real medicine". Attitudes such as "suicide is a choice" and "suicide attempts are willful, deliberate, selfish and attention seeking" are unfortunate features of ED care that can lead to lack of screening and serious outcomes such as suicides (Knesper, 2010). In the report, *Continuity of Care for Suicide Prevention and Research:Suicide Attempts and Suicide Deaths,* Knesper suggests that all ED patients have comprehensive evaluation for

suicide risk and ED's should be staffed with mental health professionals. If no mental health professional is available Knesper suggests that the patient be held until one is available, regardless of the patient's chief complaint on ED admission (Knesper, 2010). Many of the articles read for this review agree with Knesper's argument about discrimination but have a less drastic approach to resolving the problem. Changing the culture may be all that is necessary to improve screening and outcomes.

Inpatient suicide doesn't happen routinely but it does happen. The challenge is that most healthcare providers don't want to talk about suicides in acute care. It's not supposed to happen, and when it does the provider wants the incident to go away with little attention. That reluctance to discuss the risk of suicide stands in the way of prevention efforts, says Edwin D Boudreaux, PhD, professor of Emergency Medicine at the University of Massachusetts Medical School (Healthcare Risk Management, 2011).

Need for Common Nomenclature

One of the barriers experienced during the course of reading literature for this review was the lack of consistency between authors in terminology. The same has been found to be true in hospitals, terminology in the same health system inconsistent and vague between shifts and units (Janofsky, 2009). This lack of coherent terminology runs through the entire literature of suicidology, among Public Health practitioners, clinicians, medical examiners, prevention oriented suicidologists, and researchers (Silverman, Berman, Sanddal, O'Carroll & Joiner, 2007). Standardized nomenclature has been proposed (O'Carroll, Berman, Maris, Moscicki, Tanney & Silverman, 1996), and while it

has been adopted by some researchers and by the American Psychological Association, it has not been widely used in research or in the clinical community (Silverman et al., 2007). While an exhaustive analysis of this perplexing subject is beyond the scope of this review, it must be noted that in numerous studies read for this review, conflicting terminology and lack of definitions muddied the water and that this problem is a large barrier for researchers.

In articles read for this review, most authors use the terms screening and assessment interchangeably. Parasuicide is a term used by some authors but is never defined, while the term-attempted suicide is used interchangeably with parasuicide in some articles. The term self-harm is used, but without defining whether the harm was suicidal or not. Use of the words attempted suicide seem to have conflicting meaning between authors, some using a broad definition of any act interpreted as potentially lethal, such as cutting or standing on a ledge while others reserve it for an act which has resulted in injury.

Again, it is beyond the scope of the review to provide exhaustive definitions, but to effectively discuss the subject at least a few working definitions must be put in place.

The term screening is intended to mean a short simple evaluation process done by any staff member to assess potential suicide risk. The term assessment is intended to mean an in depth evaluation performed by a mental health professional. Parasuicide will be accepted to mean any behavior which has potentially fatal outcome, but was not successful. Completed suicide is an act whereby a death occurs. Attempted suicide is an act in which the intent was death, but which was unsuccessful.

While it may seem tedious, and these few terms do not necessarily reflect their common usage, to enable clear discussion understanding is essential. Consistency of terms would considerably enhance communication between nursing staff both in ED and medical-surgical units.

Recommendations for Practice

In the literature reviewed, a plethora of problems were found in all areas of identification and proper care of the suicidal patient. Suggestions for change were made but with no real plan to act on them. Formulating corrective actions is more difficult than finding problems, and follow-up is rare. A sign of incomplete adoption of recommendations is that despite having recently completed an RCA for a specific event, hospitals commonly experience repeat events (Wu, 2008). Ballard, et al. (2008) state that some kind of post-event review process is needed to identify potential areas of improvement. However, the authors suggest that improving quality may involve use of other methods, ones locating "systems failures" which will lead to important improvements in hospital practices. In the case of inpatient suicide, a post-event review is too late to help the patient.

