Best Practices for Nurse Staffing in Critical Access Hospitals

by

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Acknowledgements

This project is one that has better prepared me to manage the unique challenges related to nurse staffing in Critical Access Hospitals. As a student, health care provider, and Critical Access Hospital administrator, I understand the importance of staffing levels in hospitals. This project has provided me with a deeper understanding and appreciation of the important variables that need to be considered when making staffing decisions for health care organizations.

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The information learned from this project has already improved the process of nurse staffing at Lake View Hospital, and our patients and staff have experienced the benefits. I plan to pursue further education and understanding on this complex issue of nurse staffing in Critical Access Hospitals.

Abstract

Nurse staffing is a major issue affecting all hospitals, but this complex issue presents unique challenges for Critical Access Hospitals (CAHs). Effective nurse staffing in CAHs requires collaboration and effective communication between hospital management, nursing staff, and other important stakeholders to help support the delivery of high-quality and safe patient care. There is currently a public debate between hospitals and nursing unions related to nurse staffing volumes across the country, and mandated nurse-to-patient ratios have been introduced by nursing unions as a solution to this complex problem. However, mandated nurse-to-patient ratios could jeopardize the future of CAHs and may not be the most effective approach to address this complicated issue. This project identifies best practices for nurse staffing in a CAH, and provides research and support for the utilization of comprehensive nurse staffing plans. Data collection and decision-making documents are also introduced to assist with nurse staffing in these hospitals. The results of this project offer best practices solutions for nurse staffing in CAHs as an effective alternative to mandated nurse-to-patient ratios.

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Best Practices for Nurse Staffing in Critical Access Hospitals

There are many challenges facing Critical Access Hospitals (CAHs) in this era of health care reform. Nurse staffing is one of the major issues impacting all hospitals, and this issue must be effectively managed to ensure the long-term viability of a CAH organization. Fitzpatrick, Anen, and Soto (2013) suggest that "despite nationwide discussions about RN [Registered Nurse] workload and optimal staffing, most hospitals struggle with the day-to-day operations to maximize patient outcomes and deliver high-quality, low-cost care through effective use of nursing resources" (p. 221). Nurse staffing is a complex issue that will require collaboration and effective communication between all stakeholders to achieve the ultimate goal of high-quality and safe patient care delivery in CAHs. This high-quality and safe patient care must also be delivered in a fiscally responsible manner to ensure that the hospital can maintain a positive operating margin into the future.

There is currently a national debate between many nursing unions and hospitals related to registered nurse staffing volumes, and Minnesota is representative. According to the Minnesota Hospital Association (MHA), hospital administration and nurses have the same goal of delivering safe patient care. The MHA also reports that the Minnesota Nurses Association (MNA), an affiliate of National Nurses United (NNU), supported legislation in 2012 that proposed government mandated nurse-to-patient quotas in every Minnesota hospital. The MNA and NNU continue to advocate for legislation and ballot initiatives in support of government mandated staffing quotas throughout the U.S. (MHA, 2013). However, mandated nurse-to-patient ratios could jeopardize the future of many CAHs, and may not be the most effective approach to address this complex issue involving multiple stakeholder interests. These

stakeholders include hospital administrators, nursing managers, front-line nurses, nursing unions, government agencies, ancillary hospital staff, patients, and the healthcare workforce.

The MHA (2015) asserts that despite multiple academic studies researchers have not been able to identify definitive staffing levels that would result in higher quality outcomes for patients. Additionally, research has found that mandated nurse-to-patient ratios may result in a financial strain for small, rural CAHs, and could threaten the viability of these organizations. Mandated nurse-to-patient ratios may not be appropriate for CAHs, and best practices for nurse staffing must be developed for CAHs to address this complex issue. An objective and collaborative approach for ensuring appropriate nurse staffing in these hospitals is needed to ensure safe patient care delivery, and this should be the common goal for all of the stakeholders mentioned above. This project draws from the environment and operations of a particular CAH in Two Harbors, Minnesota and its work toward developing a comprehensive registered nurse (RN) staffing plan. The project includes a literature review of this topic, a clear problem statement, discussion, and a model with recommendations for implementation.

Lake View Memorial Hospital, Inc.

Lake View Memorial Hospital is a 25-bed CAH hospital located in Two Harbors, MN. The hospital admits patients into a variety of acuity levels that include acute care, observation, swing bed, transitional, and respite care. The RNs working in Lake View's inpatient hospital unit also cover the hospital's emergency department and perform triage in the urgent care department, which makes staffing a continuous challenge. However, the inpatient and emergency departments are adjacent to each other, and that makes the sharing of staff a feasible and cost-effective option. Lake View staffs each shift in the hospital/emergency department (ED) with two RNs, one Health Unit Coordinator (HUC), one Certified Nursing Assistant

(CNA), and one Medical Assistant (MA). A registered nurse is also on call 24 hours a day and available to assist with increased patient demand, one-on-one patient needs, and ambulance transfers.

Nursing Staff in a CAH

High-quality nursing staff is vital to any hospital, and plays an important role in all CAHs. According to the American Nursing Association (ANA) website, nursing is the "protection, promotion and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations" (ANA, 2015, para. 1). There are three types of nurses that are included within the scope of this project: Registered Nurse (RN), Licensed Practical Nurse (LPN), and Certified Nursing Assistant (CNA). Medical Assistants (MA) are also included and their role in the emergency department is briefly discussed. According to the American Association of Medical Assistants, MAs are cross-trained to perform both administrative and clinical duties and work alongside the physician. However, the project focuses only on registered nurse staffing in the CAH because these professionals are essential to the core services delivered by the CAH.

RNs perform physical exams and health histories, administer medications, perform wound care, deliver other personalized interventions, interpret patient information and make critical decisions about required care, coordinate care in collaboration with other healthcare providers, direct and supervise care of personnel such as LPNs and CNAs, and conduct research to support and improve patient practice and outcomes (ANA, 2015). Nationally, RNs can receive their education through three different post-secondary options: three-year diploma

programs, two-year associate degree programs, and four-year baccalaureate degree programs (Stanton, 2004).

LPNs assist the RN by providing basic and routine care consistent with their education and under the direction of the RN or physician. LPNs receive 12-18 months of training though a program that emphasizes technical nursing tasks. CNAs, also called orderlies, help provide basic care for hospital patients in acute care or swing beds, as well as residents of long-term care facilities (Bureau of Labor Statistics, 2015). Assignments of RNs, LPNs, and CNAs in hospitals are often scheduled at minimum core levels, and increased after considering patient census and acuity levels. The concept of mandated nurse-to-patient ratios generally only applies to RN staff, and if utilized, could eliminate much-needed flexibility with staffing between RNs, LPNs, and CNAs.

Emergency Department

Urgent care at Lake View is staffed with one MA when that department is open, which is only on evenings and weekends. Lake View employs six family practice physicians who provide primary care in the clinic, occasional coverage in the ED, and cover inpatients in the hospital. Lake View also has one ER physician on site 24/7 to cover the ED, and another physician on call to cover the hospital's inpatients during the evenings and weekends. Some of Lake View's RNs are also cross-trained for surgery, procedures, and outpatient services, but that department is staffed separately from the hospital and emergency department.

Fluctuating Volumes

Significant fluctuations of inpatient volume can range anywhere from 0 to 15 patients on a given day, and Lake View's ER/urgent care volumes can range from 0 to 23 patients in 24 hours. These fluctuations create a continuous challenge for staffing. The hospital maintains a

core staffing plan, and has additional staff available to flex up to meet unanticipated patient demand. A core staffing plan is defined as the projected number of full-time equivalent non-managerial care staff assigned to an inpatient care unit over a 24 hour period (Minnesota Department of Health [MDH], 2015). Lake View also has a very small operating margin, and the hospital cannot afford to staff at the highest full-time equivalent (FTE) 24 hours a day in anticipation of inpatient or ED department volume surges. In consideration of these factors, staffing at a solid core level and flexing up when needed is the preferred and fiscally responsible approach for Lake View. The hospital's nursing staff has advocated for a third RN on every shift to cover unanticipated volume surges, but this is not financially feasible. Historically, Lake View has had periods of time with no inpatients and very few ED patients, but when this occurs the organization does not consistently send core staff home under the administrative time off policy. The goal for both hospital administration and nursing is to find a level of staffing that meets current patient demand, and can effectively and efficiently adapt to meet unexpected increased or decreased demand in either department. This proactive staffing approach is one variable required to promote high-quality patient care delivery while being responsive to the financial constraints facing the organization.

Purpose

The purpose of this project is to identify best practices for registered nurse staffing in CAHs that will address the interests of parties on both sides of this complex issue. This project identifies best practices related to nurse staffing and provides a model to assist management in adequately staffing CAHs to deliver safe and high-quality patient care. This project also provides a clear distinction between a CAH and a general acute care hospital (PPS hospital) as relevant to staffing issues. The project also identifies financial challenges affecting CAHs as

well as other non-financial challenges that CAHs currently face related to staffing. The various roles of registered nursing in a hospital are explored, and patient acuity models and nurse staffing plans are also discussed as key factors. A review of mandated nurse-to-patient ratios is conducted, and a summary of information learned from the implementation of mandated ratios in California is also analyzed. Relationships between nurse staffing and patient outcomes are also evaluated in relation to overall nurse staffing in hospitals. This project includes a discussion of the interests of nurse staffing from the perspective of various stakeholder groups including hospital administrators, staff nurses, nursing unions, government agencies, and patients.

Methodology

Drawing from the findings of an extensive literature review, professional practice experience, and academic course work, this project introduces a spreadsheet to assist in determining the required core full-time equivalent (FTE) staffing levels for registered nurses required in a CAH, and introduces objective tools for monitoring daily census fluctuations and related nurse staffing requirements. These documents are needed to guide the difficult decision-making behind nurse staffing in these challenging environments. The use of these tools, in addition to the application of best practices developed for nurse staffing, could minimize conflict between hospital administration and the hospital's nursing staff. Best practices are identified to assist CAHs with registered nurse staffing to support high-quality care delivery. Hospital administrators, nursing managers, staff nurses, ancillary hospital staff, physicians, and most importantly patients, could all benefit from the outcomes of this applied project.

Literature Review

A comprehensive review of literature was conducted with the goal of clearly defining a CAH and how staffing needs differ in these organizations compared to acute care hospitals. The

financial, staffing, and other challenges affecting CAHs are also introduced to help frame the issue. The controversial issue of mandated nurse-to-patient ratios in hospitals is analyzed, as well as the relationship between nurse staffing levels and patient outcomes. The level of nurse staffing in hospitals is discussed from the viewpoint of various stakeholders impacted by decisions on this complex issue. This literature review also identifies the conflicting research on the topics of mandated ratios and correlation of nurse staffing levels and patient outcomes.

Critical Access Hospitals

Beginning in 1998, small, rural hospitals in Minnesota that met both federal and state criteria were able to convert their current hospital licensure status to CAH status (MDH, 2015). By 2006, all eligible hospitals in Minnesota had become CAHs, and Minnesota now has 79 hospitals designated as CAHs. A CAH is a hospital certified under a specific set of Medicare Conditions of Participation (CoP) that differ from the CoPs of an acute care hospital (Health Resources and Services Administration, 2015). CAHs receive cost-based reimbursement from Medicare that can result in a financial advantage for smaller rural hospitals that often struggle financially. The U.S. Department of Health and Human Services asserts that the financial advantage provided to CAHs that were losing money before CAH designation has reduced hospital closures. According to the Centers for Medicare & Medicaid Services (CMS), hospitals designated as CAHs must meet the following criteria in order to participate in the program:

1. Be located in a state that has established a State Medicare Rural Hospital Flexibility (Flex) Program;
2. Be designated by the state as a CAH;
3. Be located in a rural area more than 35 miles from the nearest hospital or CAH, or more than 15 miles in areas of mountainous terrain or only secondary roads;

4. Maintain no more than 25 inpatient beds that can be used for either inpatient or swing bed services;
5. Maintain an annual average of stay of 96 hours or less per patient acute inpatient stay;
6. Demonstrate compliance with the CAH CoPs; and
7. Furnish 24-hour emergency care services 7 days a week (Medicare Learning Network, 2015, p. 2).

The Minnesota Rural Hospital Flexibility (Flex) Program was created to improve health care access and quality, and to decrease financial strain on rural hospitals in Minnesota (MDH, 2015). This program serves a very important function for CAHs by specifically working to improve the quality of health care provided in communities served by Minnesota's CAHs, supporting efforts to improve the operational and financial performance of CAHs, and supporting rural communities to develop collaborative regional and local delivery systems.

Benefits of CAH Status

Benefits of CAHs include cost based reimbursement (101% of cost), the ability to focus on community needs, establishment of a network with an acute care hospital for support, flexible staffing and services, capital improvements costs that are included in the allowable costs for determining Medicare reimbursement, and access to Flex Program grant money (Rural Assistance Center, 2015). CAHs are not required to have a RN on site 24 hours a day or 7 days a week as are acute care hospitals. CAHs have the benefit of more flexibility than acute care hospitals in relation to staffing levels for nurses, and this is an advantage that mandated nurse-to-patient ratios would eliminate. Additionally, federal requirements allow CAHs to close when no patients are present, and staff is not required to be present when closed.

CAHs can also be granted approval for swing-beds. Swing beds allow for post-hospital Skilled Nursing Facility (SNF) level care performed in the hospital's inpatient beds (CMS, 2015). CAHs occasionally have more swing bed patients than acute care patients at any given time, and this can have a significant impact of the level of nurse staffing required and provided by the hospital. The swing bed program for CAHs differentiates them from acute care hospitals and requires significantly different RN staffing patterns.

The level of RN staffing in large hospitals is generally well established, but the level of RN staffing in small CAHs (30% of U.S. hospitals) is relatively inconsistent (Cramer & Jones, 2011). CAHs are significantly different than acute care hospitals, and require flexibility in staffing and other areas to remain financially viable into the future. Staffing practices utilized in acute care hospitals cannot simply be adopted in CAHs. Individual CAH must consider best practices when implementing a comprehensive staffing plan for the organization.

Financial Challenges Facing CAHs

As of June 30, 2014, there were 1,326 CAHs across the United States (O'Donnel & Younger, 2014). CAHs provide valuable medical care in rural areas of our country, and are often the economic driver of small communities. O'Donnel and Ungar suggest that rural hospitals serve many of the U.S.'s most vulnerable individuals, and these hospitals are in critical condition. Additionally, 43 rural hospitals have closed since 2010, eliminating over 1,500 beds from the system (p.1).

The Affordable Care Act (ACA) was enacted to improve access to health care for all Americans, but critics assert that the ACA is accelerating the demise of rural providers that focus on access and service to our society's most vulnerable (O'Donnel & Ungar, 2014). Angela Mattie, chairwoman for the Health Care Management and Organizational Leadership

Department at Connecticut's Quinnipiac University, states "the stand-alone, community hospital is going the way of the dinosaur" (O'Donnel & Ungar, 2014, p. 2). In addition, O'Donnel and Ungar note that rural hospitals are usually the largest employer in the area, and a hospital closure usually takes other businesses with it. The Department of Health and Human Services Secretary Sylvia Burwell stated that she is "particularly acutely focused on the challenges facing rural hospitals" (O'Donnel & Ungar, 2014, p. 4). Fitzpatrick, Allen, and Soto (2013) contend that the nursing budget for most hospitals is generally the highest cost in the organization, and the ability to justify the cost benefit is crucial. Effective and efficient nurse staffing plans must be in place to adequately address the needs of the patient, while also ensuring the hospital can keep its doors open to continue serving the community. Hairr, Salisbury, Johannsson, and Redfern-Vance (2014) assert that health care is a commodity in the United States and nurses are an expensive budgetary consideration. Hairr et al. also suggest that health care facilities have the potential for significant financial savings by reducing the number of nurses. Sultz and Young (2014) note that the ACA introduced new innovations to reduce costs, specifically by focusing on reducing waste in the system, recommending ways to decrease costs, improving outcomes for patients, and expanding access to high-quality care.

Mandated nurse-to-patient staffing ratios may not solve the problem of nurse staffing in CAHs. Rajecki (2009) asserts that many hospitals would have to spend millions of dollars or more per year to comply with mandated staffing ratios without a funding mechanism. This is a cost that many CAHs, including Lake View, may not be able to afford without significant impact on services and quality outcomes. Many CAHs have ongoing challenges maintaining favorable financials each month, and often struggle to maintain a positive operating margin. According to Herman (2014), the Flex Monitoring Team reports the following critical-access snapshot:

Figure 1. Snapshot of CAHs in 2014

Operating margin: 0.7%	Days cash on hand: 69.2
Total margin: 2.3%	Revenue in accounts receivable: 51.5 days
Cash-flow margin: 6.4%	Long-term debt to capitalization: 18.8%
Outpatient revenue to total revenue: 73.1%	Medicare inpatient payer mix: 73.3%
Percentage of patient costs in labor: 44.6%	Salary/average full-time employee: $47,900
Acute care bed occupancy per day: 3.7	Swing bed occupancy per day: 1.6

Adapted from *Modern Healthcare*, 2014, p. 15.

Critical access hospitals often struggle financially, and administrators must pay close attention to the overall budget. Determining the optimal level of RN staffing for operational efficiency and effectiveness is one of many considerations by hospital administration in the fiscal management of the organization.

Other CAH Staffing Challenges

Critical access hospitals are faced with many unique staffing challenges distinct from acute care hospitals in urban areas. Rural hospitals have experienced an increase in the number of mental health patients presenting for care, and many of these patients require more immediate and intensive staffing resources. Suicidal and violent patients often require one-on-one supervision which takes at least one of the core staffing positions out of the planned staffing mix. The need to care for people with mental health issues is increasing in hospitals, and the attitudes and abilities of nurses delivering this care has shown to be poor (Reed & Fitzgerald, 2005). Lake View's support staff (Health Unit Coordinator [HUC], Social Worker, Director of Nursing) are often required to step in to perform case management functions for these often challenging patients and their families. This shift of treatment to the general health care system for mental

health patients has occurred because of the increased emphasis on the rights of people and the closure of many psychiatric institutions (Reed & Fitzgerald, 2005). Reed and Fitzgerald also assert that rural areas are more likely to be impacted because of their limited mental health resources, putting more pressure on CAHs. Reed and Fitzgerald suggest that the provision of mental health services may be more difficult in rural areas because many hospitals have limited or no psychiatric facilities. In these cases, the experience and skills of the nursing staff are more important than the total number of nurses when dealing with this complex issue.

The patient census and patient acuities often differ significantly between CAHs and acute care hospitals. CAHs are often characterized as having low patient acuities, low and rapidly fluctuating patient volumes, as well as low numbers of adverse events (Cramer & Jones, 2011). Patient acuity is defined as the average severity of illness of the inpatient population, and determines how much individual care a patient needs (Stanton, 2004). The higher the acuity level, the higher the level of care required for the patient. Nurse staffing models must be flexible and adaptable to accommodate the ever-changing volumes and acuities of patients presenting to rural hospitals.

Lake View's patient acuity can also be quite low due to the fact that medically unstable or complex patients are quickly transferred to a Duluth hospital for a higher level of care. The most common acute patients admitted to Lake View include patients diagnosed with urinary tract infections, congestive heart failure, chronic obstructive pulmonary disease, and respiratory infections. Many of these patients have chronic conditions and have been inpatients at Lake View in the past. This can be an advantage to the hospital's nursing staff because the patients may already be familiar to the care team, and medical records and history may be readily available. Cramer and Jones (2011) note that little is known about specific nurse staffing roles in

CAHs because a limited number of employees perform multiple tasks. The situation at Lake View is similar in that RNs are often reassigned from inpatient care to cover other departments (outpatient clinics, or EDs), and this reassignment results in an interruption of patient care (Cramer & Jones, 2011). Cramer and Jones also note that this interruption of care is a necessity, but can be a leading risk factor for patient safety and quality outcomes. However, a CAH would have significant difficulty hiring and retaining separate nursing staff for each individual unit.

Chan, Killeen, Vilke, Marshall, and Castillo (2010) assert that nurse staffing is a critical component for overall ED operations, efficiency, and patient flow. Chan et al. also suggest that minimum staffing regulations may be very challenging in the ED because census, patient load, and acuity changes are often unpredictable. Mandated nurse-to-patient staffing ratios could be too inflexible to deal with the fluctuating census and acuity in the ED, as well as in the inpatient and swing bed units.

The majority of patients in a CAH at any given time can be comprised of mostly swing bed patients. These patients are essentially skilled nursing facility (SNF) patients located in a hospital bed. The majority of inpatients at Lake View are also swing bed patients. Some of these patients have low acuities, while others have high acuities because of dementia, confusion, agitation, or complex medical co-morbidities. Even though swing bed patients are located in the hospital, the level of care provided is very similar to that delivered in a SNF.

Nursing homes also have the same challenge of providing acceptable levels of quality care at low costs (Bowblis, 2011). SNFs are required to maintain a minimum amount of licensed nurse staffing (RNs and LPNs) per unit, and a minimum number of nurses must be on duty to provide direct care to residents. Bowblis notes that the nurses may include licensed staff including lower-skilled nurse aides, but the primary types of staff in nursing homes are RNs,

LPNs, and CNAs. The level and cost of nurse staffing in a CAH is very important because CAHs must often compete with local nursing homes for swing bed patients in order to maintain financial viability. However, although RNs are highly trained and more effective than CNAs at recognizing diseases, CNAs are responsible for the majority of direct care of residents in SNFs (Bowblis, 2011). Bowblis also suggests that the increased presence of CNAs in these units reduces the cost of labor-intensive practices. Lake View has been working to add more CNAs to the core staffing level to care for the increasing volume of swing bed patients in the facility with the goal of freeing up the RNs for the ED and acute care areas.

Mandated nurse-to-patient ratios would not address Lake View's need to hire more CNAs, and might even result in decreased use of RNs. A mandated nurse-to-patient ratio could result in being overstaffed with RNs based on census, patient acuity, ED volumes, and other variables. This staffing model may then become financially unmanageable. Hospital administration and nursing must remember to consider the number and acuity of subacute (swing bed) patients in a hospital unit, and staff accordingly.

Patient Acuity Models

Nurse staffing models vary by organization, and can often be a controversial issue in hospitals and health care settings. This conflict can be elevated when hospital administration and nursing staff measure acuity in different ways. Currently, nurse staffing is measured in one of two ways: nursing hours per patient per day (HPPD), or the nurse-to-patient ratio (Stanton, 2004). The nursing hours may include RNs, LPNs, and CNAs, or just RNs depending on the preference of each CAH. Jennings (2008) defines patient acuity as the patient requirements for nursing care, and reports that researchers have worked for over 50 years to develop staffing methodologies to assign the appropriate number of nurses to a group of patients. Jennings also

notes that patient classification systems (PCS) were in common use in the 1980s to predict patient requirements for nursing care, and this acuity system could be used to manage nursing personnel resources, costs, and quality. The patient acuity-based staffing model used across the United States is a method that uses the PCS to predict patient requirements for nursing care in order to predict nurse staffing, costs, and quality of care (Jennings, 2008). The PCS requires adjustments to nurse staffing based on patient diagnosis and co-morbidities (Hertel, 2012). Douglas (2010) lists 36 variables that should be considered on each unit for nurse staffing decisions, making the process quite complex (Appendix A). This list of 36 variables highlights the importance of making staffing decisions on an individual unit basis based on the professional judgment of the nurses in collaboration with management.

However, Fitzpatrick et al. (2013) report that nursing studies have not been able to easily translate a nurse's workload into a measurement that is understood by finance, consumers, legislators, and other parties. The typical benchmark used by nursing is hours per patient day (HPPD), and there is currently no method that can be used across hospital units or across hospital systems that allows nursing to develop standards of optimal staffing (Fitzpatrick et al., 2013). As previously noted, the staffing assignment complexities common in CAHs compounds the difficulty of utilizing this type of model. This challenge reinforces the need for establishment of best practices for nurse staffing in CAHs that are focused on individual hospitals.