A tool which has been studied in relation to inpatient suicide risk is Failure Modes and Effects Analysis (FMEA). FMEA was developed in the 1940's by the military and used for Aerospace/rocket development to help in eliminating errors in small samples. It was used extensively in the Gemini and Apollo projects to put a man on the moon. It was adapted for use in healthcare in the 1990's. The Food and Drug Administration uses

FMEA as a design verification method for drugs and medical devices. FMEA is a systematic, proactive method for evaluating a process to identify where and how it might fail and to assess the relative impact of different failures. Teams use FMEA to evaluate processes proactively rather than reacting to adverse events after failures have occurred (Institute for Healthcare Improvement, 2004). This contrasts with the reactive, post-event process of the RCA. Another drawback of the RCA is that the events reported to the Joint Commission are not released for evaluation by other investigators due to confidentiality and privilege concerns (Janofsky, 2009). The FMEA process does not have this disadvantage. Systems may be studied, adapted and implemented across units within the hospital and by any other interested facility (see Table 4).

Table 4: The FMEA Process

- Select a process to evaluate – FMEA works best on processes that do not have too many subprocesses; for example, instead of trying to assess a whole medication management process, start with medication ordering, dispensing and administration processes

- Recruit a multidisciplinary team- include everyone involved in the process

- Have the team meet to discuss all the steps in the process- as a group, number each step of the process and flowchart it

- Have the team list failure modes and causes-list all possible "failure modes", then for each mode identify all possible causes

Table 4: The FMEA Process - Continued

- For each failure mode, have the team assign a numeric value (known as the Risk

  Priority Number) for the likelihood of occurrence, likelihood of detection and severity

  of failure, using a scale from 1 to 10

- Evaluate the results- to calculate the Risk Priority Number(RPN) for each failure

  mode, multiply the three scores obtained(the scores for likelihood of occurrence,

  detection and severity). This will give a score between 1 and 1000.

- Use the relative Risk Priority Numbers(RPNs) to plan improvement measures

The specific details in the use of FMEA are available through the Institute of Healthcare Improvement, IHI.org. The important point is that it is a preventive, systems approach to care. Root cause analysis and FMEA can be used together in a feedback loop to form a continuous quality improvement cycle.

In the "White Paper on the Education and Role of the Clinical Nurse Leader", the American Association of Colleges of Nursing summarizes the some of the broad areas which the CNL role encompasses, listed in Table 5.

Table 5: Role of the CNL

Clinician: designer/coordinator/evaluator of care to individuals and families

Outcomes Manager: synthesizing data, information and knowledge to evaluate and achieve optimal client outcomes

Client Advocate: Adept at ensuring that clients, families are well informed and included in care planning

Educator: using teaching principles and strategies to educate clients and other healthcare professionals

Information Manager: able to use information systems and technology to improve outcomes

Systems Analyst/Risk anticipator: able to lead systems reviews to improve quality of client care delivery and at the individual level, to critically evaluate and anticipate risks to client safety

Team Manager: to properly delegate nursing team resources and serve as leader in the interdisciplinary health care team

Member of a profession: accountable for the ongoing acquisition of knowledge and skills to effect change in health care practice (American Association of Colleges of Nursing, p.12-13.).

Each of these skills is essential to the FMEA team leader. More than anyone else on the

staff the CNL is in the position to identify processes and lead the way for improvements

in the system.

In a study done at John's Hopkins University, the FMEA process was used to

improve psychiatric observation processes. While the study was performed in a

psychiatric inpatient setting, it is adaptable to any general medical setting. The nurses on

this unit follow a professional practice model, in which nurses agree to provide patient

care in exchange for unit self-management. Nurses take the initiative to improve patient

care. The unit has four levels of observation and level is decided upon by the physician

in consultation with the patient's nurse. Nurses assess the level at least twice a shift.

Nurses may increase the level of observation if needed, but only the physician may

decrease it. Nurses are also empowered to call for an extra agency nurse if required, and

to assign security to any patient at risk for seriously injuring staff or other patients. The

FMEA facilitator spent time on the unit taking note of practices, and then had a small

group of clinicians identify the process steps, which were then grouped into larger

process groups. Processes of ordering, observation, observer activities, assessment, and

handoffs were identified. All levels of the treatment team participated. The team

identified potential failure modes, assigned RPNs and identified the highest RPNs to be

considered first for improvement. Solutions were identified and piloted, documented and

improved upon, all done under the facilitator's leadership (Janofsky, 2009).   In the role

of facilitator, CNLs will use their skills to direct each step of the process to completion.