There are a number of issues with utilization of PCSs. Hertel (2012) contends that a PCS could be compromised because it does not account for shift-to-shift fluctuations in nurse staffing and the influence on the quality care delivered. Validity and reliability of PCSs are not monitored frequently, leading to a lack of credibility among hospital administrators and staff nurses. Hairr et al. (2014) assert that nurse-patient ratios are only a starting point in the

discussion, and that researchers agree patient acuity and skill mix must be taken into account when addressing nursing staffing issues. When utilizing patient-to-nurse ratios and RN hours/patient/day, some methods differentiate between RNs and LPNs, while others did not (MacPhee, Ellis, & Sanchez, 2006). With these variables, nurse staffing is a complex issue that does not lend itself to a simple solution such as a mandated ratio.

Case Mix Index

A case mix index must also be considered when determining nurse staffing for a hospital. A case mix index is a measure of the severity of illness of the patients in a hospital, and more severely ill patients typically require more nurse staffing hours due to the complex care required (Serratt, Spetz, & Harrington, 2012). Stanton (2004) asserts that researchers believe that more accurate and consistent measures of acuity and quality are needed in addition to more data on all types of staffing in order to determine the complex relationship between nurse staffing and the quality of care delivered.

Welton (2014) notes that the distribution of mean care hours per patient day, also referred to as staffing intensity, was different between the medical and surgical units in community hospitals when compared to academic medical centers. This model did not address CAHs and resulted in more challenges with its use. The health care industry is changing rapidly, and the delivery of care in the inpatient and outpatient setting continues to evolve. Over the past several years, the rising acuity of patients and shorter length of stays in hospitals has resulted in the growing need for more registered nurses in hospitals (Welton, 2007). The challenge is trying to determine which hospital requires more staff, which type of staff required, and which tools and methods to utilize to determine the additional staffing required. Nurse staffing plans have been recommended as one way to accomplish this complex task, but limitations still exist.

Nurse Staffing Plans

Hospital administration must be proactive and prepared to deal with nursing shortages before they occur. Regular attention to and work on nurse staffing plans should be an ongoing process between management and front-line nursing staff. Nurse staffing plans require the development of predetermined strategies to address nursing shortages as they occur (MacPhee et al., 2006). These predetermined plans typically include discussions between managers and nursing staff at the unit level to address the unique needs and resources of that unit (MacPhee et al., 2006). Rajecki (2009) suggests that staffing committees were found to be one potential solution in addressing staffing plans based on the education and preparation of the RN, unit census, and unit activity. The American Nursing Association (ANA) has developed comprehensive principles for nurse staffing plans that consider a number of patient, staff, organizational factors, including the number of patients being admitted, discharged or transferred, patient acuity, unit layout, availability of supportive technology, ancillary staff, education and experience of nursing staff, and patient-to-nurse ratios based on the continued assessments from direct care RNs (MacPhee et al., 2006).

The ANA's staffing plans should also include information related to a unit's census, the intensity of the patient care needs, the skills and experience of the caregivers, unit geography, and available technology (Rajecki, 2009). RNs could have significant influence on this staffing plan, and not just be counted as a number under proposed mandated nurse-patient staffing ratios. Staffing models and staffing processes should also reflect the complexity of patient acuity, include patient turnover, and be flexible to allow nursing managers to meet staffing needs with available resources (Tierney, Seymour-Route, & Crawford, 2013). Nurse staffing plans may be

a beneficial tool for CAHs, and could be successful when used in conjunction with other best practices related to nurse staffing.

Opposing Views of Mandated Nurse-to-Patient Ratios

The issue of mandated nurse-to-patient ratios is controversial with research supporting both sides of the argument. Supporters of mandated-nurse-to-patient ratios cite research suggesting that ratios improve patient outcomes and quality, while critics cite contradictory evidence refuting these claims (Buerhaus, 2010; Chapman et al., 2009; Cramer & Jones, 2011; Hertel, 2012; Welton, 2014). The history of mandated nurse-to-patient ratios and their implementation in California is introduced.

History and support of mandated ratios. Mandated nurse-to-patient ratios are a controversial topic among hospital administration and nursing unions and their members. This issue has been receiving significant media attention in recent years. Supporters of mandated nurse-to-patient ratios argue that patient outcomes and quality will improve as a result of implementation. In 1999, California was the first state in the nation to pass legislation mandating minimum nurse-to-patient ratios in hospitals (Chapman et al., 2009). In 2004, California implemented a nurse-to-patient ratio of 1:4, and was the first state in the nation to do so (Rajecki, 2009). According to Welton (2007), minimum nurse-to-patient staffing ratios, such as those enacted in California, are intended to address the growing concern that patients are being harmed by inadequate staffing related to the severity of illness and complexity of care required by patients. The proponents of nurse-to-patient staffing ratios cite research indicating an association between nurse workload and patient mortality and morbidity (Welton, 2007). One such study by Allen (2013) supports the finding that mandatory staffing ratios in California lead to higher staffing levels, reduced workloads for nurses, fewer patient deaths, less burnout, higher

satisfaction, and increased retention of nurses. Allen (2013) also reports that no evidence has been found suggesting that ratios led to an overall reduction in the skill mix of nursing as some critics have suggested. However, there is also contradictory research on the impact of mandatory ratios on patient outcomes, quality, and hospitals.

Critics of mandated nurse-to-patient ratios. The research on mandated nurse-to-patient ratios such as those in California is not conclusive, and there is significant research supporting the negative impact of mandatory ratios. Hertel (2012) found that a report by the California Nursing Outcomes Coalition in 2005 documented no statistically significant change in patient safety or quality outcomes such as falls or pressure ulcers from mandated nurse-to-patient ratios. Evidence does not support that the use of mandatory ratios improves patient outcomes, and crucial factors such as nursing education, experience, knowledge, and skills should be considered instead (Tevington, 2011). According to Welton (2014), the two widely acknowledged studies used to support mandatory nurse-to-patient staffing ratios have various weaknesses. It is the position of the American Organization of Nurse Executives (AONE) that mandatory nurse staffing ratios based solely on an arbitrary equation of nurses to patients are ineffective, inefficient, and potentially harmful to patients (Aiken, Clarke, Sloane, Sochalski & Silber, 2002). According to Allen (2013), the problem is that mandatory ratios that are good for patients, good for nurses, and politically attractive are elusive.

Welton (2007) suggests that mandatory nurse staffing ratios may exacerbate rather than correct the imbalance between patient needs and available nursing resources. These findings must be considered when addressing nurse staffing in CAHs. The Minnesota Department of Health's *Hospital Nurse Staffing and Patient Outcomes* report specifically excluded small hospitals with an average daily census of less than 20 patients or an occupancy rate below 20%

in order to avoid drawing conclusions from unstable staffing patterns (MDH, 2015).

According to the Agency for Healthcare Research and Quality, California's system of medical care is described as only average to weak (MHA, 2013). This same organization ranks Minnesota as the best in the country. If nurse-to-patient ratios in hospitals had a direct correlation to overall patient outcomes, it could be possible to expect a correlation of these factors that would rank California above Minnesota. The literature review did not find any studies that clearly showed patient outcomes are directly correlated to nurse staffing in a CAH. A number of studies have not supported mandatory nurse-patient ratios, and a report by the California Nursing Outcomes Coalition documented no statistically significant change in patient safety and quality outcomes such as decreased falls or pressure ulcers (Hertel, 2012). Purcell, Kutash, and Cobb (2011) found that previous studies on California's mandated nurse-to-patient ratios found no statistically significant difference in patient outcomes. In addition, the implementation of mandated nurse-to-patient ratios has had an unanticipated effect on the use temporary or traveling nurses.

Temporary and traveling nurses. Buerhaus, DeRoches, Donelan, and Hess (2009) note that studies in California have demonstrated that nurse staffing ratios have increased nurse wages in the state, but did not increase job satisfaction or improve patient outcomes, and that much of the increased nurse staff required by the ratios was provided by temporary or traveling nurses. The use of temporary or traveling nurses, also referred to as supplemental registered nurses (SRNs), may lead to other concerns not related to patient outcomes and quality. SRNs are generally paid higher wages than hospital-employed nurses, and can result in increased costs for the hospital (Aiken, Shang, & Sloane, 2013). The use of SRNs is more expensive than using hospital-employed RNs, and this is an expense that many CAHs cannot incur. Various studies in

the literature have also looked at the financial impacts of nurse-to-patient ratios on hospitals, and this topic will be analyzed in further detail (Chapman et al. 2009; Cramer & Jones, 2011; Reiter, Harles, & Mark, 2012; Serratt et al., 2012).

Negative Financial Impacts of Mandated Ratios on Hospitals

Evidence indicates that mandated nurse-to-patient ratios for CAHs could result in significant financial hardship and even the closure of some of these valuable institutions. Serratt et al. (2012) assert that mandated ratios may have substantial financial impacts on hospitals, and that implementation of the mandatory ratios was not budget neutral, but resulted in increased costs. Mark, Harless, Spetz, Reiter, and Pink (2013) assert that after implementation of mandated nurse staffing ratios, RNs wages increased more in California than in other states, some hospitals' operating margins declined significantly, and some hospitals significantly decreased the uncompensated care they provided to the community. Another study found that minimum nurse staffing regulations resulted in significant increases in operating costs and significant decreases in profits with increased RN staff levels in 11 states after implementation (Serratt et al., 2012). Reiter et al. (2012) found that preliminary estimates after the implementation of the mandated nurse-to-patient ratios cost hospitals from $198,000 to $2,300,000 per hospital. MHA's website asserts that California's hospital expenses per inpatient day are approaching $2,700, while Minnesota's expenses per patient day are at $1,731. Mandated staffing ratios can put additional financial pressures on hospitals, resulting in unintended consequences such as individual unit or hospital closures, lower technology, reduction in infrastructure investments, and reductions in quality and access (Reiter et al., 2012). Mandated nurse-to-patient ratios could also result in community medical services being eliminated, or even the closure of the local hospital. Additionally, Rajecki (2009) suggests that

mandated staffing ratios will only result in more financial stress on an already overburdened healthcare system.

Challenges with Legislating Nurse Staffing Ratios

One of the most significant challenges in developing a comprehensive and accurate staffing bill is the number of variables that affect both nurse staffing and patient outcomes (Hertel, 2012). Legislation for mandated staffing ratios is often a blunt instrument aimed at solving complex problems that has unintended consequences (Mark et. al, 2013). Tevington (2011) states that passing legislation on mandated ratios without sufficient evidence is potentially dangerous. Staffing ratios are controversial because it is unclear whether the benefits outweigh the costs of complying with the standards (Reiter et al., 2012). Allen (2013) asserts that the requirement to apply ratios to all units at all times has caused problems and increased staffing costs for hospitals, because a nurse cannot take a break without someone replacing him or her on the unit. Allen (2013) also contends that mandatory ratios can carry risks if they are wrongly calibrated or become a rigid number on every shift with a detriment to the patient. These rigid regulations could result in hospitals being scrutinized for falling out of compliance in fluctuating departments like the ED.

One of the other significant challenges with the regulatory approach to nurse staffing is that hospitals would be required to increase the number of registered nurses employed without receiving additional reimbursement for patient care (Welton, 2007). There is substantial research noting that mandated nurse-to-patient ratios could negatively impact hospitals financially, but further discussion on nurse staffing and its correlation to quality of care is warranted (Fitzpatrick et al., 2013; Hairr et al., 2014; Seago, Rosenoff, Spetz, O'Neil, & Coffman, 2003).

Nurse Staffing Levels and Patient Outcomes

The level and type of nurse staffing in a hospital are important considerations when discussing patient outcomes and quality of care, but they are not the only consideration. The level of nurse staffing in a hospital can be effectively managed without the implementation of mandated nurse-to-patient ratios. Research directly correlating nurse staffing levels to patient outcomes is limited and variable, but other studies do suggest a connection between staffing levels and patient outcomes. Other factors such as the nurses' environment, level of engagement, caring activities, and education also play an important role in patient outcomes and quality.

Research supporting a correlation of nurse staffing and outcomes. MacPhee et al. (2006) found that nurse staffing is one of the most important variables to influence patient outcomes, including mortality, nosocomial infections, and patient complaints. The literature review also found that five major American studies reported in MacPhee et al. (2006) suggested that reduced nurse staffing levels were correlated with increased patient mortality (Aiken et al., 2002; Aiken, Sloane, Lake, Sochalski, & Weber, 1999; Needleman, Buerhaus, Mattke, Stewart, & Zelevinsky, 2002; Schultz, van Servellen, Chang, McNeese-Smith, & Waxenberg, 1998).

Higher nurse staffing levels have been shown to result in better patient care outcomes when compared to lower nurse staffing levels (Garrett, 2008). According to the Agency for Healthcare Research and Quality (AHRQ), hospitals with lower nurse staffing levels tend to have higher rates of poor patient outcomes including pneumonia, cardiac arrest, shock, and urinary tract infections (Stanton, 2004). The Evidence-based Practice Center notes that researchers have found that lower nurse-to-patient ratios were associated with higher rates of nonfatal adverse outcomes as well (Stanton, 2004). Garrett (2008) notes that research has demonstrated evidence that the prevention of CMS's four "never conditions" are associated with higher nurse staffing

levels. These four conditions that Garrett asserts can be prevented by higher nurse staffing levels are pressure ulcers, falls with injury, catheter-associated urinary tract infections, and vascular catheter associated infections.

Cramer and Jones (2011) also assert that increased staffing levels of registered nurses and higher education are both associated with decreased incidence of failure to rescue, urinary tract infections, pneumonia, shock, cardiac arrest, upper gastrointestinal bleeding, and decreased length of hospital stay in post-surgical and medical patients. It is often difficult to differentiate nurse staffing levels from other important factors that may impact patient outcomes; therefore, the use of the research is limited.

According to the Medicare Payment Advisory Commission, optimal RN staffing can save over $17 billion a year on unnecessary patient readmissions (Cramer & Jones, 2011). Twigg, Duffield, Bremner, Rapley, and Finn (2012) found that the levels of RN staffing in hospitals continue to be the most persistent and prominent organizational characteristic for predicting patient outcomes, and the skill mix of nurses could have a major impact on some patient outcomes. This point regarding skill mix also being a significant factor in patient outcomes is important to consider when establishing effective nursing staffing levels, as well as factors such as the nurses' environment and workload.

Nurse's environment and workload. Nurse staffing levels are a very important consideration in efficiently and effectively managing a hospital, but many other nurse staffing factors must be considered. MacPhee et al. (2006) note that safe, effective, and ethical nursing care requires an adequate number and appropriate use and mix of competent nurses available to care for patients. Hospital administration and nursing staff consistently agree that adequate staffing is a mutual goal, and hospital administration has the responsibility to ensure safe nurse

staffing. Mark et al. (2013) contend that when nurse staffing is less than adequate, nurse workload increases and surveillance can be compromised, resulting in potentially deleterious effects on quality. Mark et al. also suggest that increased workload as a result of poor staffing can lead to errors. Garrett (2008) also asserts that patient outcomes can be improved and medical errors reduced by reviewing nurse staffing patterns to ensure that mandatory overtime is not used to cover staffing shortages. Increased nurse staffing might enhance nurse surveillance and reduce missed care and errors and lead to overall improvement in the quality of care (Mark et al., 2013).

One key observation by Baernholdt and Mark (2009) is that staff adequacy can be measured as the proportion of registered nurses (RNs), vacancy rates, education, experience, expertise, and commitment to care. Additionally, research has linked poor nurse work environment to poor nurse outcomes such as poor job satisfaction and expensive nurse turnover (Baernholdt & Mark, 2009; Hairr et al., 2014). Havens, Warshawsky, and Vasey (2013) support this by stating that an adequate supply of nurses is needed to ensure access to care, but access to high quality care may be improved by an adequate supply of highly engaged nurses. These highly engaged nurses are described as dedicated, energized, and absorbed. In their study, Havens et al. (2013) define work engagement as a motivational state characterized by energy, dedication, and absorption. McHugh and Ma (2013) found that hospitals with a supportive work environment with manageable patient workloads have significantly better patient outcomes.

Overall job satisfaction of nurses. Nurse staffing levels and the nursing environment may not be the only variables that impact patient outcomes and reduced patient mortality. Shekelle (2013) asserts that many factors have been proposed as casual between nursing care and reductions in patient mortality in a hospital, other than simple nurse-patient ratios. Some of

these factors include nursing burnout, nursing leadership, job satisfaction, nurse turnover, and nurse practice environment.

Caring activities of nurses. The number of nurses on a unit is only one variable among many significant factors impacting high-quality care delivery. Patients and families often categorize good quality care as individualized to a specific nurse and his or her interpersonal qualities (Sossong & Poirier, 2013). Studies found that nursing typically emphasizes the humanistic side of the caring relationship, and not the technical aspect (Sossong & Poirier, 2013). Caring activities, and not the number of nurses on a unit may influence a patient's overall satisfaction with his or her hospital stay (Sossong & Poirier, 2013). Larrabee (2004) asserts that the highly complex nature of hospital care, reduced length of stay, and reduced ratios of nurses to patients may result in nurses taking a more task-oriented approach instead of a holistic approach to patient care. Sossong and Poirier (2013) suggest that nurses caring for too many patients at the same time are unable to provide patient-centered care, and that focus on patient-centered care must be a major component of any policy decisions related to nurse staffing. Sossong and Poirier also note that patient and nursing perception of care must be congruent if nurses are to be able to deliver high-quality, cost-effective, and patient-centered care. Purcell et al. (2011) assert that age and day of the week worked are important factors affecting nurses' stress level and that weekend shifts result in higher stress levels. Purcell et al. also suggest that the actions of the nursing staff, in addition to patient care, can affect the health of the patient.

Recognizing and understanding job-related stressors of nurses can help nurse managers implement strategies to reduce nurse's stress to subsequently improve patient outcomes (Purcell et al., 2011). Addressing nurse stress may be a more effective technique than simply mandating

that more nurses be added to a shift or to a hospital unit. Nursing education must also be considered as a strategy to address issues with patient outcomes in hospitals.

Education. The education level of RNs is also factor that needs to be considered when evaluating the quality of care delivered in a CAH. Cramer and Jones (2011) found that RNs with higher formal education have fewer errors with improved safety and quality. Additionally, a strict focus on the number of RNs in staffing ratios may be less important in CAHs than improving the educational opportunities and preparation of the RNs employed in those CAHs. Wallace (2013) suggests that staff mix takes into account educational preparation, experience, and professional needs when determining effective nurse staffing. Nurse managers should evaluate competency levels and critical skills of nurses in order to promote a safe patient care environment (Wallace, 2013). The findings note that CAHs may be better off investing resources in additional nurse education through tuition reimbursement programs and on site skills training instead of just adding more nurses to a shift.

Inability to Use Staffing Levels to Predict Patient Outcomes

A relationship between nurse staffing levels and patient outcomes is contradictory and unclear in the research. Numerous studies have failed to identify which specific level of nurse staffing will lead to improved patient outcomes (Aiken et al., 2002; MacPhee et al., 2006; Shekelle, 2013; Twigg et al., 2012). For example, the Minnesota Department of Health's *Hospital Nurse Staffing and Patient Outcomes* report in January of 2015 notes that there has been decades of research produced on the correlation between nurse staffing and patient outcomes, and evidence from the strongest study designs suggest an inverse relationship between lower nurse staffing and three specific patient outcomes. These three patient outcomes are patient mortality, failure to rescue from surgical complications, and falls in the hospital. The

study also suggests that some studies show strong evidence that outcomes such as drug administration, missed nursing care, and patient length of stay are linked to lower nurse staffing levels, while other studies show mixed or no evidence of the above outcomes (Griffiths et al., 2014; Shekelle, 2013). MDH's summary of the literature review in the report asserts that while the literature has demonstrated a correlation between nurse staffing volumes and certain outcomes, it has not established that an increase in nurse volume will improve patient outcomes. The study also notes that published evidence doesn't provide specific nurse staffing levels that will lead to certain patient outcomes, or suggest particular staffing models that might be more effective in improving outcomes for patients.

Stakeholder Interests

Hospital administrators, professional special interest groups, nursing unions, registered nurses, federal and state governments, and ancillary hospital staff all have a vested interest in nurse staffing levels in a CAH. Each of these stakeholders are analyzed using the current literature on the topic.

Hospital administration. Hospital Chief Executive Officers (CEOs), also referred to as hospital administrators, are responsible for overseeing the day-to-day operations of a hospital or healthcare system. According to Healthcare Administration (2015), CEOs serve as the leader of the organization and are responsible for articulating the hospital's mission and vision to the community, and work with the board of directors to carry out to the strategic vision and policies for the hospital. Administrators in CAHs work closely with chief nursing officers, directors of nursing, or nursing managers to effectively staff hospitals with nurses to provide safe and high-quality patient care. Hospital administrators are ultimately responsible for ensuring the long-term financial viability of the organization. Hertel (2012) contends that hospital administrators

must make certain the continued financial viability of the institution, provide for positive patient outcomes, maintain adequate staffing, and keep up with technological advances. Hairr et al. (2014) assert that hospital administrators must be financially responsible and examine every avenue that could save lives, improve nursing job satisfaction, retain nurses, and save health care dollars. Some researchers argue that increasing nurse-patient ratios will not result in any cost savings for a hospital, and will actually increase overall health care costs (Hairr et al., 2014).

Hospital CEOs and administrators have argued that mandated staffing ratios do not necessarily result in improved care delivery, and could threaten the long-term survival of rural hospitals. The current research on nurse staffing to patient outcomes is not conclusive and more research is needed. Hospital administrators and nurses must work together on staffing to ensure high-quality care, safety, and financial viability. Many of the problems identified by nursing could possibly be solved by other process changes without the addition of additional nursing staff arbitrarily assigned to a unit or hospital. Hospital administrators and policy makers must carefully consider RN workforce issues because adequate RN staffing in CAHs is associated with improved patient safety, improved quality of care, and reduced nurse dissatisfaction and costly turnover (Cramer & Jones, 2011). This consideration of RN workforce issues cannot be effectively or efficiently accomplished with mandated nurse-to-patient ratios. Many of the studies on nurse staffing suffer from data limitations, and this makes their findings less applicable to Minnesota hospitals (MDH, 2015).

Professional organizations. The Minnesota Hospital Association (MHA) and American Nursing Association (ANA) both offer valuable insight and research findings on the issue of nurse staffing in hospitals. Each professional organization is discussed related to nurse staffing in hospitals.

Minnesota Hospital Association. The MHA asserts that nurse staffing decisions are best made at the local hospital by health care professionals closest to the bedside (www.mnhospitals.org). The MHA website also notes that Minnesota has been ranked among the top states for healthcare quality by multiple independent quality organizations, and that research has not been able to establish a definitive staffing level to ensure quality outcomes for patients. The American Hospital Association asserts that nurse-to-patient staffing ratios reduce scheduling and staffing flexibility. Additionally, the American Organization of Nurse Executives (AONE) also opposes mandatory ratios (Welton, 2014). AONE calls for a more balanced approach by focusing on monitoring of nurse staffing, improved recruitment and retention approaches, and development of undergraduate nursing education (Welton, 2014).

The Minnesota Hospital Association asserts that The Nurse Staffing Plan Disclosure Act of 2012 would transfer the critical decision on nurse staffing from local hospitals to the government. The MHA also reports that the claims of supporters just do not stand up to the facts, and a number of issues have been identified. The first concern is that new legislation would result in rigid staffing quotas for which there are no national standards. The legislation on this issue identifies models on nationally accepted standards and mandated staffing ratios from four different organizations, but the four organizations all have different views on the issue. Mandatory staffing ratios could increase hospital labor costs by 4%, and these cost increases would have to be passed onto patients, employers, and taxpayers (MHA, 2015).

The second issue identified is the recommendation that nurses be put in charge of scheduling. MHA argues that nurses already drive staffing decisions because nurse leaders around the state already work with bedside nurses and other caregivers to create schedules that reflect the needs of the patients and nursing staff.

The third issue identified in the proposed legislation is that the bill called for a 12-member commission, including nine nurses, two public representatives, and one hospital representative to develop staffing regulations for Minnesota hospitals. According to the MHA, the government would then be responsible for implementing rigid staffing quotas for local hospitals, and the government would also have the authority to propose sanctions for those hospitals that cannot maintain compliance.