It is relatively simple to adapt this concept to the care of suicidal patients tertiary

care units of the hospital. Processes for staff interaction with patients will be identified by

the CNL and nurses will be empowered to improve these processes. Observation

practices, security, communication, ensuring safety and other patient needs will be

documented and evaluated for effectiveness. In the ED the CNL will be able to use

FMEA teams to identify valid screening methods, plans for further evaluation of patients

determined to be at risk, precautions needed in the ED, and methods of transfer of

suicidal patients from one unit of the hospital to another safely.

Strengths and Limitations of this Methodology

The strengths of the methods used in this review could be considered the same as the limitations. The limitations set out by the inclusion and exclusion criteria at the beginning of the review narrowed the scope to inpatient suicide in the United States and research done since 2006. This can be considered both a strength and a weakness of the review.

By focusing on research done only in the U.S., the lack of substantive research in the U.S. was highlighted. In the process of reviewing abstracts for this review it was noted that there is research being done on this topic in other countries, including systematic reviews and clinical trials.

Doing research in this area is not attractive to researchers because of the ethical and investigational issues that arise (Boudreaux, Healthcare Risk Management,2011). Suicidal individuals are routinely excluded from clinical trials in the United States. Because they are excluded, intervention studies targeting suicidal behaviors are excluding those who are at highest risk of death (Linehan, Comtois,Ward-Ciesielski, 2011).

Future Research

Research on both the implementation of NPSG 15.01.01 and data on risk reduction effectiveness currently does not exist. Studies are needed to explore the current level of implementation. Surveys of hospital practices, comparing methods in use and gathering evidence about what is effective can be used to broaden and standardize screening practices. Over time as consensus is reached about which screening methods

are most effective, a nation-wide standard method for screening patients can be established.

Implementation of a detailed nationalized database as suggested by Ballard, et al. (2008) would provide important, detailed evidence about persons who commit suicide in the medical setting and could be used to develop effective screening criteria.

Screening is only the first step in identification of patients at risk. Ongoing assessment during hospitalization is needed to ensure appropriate patient care. Follow-up research should include assessment recommendations and staffing levels appropriate for care of patients at risk of suicide.

Further research in the emergency department would include data collection about factors associated with attempted suicide; social, psychological, family stress, financial stress, chronic medical illness and substance use data collected in a local emergency department could be used to inform recommendations for assessment of out-patient community resources.

A retrospective qualitative study could be designed to evaluate discharge follow-up treatment acceptance and compliance. Data regarding appointments kept or missed could be used to improve discharge planning and teaching.

In 2009, Edwin Boudreaux PhD., Carlos Camarago M.D., & Irwin Miller PhD received a twelve million dollar grant from The Institutes of Mental Health for a multi-site study at the University of Massachusetts Medical School in Worcester aimed at improving suicide prevention in hospital emergency departments. The Emergency Department Safety Assessment and Follow-up Evaluation (EDSAFE) will be conducted

in three phases. The first phase will assess treatment as usual (TAU) for patients. TAU

evaluates suicide risk only among patients in the ED who have psychiatric risk factors.

Often these patients are put under observation while at the hospital and are evaluated by a

mental health provider. They may also be referred to a mental health provider outside the

hospital, but few receive adequate follow-up care after discharge.

In phase two a universal screening process will be tested in which all patients,

regardless of whether they exhibit risk factors for suicide, will be screened for suicidal

ideation. The researchers will compare the universal screening with TAU to determine

how well each detects suicidal patients.

In phase three a more intensive intervention that includes evaluation by a mental

health provider, referral to outpatient care and other components will be implemented.

Patients will then receive follow-up phone counseling. The intensive intervention will be

compared to TAU and universal screening.

The study will be conducted at eight sites nationwide over a five year period

(www.umassmed.edu/news/research/2011/suicide-prevention.aspx).