The MHA recommends that every patient deserves personalized care that treats the whole patient, and this is accomplished by care decisions made by a team that includes physicians and nurses (MHA, 2015). The organization also asserts that staffing levels should be based on the patient's illness, the whole care team involved in the patient's care, and the experience of the care team members. MHA opposes government mandated nurse staffing quotas, and suggests that health care professionals closest to the patient should determine appropriate staffing levels. The MHA reports that the American Nurses Association's Principles for Nurse Staffing emphasizes the importance of flexibility and the need to staff according to patient acuity and not to a fixed number.

American Nursing Association. The ANA respects all efforts to address the nurse staffing issue, and the organization has concerns about the establishment of fixed nurse-to-patient ratios in either federal or state legislation (Rajecki, 2009). The ANA states that legislative ratio approach treats nurses only as numbers and not as professionals and partners in providing quality patient care to all. An approach that acknowledges and respects the professional judgment of the nurses on the unit in collaboration with management would be the preferred approach to nurse staffing issues.

Unions. The National Nurses United (NNU) union has recently proposed mandated nurse staffing ratios for registered nurses in hospitals across the United States. This initiative started in California when legislation was passed in 1999 and later implemented in 2004-2008. The NNU asserts that mandated staffing ratios result in higher quality and safer care delivery in hospitals, but these ratios may not adequately address CAHs. The Minnesota Nurses Association (MNA) supported legislation in 2012 that would have imposed a government-mandated nurse-to-patient ratio in every hospital in Minnesota, and the MNA continues to pursue legislation for mandated ratios on the state level.

Hamilton (2014) asserted that patients are being put at risk because hospital management does not take nursing judgment into account for staffing level decisions. Hamilton also asserts that Minnesota hospitals need to be held accountable to a standard so that patients and their loved ones can count on adequate RN staffing. Nurses on the frontlines of patient care in hospitals have consistently advocated for the addition of more staff as the default solution to various problems in the hospital setting without apparent consideration for the long-term financial stability of the organization. Nurse executives and managers are frequently at odds with staff nurses by the bedside over nurse staffing, especially those represented by labor unions (Seago et al., 2003).

Nurse staffing levels are a complex issue that cannot be solved by simply adding more nurses to every unit in every hospital in Minnesota. Ongoing labor management committee discussion and collaboration with union business agents and collective bargaining unit members related to nurse staffing is an important strategy in dealing with this issue. The role of the union is to provide more nursing jobs, higher wages, and more stability for nurses, and the

implementation of the mandated patient-nurse staffing ratio could be seen as one strategy to do just that.

Registered nurses. There appears to be some disagreement between local nurses and the union on nurse staffing and ratios. Buerhaus et al. (2009) assert that the majority of RNs favor ratios, but a good number of RNs either do not support ratios, or are unsure. Buerhaus et al. (2009) reports that a clear majority of nurses feel that their work will increase, and only a small percentage feel that new ratios will result in more respect, additional staffing, higher pay, and increased status. Hertel (2012) contends that there are many variables impacting staffing decisions, and the RN needs to be informed and take an active role in determining the best staffing ratio. The sharing of best practices related to nurse staffing and collaboration using objective tools in determining appropriate staffing levels in a CAH should result in high-quality patient care delivery and financial viability for the organization.

Federal and state governments. Federal regulations related to nurse staffing have been in place for quite some time. One federal regulation in particular requires Medicare participating hospitals to have adequate numbers of licensed registered nurses, licensed practical nurses, and other personnel to provide nursing care to all patients as needed (ANA, 2015). Critics argue that this unclear language and the failure of Congress to enact a federal law related to the issue have shifted the responsibility to the states. The ANA reports that state staffing laws tend to fall into one of three general approaches:

1. Hospitals are required to have nurse driven staffing committees that create staffing plans that reflect the needs of the patient population and match the skills and experience of the staff.
2. Legislators will mandate specific nurse-to-patient ratios in regulation or legislation.

3. Facilities are required to disclose staffing levels to the public and/or regulatory body (ANA, 2015, para 4).

As of December 2014, 13 states have laws or regulations addressing nurse staffing levels in hospitals, seven states have staffing committees responsible for plans and staffing policy, and five states have some form of disclosure, or public reporting (ANA, 2015). Although not a mandated staffing level state, Minnesota has requirements for public reporting of nurse staffing levels in hospitals.

California is the only state that has laws and regulations requiring minimum nurse- to-patient ratios to be maintained on all units at all times. Garrett (2008) stated that 34% RNs feel that ratios should be mandated by the federal government, 29% feel that ratios should be mandated by the state government, 26% feel that ratios should not be mandated at all, and 12% were unsure. Policymakers will want to monitor developments in nurse staffing issues closely in the future to evaluate the need to increase nurse supply and reduce adverse patient outcomes (Stanton, 2004). It is important to note that the Centers for Medicare and Medicaid Services (CMS) does not allow for standardized guidelines for patients, but rather require an individual care plan for each unique patient (MHA, 2015).

Impact on Ancillary Staff

The level of nurse staffing can have a significant impact on other departments within a hospital. If the level of increased staffing in response to mandated ratios results in financial stress to a hospital, the hospital may have to make tradeoffs, such as cutbacks on maintenance, service reductions, reduction in technology investments, and decreased acquisitions (Serratt et al., 2011). Welton (2014) found that hospitals decrease the number of other staff such as unlicensed assistive personnel and housekeepers in response to mandated ratios for RNs. The

reduction is undertaken to compensate for the increased expense and loss of flexibility. Ancillary staff also plays a very important role in delivery of care in a hospital setting, and cuts to these staff would have a negative impact on the hospital and in the community.

Many have argued about the impact of registered nurse staffing on nursing assistants. If mandated nurse-to-patient ratios were implemented in CAHs, the hospital may not be able to afford employing more cost-effective CNAs and other support staff. Seago et al. (2011) argues that the nursing assistant assumes many of the custodial and clerical duties of the registered nurse, but there is anxiety amongst registered nurses that the assistant will assume too much responsibility and jeopardize patient safety while minimizing the RN job role.

Collaboration between Hospital Administration and Front-Line Nursing Staff

In summary, the ongoing debate over nurse-patient staffing ratios is complex, and the primary issue remains the delivery of safe, quality, and cost-effective care for the patient (Hertel, 2012). Douglas (2010) found that health care administrators must collaborate in order to develop a viable and sustainable formula for safe nurse staffing. In addition, this research notes that many factors should be considered when making staffing decisions, including the severity of the illness, family/situational needs, observation and intervention requirements, and dynamics of the nursing team. The best practice appears to benchmark staffing and outcomes against peers, and to avoid extremes in low staffing and high adverse events (Hertel, 2012).

The American Nurses Association asserts that finding an optimal nurse-to-patient ratio has been a national challenge, and that health care leaders have an opportunity to create innovative strategies through a collaborative effort and to find solutions that will build a safer environment for patients and registered nurses (ANA, 2015). The ANA also states that an optimal staffing model must assess patient acuity, unlicensed personnel, the skills, education, and

training within specific settings, and unique patient care settings during specific times of the day. Buerhaus (2010) suggests that reducing the costs of health care is a major goal in the future, and nurses will be expected to play a more visible role in modifying their practice to reduce costs without harming the safety or quality of patient care. MacPhee et al. (2006) recommends that nurse staffing initiative be linked to effective leadership, and that units with transformational leadership styles had nurses with higher job satisfaction and lower nursing turnover. MacPhee et al. suggest research has been insufficient to support mandatory nurse-to-patient ratios as a major means to ensure safe nurse staffing. Instead, MacPhee et al. recommend the use of staffing plans in all organizations employing nurses, with input from front-line nurses, as the preferred method to address the complexities involved in matching skills of nurses and other care providers to the needs of the patient.

Nurse staffing in CAHs is a complex issue with no quick or easy solutions, and support, not regulation, is needed for safe nurse-patient ratios (Hertel, 2012). A review of the current literature indicates no conclusive findings on the use of mandated nurse-to-patient ratios in hospitals, and both positive and negative impacts have been analyzed. A review of the literature also fails to identify a direct correlation between specific nurse staffing levels and patient outcomes, and does not identify which level of nurse staffing improves patient outcomes. The research does suggest that nurse staffing levels, in addition to many other factors, are an important consideration when discussing patient outcomes. Stakeholders have the mutual goal of ensuring appropriate nurse staffing levels in a CAH for the delivery of high-quality patient care.

The ongoing challenge for CAH administration is identifying what the correct level of nurse staffing should be for a particular unit or hospital for each given shift, and there is not

always agreement with front-line nurses. Some research has shown that nurse staffing levels may be correlated to certain patient outcomes, but mandatory nurse-to-patient ratios have not been proven to be an effective method to improve patient outcomes. Clearly, based on the mixed findings of this literature review, other more effective techniques must be implemented by stakeholders to ensure high-quality care delivery and optimal patient outcomes.

This project is important because there is no clear evidence in the current literature supporting an evidenced-based solution to address this challenge. Currently there is no method that can be utilized across hospital units or hospital systems that would allow nursing to develop standards of optimal staffing (Fitzpatrick, Anen & Soto, 2013; Welton, Zone-Smith, & Bandyopadhyay, 2009). The solution to this problem is identified for one CAH in the results of this project.

Solution

Nurse staffing is a challenge in all hospitals; however, CAHs present unique challenges that require an individualized approach to ensure efficient and effective financial management of the organization. Mandated nurse-to-patient ratios are not appropriate for CAHs, and could be detrimental to the future of these institutions. Cramer and Jones (2011) contend that mandatory nurse staffing ratios could be harmful to CAHs, and would require CAHs to ignore key economic and labor conditions while reducing their flexibility when responding to patient care demands. MacPhee et al. (2006) suggest that there is insufficient evidence to support mandated nurse-to-patient ratios, and instead recommend staffing plans to adequately address the complexities of nurse staffing in hospitals. Cramer and Jones (2011) assert that CAHs have been characterized as having low patient acuities, low and fluctuating volumes, and low incidence of adverse events.

These findings support the need for proactive staffing plans that are flexible and utilize feedback from the professional nurses working directly on the unit.

Best practices related to nurse staffing must be identified for CAHs to assist in determining optimal nurse staffing levels, safe patient care delivery, and the long-term financial viability of the organization. This project aims to identify and utilize best practices to establish a comprehensive nurse staffing plan for the Lake View Memorial 25-bed critical access hospital. This project's solution to the complex problem of nurse staffing in a CAH consists of identification of best practices that includes the formulation of documents and tools for data collection and decision-making to assist with nurse staffing. The adaptation of these best practices assists in the creation of a comprehensive nurse staffing plan and also serves as another best practice recommendation.

Best Practices

A best practice is a procedure that has been shown by research and experience to produce optimal results and that is established or proposed as a standard suitable for widespread adoption (best practice, 2015). Hertel (2012) asserts that the best practice in nurse staffing is to benchmark staffing and outcomes against peers and avoid extremes in low staffing and high adverse events. Currently, there is no publically reported data for CAHs that would allow for the benchmarking suggested by Hertel. The comprehensive literature review conducted for this project identified best practices related to nurse staffing in non-CAH hospitals, and this information is adapted to CAHs. A summary of best practices for nurse staffing is reviewed. Adherence to best practices, in combination with the evaluation of objective data, will assist hospital administration in working collaboratively with nursing staff to meet the comprehensive

nurse staffing needs of the organization. The best practices for nurse staffing in a CAH proposed in this study include the following:

1. Effective communication between hospital administration and nursing staff;
2. Formal sharing of information on the organization's strategy, budget, and financials;
3. Effective leadership from hospital administration and nursing management;
4. Open and ongoing collaborative discussion on patient acuity and case mix;
5. Providing educational opportunities for nurses;
6. Creation of data collection and decision-making documents to assist with nurse staffing in the organization; and
7. Establishment of a comprehensive nurse staffing plan after considering all of the above best practices.

Each of these best practices are discussed in relation to the research and goal of improving nurse staffing at Lake View Hospital. An outline of these best practices is included in Appendix B. In addition to improving nurse staffing, adherence to these best practices could potentially improve patient outcomes and prevent adverse health events. Nurse engagement and nurse retention could also be improved by following the best practices identified by this project. Finally, adherence to best practices related to nurse staffing in CAHs is another valuable strategy in supporting the long-term financial viability of the organization.

Effective Communication

Effective communication between hospital administration and nursing staff is a best practice that will help to ensure appropriate nurse staffing and positive patient outcomes in the hospital. Hertel (2012) asserts that the primary issue for hospitals is the delivery of safe, high-quality, and cost-effective care, and this can only be accomplished when administration, nurses,

and others work together and respect one another when working on this complex issue. A formal, comprehensive communication plan must be established between hospital management and front-line nursing staff, and this plan must be carried out on an ongoing basis. The sharing of appropriate staffing information must occur between hospital administration and the nursing staff with feedback shared between both parties. Opportunities for discussion and feedback on a staffing plan must be established to maximize collaboration between hospital administration and nursing staff.

This project outlines various communication channels, and includes labor management committee meetings, establishment of a formal email communication process, scheduled meetings between management and individual nurses, and formal memos from management as methods to develop an effective, comprehensive communication plan.

Labor management committee meetings. A monthly Labor Management Committee (LMC) meeting is utilized to discuss staffing and scheduling concerns with the MNA business agent and union stewards. LMC meetings have been a long-standing practice in many hospitals, but historically Lake View has not scheduled these meetings unless specific, unresolved problems were identified. LMC meetings are now scheduled monthly throughout the next year, and may only be scheduled every other month during the second year if mutually agreed upon by hospital management and the nursing union. The current collective bargaining unit does not specify a requirement for the frequency of these meetings.

Email communication process. Effective and ongoing communication with the primary RNs responsible for completing the self-scheduling process at Lake View is a critical process. A regular communication process using email is established between hospital administration and nursing staff to discuss upcoming schedule challenges, upcoming schedule concerns (Leave of

Absences [LOA], training opportunities), strategies to address known staffing shortages (FTE analysis), and other issues as they arise. The nurse responsible for facilitating the RN self-scheduling meeting will send a group email to include the union stewards, Director of Nursing and Administrator within 24 hours after completion of the scheduling meeting addressing the items noted above. The Director of Nursing and Administrator will review the group email together and reply to the group with a response to the issues presented in the initial email. Any issues unable to be resolved by group email will be added to the agenda for the upcoming monthly LMC meeting. Hospital management and nursing both have important communication obligations that must be adhered to in order to make this process effective and sustainable.

Nursing's communication obligations. The nursing team must openly share information about current scheduling challenges, anticipated gaps or challenges with the upcoming schedule, any unanticipated leaves of absences, and provide other valuable feedback to management. This free flow of information will support the goal both stakeholder groups are working together to put the interests of their patients first. This teamwork will help support high-quality and safe patient care delivery.

Management's communication obligations. The management team must respond to the nurse's initial email following the nurse self-scheduling meeting in a timely manner. The Director of Nursing and Administrator will respond to any concerns or questions presented by the nurse facilitator in the initial email. The management team will also reply with an update on the open positions currently posted, updates on any interviews pending or scheduled, and any other scheduling challenges impacting the organization. Any upcoming changes to service lines or programs requiring different nurse staffing resources will also be communicated back to the facilitator of the nurse self-scheduling process.

Scheduled meetings between management and individual nurses. Individual nurses will be provided with an opportunity to meet with the Administrator and Director of Nursing to discuss their ideas and provide feedback on the current nurse staffing plan. These meetings will provide both sides with the opportunity to work collaboratively on effective and efficient nurse staffing. Care will be taken to avoid any discussion on the specific terms and conditions of employment, as those topics will be reserved for the appropriate settings.

Formal memos. A more structured process of sending formal memos via email and placing physical copies of the memos in the nurses' mailboxes is established to promote all nurses receiving the same important information in a timely manner. The Administrator is working with the Director of Nursing on this process to improve communication to all nursing staff throughout the organization. These memos are filed and saved by the hospital's Administrative Assistant for future reference. This process helps to memorialize a record for reference when nurses may indicate they did not receive important information communicated by management. In addition to an effective communication plan between management and nursing staff, formal information sharing is also being completed.

Formal Information Sharing

The management team of the CAH must ensure that important information about the organization is shared with the nursing staff on an ongoing basis. The nursing team must also share important information with management to ensure effective collaboration between the two stakeholders. Hospital administration will share the following information at formal Employee Forums scheduled each month following the Lake View Operating Board meeting:

- Monthly patient statistics and census data;
- Monthly financials and year-to-date budget;

- Quality and other reporting data;
- Patient satisfaction data;
- Current and planned organizational initiatives;
- Updates on the organization's strategic plan; and
- Relevant updates related to the Affordable Care Act and health care reform.

CAHs often experience significant financial challenges, and this fact must be appreciated by the organization's employees in order support decisions related to nurse staffing. Hertel (2012) states that health care leaders must ensure that care is delivered to meet patient needs and while securing a profit for the hospital. In addition, hospital administrators must strive to protect the continued viability of the institution, adequate staffing, and positive patient outcomes (Hertel, 2012). Additionally, Serratt et al. (2012) assert that studies have found rural and smaller hospitals have reduced profitability and financial performance in comparison to larger and urban hospitals. Buerhaus et al. (2009) note that nurses' ability to thrive in the future will be increased if they receive a stronger education in health care economics and are able to align their clinical practice with the economic performance of the hospital. This sharing of essential information will support trust building between management and the nursing staff, and will strive for transparency and collaboration during the nurse staffing process.

Effective Nursing Leadership

Effective nursing leadership is a very important factor and a best practice for nurse staffing in a CAH. MacPhee et al. (2006) assert that nurse staffing initiatives must be linked to effective leadership, and that transformational leaders provide staff with encouragement, support, positive feedback, and individual consideration. Transformational leadership also promotes work environments that feature teamwork, cooperation, and fewer interpersonal conflicts

(MacPhee et al., 2006). Bass (1990) asserts that transformational leadership occurs when leaders expand and elevate the interest of their employees, generate acceptance of the mission of the group, and encourage their employees to look beyond their own self-interest for the good of the group. Bass contends that the four characteristics of transformational leaders are charisma, inspiration, intellectual stimulation, and individualized consideration. In contrast, Bass defines transactional leadership as either an exchange of promise and good reward for good behavior or threat and discipline for poor performance. Contingent reward, management by exception (both active and passive), and laissez-faire are characteristics utilized to define transactional leaders. In this context, Bass asserts that transformational leaders have better relationships, contribute more to their organizations, and are more effective than transactional leaders.

Shekelle (2013) suggests that many factors contribute to the relationship between nursing care and patient mortality, including nurse job satisfaction, teamwork, nurse turnover, nursing leadership and nurse practice environment. Havens et al. (2013) contend that nurse managers have the challenge of building and sustaining work engagement in multiple generations of nurses practicing side-by-side. Additionally, managers must understand the generational cohorts of the nurses they lead, and promote understanding and appreciation of the values and work behaviors of these different generations (Havens et al., 2013). MacPhee et al. (2006) also found that staff outcomes such as nurse burnout, job satisfaction/dissatisfaction, and intent to leave must be surveyed by nursing leadership. By effectively addressing these concerns early on, nurse managers will be better prepared to intervene to promote high-quality care and positive patient outcomes. Baernholdt and Mark (2009) suggest that poor nurse outcomes are linked to poor nurse environment, and the role of nursing leadership is paramount in addressing this issue. Effective leadership in a CAH must include effective communication at regularly scheduled

nurse staff meetings, performance evaluations for all nursing staff, and ongoing leadership training for the nursing leaders.

Nurse staff meetings. Effective nursing leadership is accomplished by implementation of staff meetings for front-line nurses in the CAH. Two-hour nurse staffing meeting are scheduled every other month with the Director of Nursing and the front-line nursing staff. The hospital Administrator also attends a portion of the meeting to present on any updates and answer questions from the nursing staff. The second hour of the meeting consists of staff education on a specific nursing topic or skill. The educational topics will be focused on the current needs of the organization with the aim of increasing the skill mix and clinical competence of nursing staff.

Performance evaluations for nursing staff. Each nurse at Lake View is required to meet with the Director of Nursing to identify goals for personal and professional development. The goals are discussed between the Director of Nursing and the nurse, and are documented in Lake View's online performance appraisal system. The Director of Nursing will meet with each individual nurse on a quarterly basis to review the documented goals and will provide performance feedback in relation to the goals formulated by each nurse. Each nurse at Lake View is scheduled for a formal performance evaluation each year with the goal of promoting personal and professional growth and development.

Leadership training. Lake View invests in monthly leadership training and development for its entire leadership team. Topics include conflict resolution techniques, team development strategies, techniques to promote employee engagement and retention, and establishment of employee recognition programs. This training is designed to support the leadership competencies of the hospital's management team, and will serve to support the work

of the hospital's nursing team. This training is completed by a variety of methods, including internal trainers and educators, outside consultants, webinars, and off-site seminars.

Ongoing Discussion of Patient Acuity and Case Mix

Hospitals must consider the severity of illness of the patients in the hospital unit when determining upcoming nurse staffing needs. This awareness can be accomplished by daily conversations with front-line nursing staff, patient rounding by a multi-disciplinary team, and chart review by management and nursing staff. Hertel (2012) states that it is vital for nurses to take an active role by being informed and participating in the development of a nurse-patient system to promote safety and positive patient outcomes. Serratt et al. (2012) assert that more severely ill patients require more complex care, resulting in greater requirements for nurse staffing. Hairr et al. (2014) found that researchers agree that patient acuity and skill mix must be considered when addressing nurse staffing concerns.

Multi-disciplinary rounding team. These issues can be identified and discussed between front-line nurses and the multi-disciplinary rounding team, and adjustments to the core staffing plan can then be implemented as indicated. The charge nurse working the day shift at Lake View now joins the multi-disciplinary team for patient rounding on Mondays, Wednesdays, and Fridays at 10:30 a.m. The interdisciplinary team discusses the patients' needs with the individual patients during rounding and identifies any unmet needs. Any additional staffing needs are identified, and the charge nurse passes this information on to the next shift at daily report. Collaboration between the rounding team and charge nurse helps to support effective and efficient nurse staffing on the unit.

Providing Educational Opportunities for Nurses

Hospital management must offer ongoing educational opportunities for the nursing staff to promote high-quality and safe patient care delivery. Continuing education courses, on site skills training, and tuition reimbursement for higher education are all strategies that must be implemented for investment in the nursing staff of a CAH. Shekelle (2013), Aiken et al. (2011), and Cramer and Jones (2011) found that baccalaureate education for nurses has been associated with better patient outcomes. Twigg et al. (2012) contend that the skill mix of nurses providing care could impact patient outcomes, and is an important consideration in developing strategies for nurse staffing. Research also found that the skill mix of the nurses was more critical than total hours of care in regard to nursing sensitive outcomes (Twigg et al., 2012). Therefore, investments in the individual skills and education of a hospital's nursing staff may be more effective at improving outcomes than simply adding more nurses.

Education and training at staff meetings. Professional development requires paid time for nurse education and training on nursing topics and skills required for working in the CAH. This training takes place during the second hour of the nurse staff meetings that are scheduled every other month at Lake View. On site skills training is also performed every month on the nursing unit at Lake View. The education department at St. Luke's Hospital is involved with the curriculum for education and skills training at the CAH. An annual nurse education and skills training budget has been established to accomplish this important goal of training and skills development. Cramer and Jones (2011) suggest that the CAH environment is highly variable, and RNs who provide direct care must constantly plan and adapt their skills in terms of types of procedures performed and changing levels of care. Focusing solely on the number of RNs by implementing ratios may be less important for safety and quality in a CAH than efforts aimed at improving the educational preparation of the RNs (Cramer & Jones, 2011). MacPhee et al.

(2006) contend that staffing plans are more effective at matching the clinical skills of RNs to the needs of patients than mandated patient-to-nurse ratios.

Customer service training. Educating nurses on customer service excellence and patient satisfaction is also a best practice that may improve patient outcomes and quality. Mandatory ratios have not been conclusively shown to improve patient satisfaction survey scores, so a different approach is warranted (Chapman et al., 2009). Attree (as cited in Sossong and Poirier, 2013) found that patients and relatives described good quality care from nurses as related to the nurses' interpersonal qualities and care that was highly individualized. Ongoing education for nurses, in contrast to scheduling more nurses, may assist in driving up patient outcomes and quality. Sossong and Poirer also suggest that a focus on patient-centered care must be a significant component of any policy decisions regarding staffing, and nursing education is an important consideration. The specific questions utilized in the patient satisfaction survey completed on Lake View's behalf will be shared with the nursing employees throughout the organization. Monthly education and discussion related to the customer service survey results is completed during the monthly Employee Forums and nurse staff meetings.