<u>Summary</u>

As stated earlier more research is a critical need. But researching the same

problem over and over without effecting any change has little value. Studies and articles

in this review point to the need for a new direction, one that is forward looking rather

than retrospective. The CNL empowered with the ability to analyze systems, design and

coordinate care and synthesize feedback using a method like FMEA in conjunction with

the RCA process, can provide new ways of looking at and solving problems. Mandatory

reporting will provide a larger amount of data from which to draw upon for further

research into in-patient suicide. A common nomenclature will allow greater

communication between members of the interdisciplinary team. Then perhaps, new

research will show improvement in the prevention of suicide in general hospitals and

suggest even more possibilities for refinement of systems.

> When you first start off trying to solve a problem, the first solutions you
> come up wi th are very com plex, and m ost people stop the re. But if you
> keep going, and live with the problem   and peel more layers of the onion
> off, you can often times arrive at some very elegant and simple solutions.
> Steve Jobs (engadget.com, 2006)

While the systems in modern hospitals tend to be overwhelmingly complex at

times, as the systems are broken down into smaller parts, the complexity peeled away, we

may find simple solutions close at hand.   The CNL degree was designed to prepare

nurses to use a systems perspective to improve outcomes for a cohort of patients (Seed,

2009). When that cohort includes a patient at risk for suicide, use of that systems

approach can not only improve quality of care, it will likely save many lives.

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APPENDIX A

JOINT COMMISSION SENTINEL EVENT DATA 2011

Most Frequent Sentinel Event Categories Reviewed by The Joint Commission by Year

| 2009	2010	January 1, 2011 thru Third Quarter 2011
Wrong-patient, wrong-site, wrong-procedure	Unintended retention of a Foreign Body	Unintended Retention of a Foreign Body
Delay in Treatment	Delay In Treatment	Wrong-patient, wrong-site, wrong-procedure
Unintended Retention of a Foreign Body	Wrong –patient, wrong-site, wrong-procedure	Delay In Treatment
Op/Post-Op Complication	Op/Post-op Complication	Op/Post-op Complication
Suicide	Suicide	Suicide
Fall	Fall	Fall
Other Unanticipated Event	Medication Error	Other Unanticipated Event
Medication Error	Other Unanticipated Event	Criminal Event
Criminal Event	Perinatal Death/Injury	Med Equipment-Related
Perinatal Death/Injury	Criminal Event	Medication Error

The reporting of most sentinel events to The Joint Commission is voluntary and represents only a small proportion of actual events. Therefore, these data are not an epidemiologic data set and no conclusions should be drawn about the actual relative frequency of events or trends in events over time.

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Suicide Events Reviewed by The Joint Commission

(Of any individual receiving care, treatment or services in a staffed around-the-clock care setting or within 72 hours of discharge)
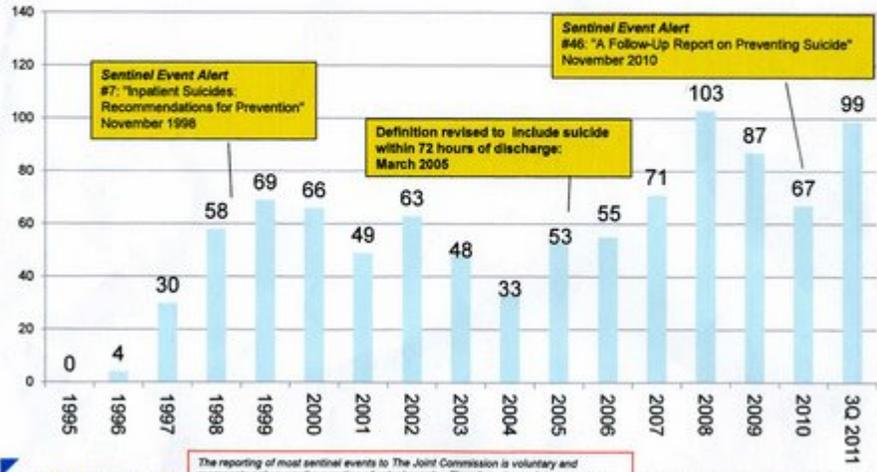
The reporting of most sentinel events to The Joint Commission is voluntary and represents only a small proportion of actual events. Therefore, these data are not an epidemiologic data set and no conclusions should be drawn about the actual relative frequency of events or trends in events over time.

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