Training on mental health patient management. Ongoing education on managing mental health patients in rural hospitals is also beneficial for nursing staff. Reed and Fitzgerald (2005) note that nurses believed their lack of knowledge and fear of saying the wrong thing resulted in people in rural communities receiving limited mental health care from nurses at the local hospital. Reed and Fitzgerald also contend that education in mental health has only recently been considered to be an important component of nurses' education.

Data Collection and Decision Making Documents

Objective data collection processes and documents were created to monitor volume trends, staffing patterns, and hiring practices so that information could be easily analyzed to assist with effective and efficient staffing of the organization. As a result of this project, three documents were created or adapted to objectively analyze important information related to nurse staffing levels in a CAH.

The first document *Position Control* (Appendix C) is an Excel spreadsheet to assist in determining the total registered nurse full-time equivalents (FTEs) required for staffing Lake View Hospital. This document includes a comprehensive list of nursing employees and the FTE that they were hired at, their scheduled weekday and weekend shifts, total shifts, and the FTE comparison between these variables. The spreadsheet is used on a weekly basis to assist in determining the total FTE required to cover the core nurse staffing needs for Lake View Hospital. The document is also utilized when core staffing level structures are changed (summer schedule), when new service lines are added that require nurse staffing, or when employees transfer between departments resulting in a change to the FTE allocation within a department.

The second document utilized for this project is *Patient Statistics* (Appendix D). This document is used by hospital management to record daily volumes in the emergency room and urgent care, as well as in all of the different acuity categories in the inpatient hospital unit. The individual number of patients seen in the emergency room and urgent care over 24 hours are tracked and averaged for each calendar day. The daily patient census for acute, swing, transitional, respite, and observation beds is recorded, totaled, and averaged per calendar day. This information is used to adjust staffing levels, and to analyze volume trends over weeks and months.

The third document introduced for this project is *Additional Staffing Request* (Appendix E). This document is completed by nursing staff when additional staff is required for flexing the core staffing plan up to meet unanticipated volume surges. This document requires the nurse requesting additional staff (above the core staffing level) to record their name, date, time, and the name of the Administrator on call. The nurse records the current census in the emergency room and urgent care, as well as the current census in each of the four hospital acuity statuses. The type of additional staff requested (RN, CNA, HUC, or MA) is documented, along with the rationale for the request. Examples of this could include a request for a RN for an ambulance transfer, or a request for a CNA to perform one-on-one supervision for a patient with dementia. Completed *Additional Staffing Requests* will be filed in a binder each month along with the *Patient Statistics* document for tracking and data analysis purposes.

Nurse Staffing Plans

MacPhee et al. (2006) recommend that "effective, formal staffing plans should be implemented by all organizations employing nurses" (p. 22). By adhering to each of the best practices related to nurse staffing in CAHs, a nurse staffing plan can be formulated to provide structure and transparency for this complex issue. The use of the three new documents (*Position Control, Patient Statistics,* and *Additional Staffing Request*) assist in collecting objective information that can be shared between hospital management and nursing staff to allow for collaborative problem-solving. Hertel (2012) asserts that a method of staffing that incorporates nurses' input to develop staffing plans based on nurse-sensitive patient outcomes may be warranted, and would provide increased opportunities for nurses to play a direct role in staffing decisions. This method is accomplished by gathering nursing input through the multi-disciplinary rounding team, through the email communication system, and through the nurse

staffing meetings. MacPhee et al. (2006) suggest that staffing plans include input from front-line nurses, and should effectively address the complexities of matching the skills of nurses to the needs of the patients. The nurse staffing plan will help to promote high quality and safe patient care delivery to patients in the hospital as well as supporting the long-term viability of the organization. The American Nurse Association contends that nurse staffing plans should consider various patient, staff, and organizational variables such as:

- The number of patients admitted, discharged, or transferred;
- Patient acuity;
- Unit layout;
- Availability of supportive technology;
- Ancillary staff;
- Education and experience of nursing staff; and
- Patient-to-nurse ratios based on continued assessments from direct care RNs (MacPhee et al., 2006, p. 22).

Conceptual Model

The following conceptual model identifies the seven best practices for nurse staffing in a critical access hospital that have been presented in this Solution (Figure 1). The six best practices in bold on the horizontal line (rounded boxes) must be addressed by considering each one of the individual sub-factors listed. For example, under the best practice of effective communication, a LMC meeting schedule must be implemented, a group email process must be established, staff meetings must be scheduled, and a formal memo process must be implemented.

Best Practices for Nurse Staffing in a Critical Access Hospital

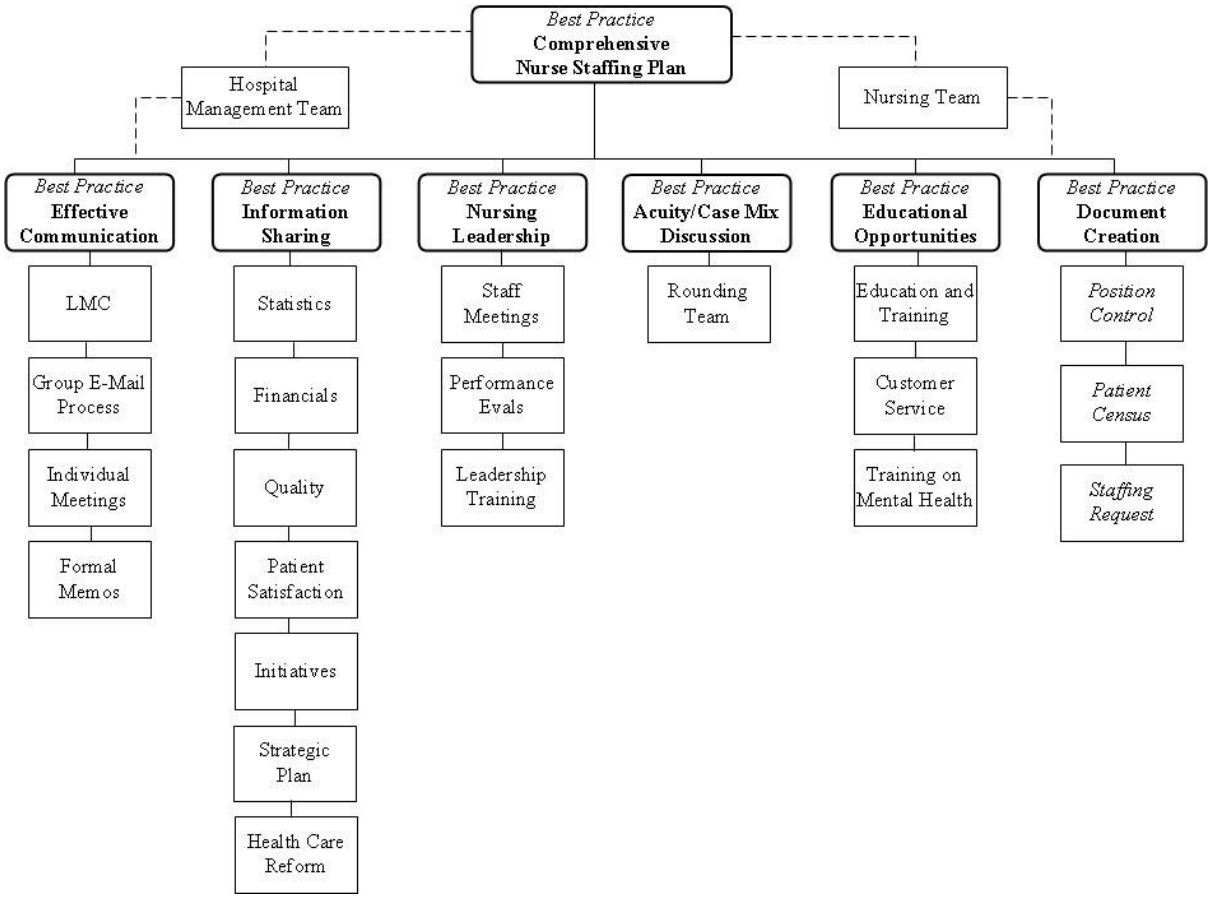

Figure 1. Best Practices for Nurse Staffing in a CAH

Comprehensive Approach

Effectively addressing each of the six subordinate best practices will result in supporting the seventh best practice of formulating an effective and comprehensive nurse staffing plan. Input from the hospital management team is equally important to input from the nursing team, and feedback from both parties is essential when striving toward each of the seven best practices for nurse staffing in a critical access hospital. As noted in the model (Figure 1), collaboration and teamwork between management and nursing should be the mutual goal.

In summary, CAH administration and front-line nursing staff would benefit from a thorough understanding and implementation of best practices when it comes to nurse staffing.

Effective communication with nursing staff, the formal sharing of information on the organization, effective nursing leadership, ongoing discussion of patient acuity and case mix, educational opportunities for nurses, creation of data collection and decision-making documents, and the utilization of a nurse staffing plan are all best practices for nurse staffing in a CAH. Once these best practices are understood and implemented, an effective and efficient comprehensive nurse staffing plan can be utilized on a day-to-day basis in the CAH. The challenging tasks of implementation and ongoing evaluation must be addressed as the organization moves forward.

Discussion

This section further discusses the challenging process of implementation of the best practices solution for nurse staffing presented in the previous section. Options for evaluating the success of this project, including a comprehensive nurse staffing plan, are presented. The various assumptions made from this project are also introduced and discussed. Limitations of the project's solution are identified and multiple suggestions for future research are included. The suggestions for future research are introduced with the goal of validating, improving, and expanding the outcomes of this particular project at Lake View Hospital. A summary of the specific outcomes and goals of this study are also presented.

Implementation

The implementation of best practices for nurse staffing supporting an effective nurse staffing plan in a CAH is an essential process for promoting high quality and safe patient care delivery. Hospital administration and the nursing team must work collaboratively during the implementation phase of this project.

RN recruiting and hiring. This project utilizes a customized Excel spreadsheet to determine the total RN full-time equivalent (FTE) required to staff a CAH. The total FTE is determined to ensure adequate coverage of vacations, sick days, and leaves of absences for the hospital's existing nursing staff. The *Position Control* document (Appendix C) is completed by the Director of Nursing every two weeks at the end of each pay period, and the results are shared with the hospital Administrator. This frequent attention to position control detail at Lake View keeps the focus on FTE distribution, current recruitment status, and overall retention trends. This data is then shared with the nursing team in a formal email exchange process to allow for collaborative problem-solving and strategic decision-making. The nursing team consists of all of the scheduled RNs in the collective bargaining unit at Lake View Hospital.

Short-term position control analysis. The short-term strategic decision-making topics will include discussion on the current open positions in the various departments, such as the hospital unit, emergency department, and the surgery and procedures department. The specific staffing needs for the day, evening, or night shifts are identified, as well as the nursing skill mix and experience desired for each open position. The current need for use of temporary nursing staff is also identified during this short-term position control analysis. Reassignment of nurses from one department to another to cover staff shortages or to address volume increase also occurs at this time.

Long-term position control analysis. In addition to meeting Lake View's short-term staffing needs, the *Position Control* tool is also used to identify long-term staffing needs. Shifts with more experienced nurses interested in preceptor opportunities for new hires are also identified for new nurse orientation. Opportunities for floor nurses interested in cross-training back in the surgery and procedure department are considered. These cross-training opportunities

for surgeries and procedures must be identified early to allow for adequate training in this department. Extended vacation requests and leave of absence coverage for maternity leaves are also identified and addressed during this process. Both the short-term and long-term agenda items are addressed in a structured email format that is exchanged between the union steward, RN schedule facilitator, Director of Nursing, and the hospital Administrator.

A proactive recruiting and hiring program for RNs is implemented by Lake View to ensure that total RN FTE levels are maintained within the range identified in the spreadsheet. This proactive approach will include posting open RN positions on the organization's website within 24 hours of learning about a vacancy in a current position, and posting open RN positions at least five months prior to the busier months of June, July and August to prepare for anticipated seasonal volume increases. The five-month window allows adequate time for recruitment, building an applicant pool, interviewing, offering positions, completing background requirements, and training the new RN hires. Part-time, full-time, and per diem positions are posted to meet the nurse staffing needs of the organization. This process also assists Lake View in establishing a pool of qualified applicants for upcoming vacancies and expected increased staffing needs.

Maintaining an appropriate total FTE level for RNs is an important first step to maintain the core staffing needed in the emergency department and inpatient hospital unit. A proactive approach to maintaining adequate nurse FTEs to cover organizational needs is one strategy that can help to prevent nurse stress and burnout. Purcell et al. (2011) assert that the value of strategies needed to prevent hospital nursing stress from becoming chronic and resulting in nurse burnout has been documented in the research. Garrett (2008) contends that hospital administrators should invest in adequate nurse staffing to improve patient safety and increase

nurse retention. The use of this tool assists Lake View in maintaining the appropriate level of nurse staffing required, narrowing the time-to-fill vacancies, and providing for processes to address unanticipated vacancies.

Monitoring patient volumes. The collection of accurate patient data is also of paramount importance when working to ensure appropriate nurse staffing levels in a CAH. Lake View's Controller will record daily statistics on patient volumes in departments directly impacted by nurse staffing. The Controller enters this data on the *Patient Census* document (Appendix D), and then shares this document with the Director of Nursing and hospital Administrator each day. The real time data assists the hospital management team in determining appropriate nurse staffing levels on the units based on actual daily volumes. This information is utilized to identify trends to assist in the analysis of staffing needs and day-to-day nurse scheduling. The information on patient volumes and census is shared with nursing staff during monthly Employee Forums, staff meetings, and LMC meetings to encourage transparent and collaborative problem-solving and decision-making.

Flexing up core staffing level. The *Additional Staffing Request* document (Appendix E) is utilized by nursing when the need for additional nursing staff above the core staffing level is indicated. Although the current collective bargaining agreement provides management rights for staff assignment of units on a day-to-day basis, this new process is initially implemented by communicating with the Minnesota Nurses Association (MNA) business agent and the two union stewards at Lake View Hospital. Upfront and transparent communication with the MNA and union stewards builds trust, and helps to support that the messaging is delivered as intended. The next step in the process is sending a group email to the RN team with an introduction, rationale, instructions, and guidelines for the new process. The Director of Nursing will then meet one-on-

one with the nursing staff on different shifts shortly after the introductory email is sent, and will also present the new information during regular staff meetings. The nursing staff are given the opportunity to ask questions and communicate their feedback about the new process.

This *Additional Staffing Request* document is completed by the charge RN on the floor when additional nursing staff is needed, and the reasons supporting the request is documented on the form. The documentation is then reviewed by hospital management and entered into a spreadsheet for tracking purposes. This objective information assists management in identifying possible trends, tracking additional staffing requests by individual nurses, and potentially identifying unanticipated issues that are creating staffing and workload challenges. Garrett (2008) asserts that data on nurse staffing levels and patient-sensitive outcomes may help hospital administrators anticipate which units need higher staffing levels, and at what times of the day. Garret (2008) also suggests that this data may be useful in developing staffing patterns that are linked to quality. Nursing management will review these individual reports with the front-line nursing staff involved in an attempt to learn from the experiences and improve overall quality of care on the units. This teamwork supports effective communication through the use of objective data, and serves to improve overall staffing and the delivery of high-quality patient care. This information can also be shared during LMC meetings to encourage stakeholders to base their opinions and discussions on objective data.

The use of the *Position Control, Patient Census,* and *Additional Staffing Request* documents helps to support the best practices of data collection, effective communication, information sharing, nursing leadership, discussion on patient acuity and case mix, and document creation. Effective utilization and follow up with these documents supports the goal of an effective comprehensive nurse staffing plans for CAHs.

Challenges to Implementation

Creation of the new data collection documents was relatively easy, and the documents can be easily modified for different CAHs. However, nursing compliance with thorough and accurate completion of the *Additional Staffing Request* document is expected to be an ongoing challenge with this project. Issues related to nurse compliance with completion of this tool are addressed on a one-on-one basis by the Director of Nursing at Lake View. The management team responsible for nursing oversight (Administrator, Director of Nursing, and the Administrator on call team) reviews the *Additional Staffing Request* documents in relation to the core staffing levels on a weekly basis. The need for core staffing adjustments is discussed, and feedback from the staff nurses is considered. The use of callbacks and overtime are reviewed in relation to the completed documents. Care will be taken by the management team to avoid second-guessing the decisions made by the nursing team to avoid conflict, but the nurses are held accountable for their decisions. Lake View management follows up and documents the findings for each *Additional Staffing Request* document that is completed by nursing staff. The Director of Nursing then emails a summary of the findings to the charge nurse responsible for completing the document when calling in additional staff.

Overtime is also managed in a different manner as a result of the implementation of this project. Nursing staff are required to seek pre-approval for any overtime incurred at Lake View Hospital moving forward. The specific reason for the overtime request must be documented to assist with identifying trends such as the day, time, or shift frequently requiring overtime. The identification of these trends may uncover other systemic issues that can be addressed to reduce or eliminate the overtime incurred. This overtime pre-approval is granted by the Director of Nursing, Assistant Director of Nursing, Administrator, or a member of the Administrator on call

team. Overtime not approved before it is actually worked is handled through the hospital's policies and in accordance with the collective bargaining agreement with the MNA.

Access to information. The monthly Employee Forums were implemented, but attendance by the RN group is lower than other departments due to their 24 hour shift work and previous levels of engagement. A monthly email with a summary of the data presented at the Employee Forum is sent to all employees in the organization to ensure that everyone has equal access to the information presented. Nursing staff who cannot attend the Employee Forums in person due to work schedules, on call responsibilities, or travel challenges are given access to the information identified in this project. The management team also considered videotaping the Employee Forums and putting the link on the organization's intranet to allow nurses to access the information at their convenience. Monthly patient statistics, monthly financials and year-to-date budget information, quality data, patient satisfaction data, current and planned organizational initiatives, strategic plan updates, and health care reform topics are all addressed during the Employee Forums. Relevant information on patient volumes and census, patient satisfaction data, monthly financials, quality reporting data, and organizational initiatives should be appreciated by nursing staff working in a CAH. This objective data helps to support productive and transparent dialogue between hospital management and the front-line nursing staff.

Resistance to change. As with most significant change or implementation of a new process in an organization, some resistance to change is expected from the nursing staff, nursing union, and nursing management. The processes outlined in this project will increase accountability of the individual nurses, as well as the Director of Nursing. More documentation, one-on-one discussions, and follow-up are required to comply with the new processes outlined in

the project. Historically, some conflict has emerged between the nurses and their manager in relation to the staffing request document follow up. This conflict also has occurred during the LMC meetings, monthly staff meetings, and during the individual meetings between management and nursing staff. Given the significance of this proposed plan of change, it is reasonable to assume that there may be significant resistance that will need to be addressed as part of this implementation. This conflict can be minimized by both parties engaging in professional and respectful communication, collaborative problem-solving, and transparent discussion.

The resistance among nursing staff can be effectively managed by consistent, thorough and timely follow up on the staffing request documents. Treating the RNs as respected professionals integral to the delivery of patient care at Lake View supports collaboration during this project. A transformational leadership style from hospital administration supports successful implementation and progress moving forward. Conflict and disagreements are addressed in a timely manner and open and professional dialogue is the goal. An outside consultant for organizational development is also considered as one strategy to address problems related to labor/management conflicts that are not able to be addressed internally as the project moves forward.

Employee handbook. The overall resistance to change was addressed by Lake View Hospital's leadership team and its commitment to educating all staff on the organization's Mission, Vision, Values, Service Excellence Expectations, and Code of Conduct. This important information wasn't always readily available to the hospital's employees, nor was it consistently presented to the employees and reinforced by the leadership team. An updated Lake View Employee Handbook was completed and distributed to all employees in both paper and

electronic format. All employees were assigned mandatory review of the employee handbook, and were required to sign off that they reviewed it.

Accountability and employee discipline. Nursing staff (and all other staff at Lake View) were presented with clear expectations for behavior as outlined in the employee handbook. The leadership team implemented a fair, consistent, and structured process for holding staff and each other accountable for the behaviors outlined in the Lake View Code of Conduct. Disrespectful, unprofessional, and inappropriate behavior was managed in an effective manner and will continue to be managed as the project moves forward. Teamwork, respect, integrity, leadership, and commitment to patients are the behaviors demonstrated by the leadership team every day, and these behaviors are encouraged from the employees and physicians as well. Positive reinforcement and recognition from the leadership team takes place every time the desired behaviors are observed from employees at Lake View.

Evaluating Success

The success of this project will be measured in a variety of ways. The seven best practices identified in this project and the desired outcomes are communicated to Lake View's leadership team, nursing staff, and nursing union to promote collaboration and effective problem-solving between the stakeholders. The challenging issue of nurse staffing is added as an agenda item for the monthly Labor Management Committee meeting agendas. Discussion between the MNA business agent, Lake View union stewards, Human Resources Director, Director of Nursing, and Administrator is focused on the desired outcomes for this project. The outcomes discussed include the effectiveness of information sharing, nursing compliance with completion of the staffing request documents, management follow up on the staffing request

documents, effectiveness of the recruiting and hiring plan, and management of overtime per policy.

The issue of nurse staffing is a separate agenda item for the monthly nurse staff meetings, as well as an agenda item for the individual meetings between management and individual RNs. Feedback is solicited from the nursing staff on the topic of nurse staffing levels and the information is documented during each of these meetings. Specific concerns or problems are discussed with feedback and suggestions considered from both management and front-line nursing staff. Minutes of each meeting are distributed to the nursing team for review and clarification. The Director of Nursing will follow up with each individual nurse on his or her suggestion or idea to close the communication loop. This follow up helps to promote and support engagement by the nursing staff. Suggestions or ideas from individual nurses that are implemented at Lake View to support the best practices of nurse staffing and an effective comprehensive nurse staffing plan will be recognized by management.

Leadership team discussion. The scope of the project is presented to the hospital leadership team for initial discussion and feedback. The topic of nurse staffing is now listed as an agenda item for each monthly leadership team meeting, and the completed documents outlined in this project are reviewed by the team. Feedback on the issue of nurse staffing is also solicited from the Administrator on call each week so that any concerns or issues can be addressed in a timely manner. The completed *Patient Census* documents and *Additional Staffing Request* documents are reviewed by the management team and then filed into a binder for future reference. The goal is to include patient census information in the binder for every day of the month, and review of all of the completed *Additional Staffing Documents* completed by nursing staff.

Days with high inpatient census and shifts with unanticipated high emergency department volumes are cross-referenced with core staffing levels and nursing requests for additional staffing. Shifts that have had additional nursing staff scheduled by management are analyzed to determine if the additional staff was adequate, or if additional staff still needed to be called in to meet patient care demand. Trends are identified, and patterns of nurse staffing to patient demand are documented to assist with future staffing situations at Lake View. Situations when additional staffing should have been scheduled for the unit but was not are identified and documented. The overall outcome is the development of a comprehensive nurse staffing plan that provides management the opportunity to staff up in anticipation of expected increases in patient census such as new swing bed admissions. This comprehensive staffing plan also provides nursing staff with an established process and opportunity to call in additional nursing staff to meet unanticipated patient census or patient volumes.

Metrics evaluated. The success of this project is measured by tracking three specific metrics. The first metric measured is the total overtime worked by all RN staff during each pay period and totaled for each quarter of the fiscal year. This overtime is further evaluated at the department and individual nurse level. Garrett (2008) states that hospital administrators often rely on the use of mandatory or voluntary overtime to cover staff nurse vacancies, and this practice can lead to nursing staff fatigue, adverse patient outcomes, and increased nurse burnout. The total department and individual nurse overtime hours worked per quarter are compared to the same quarter from the previous year to adequately account for seasonal volume trends like the summer months and holidays. The total overtime hours worked in the quarter are also compared as a percentage of total regular RN hours worked to promote valid comparison of the data. Berney, Needleman and Kovner (2005) assert that year to year variations in hospital

occupancy, margin, RN staffing levels, RN wages, and hours in a standard RN work week might influence annual overtime worked in individual hospitals.

The overtime hours worked per quarter are also adjusted for the average daily census in the ER and inpatient units taken from the *Patient Statistics* document. Berney et al. (2005) also contend that hospitals use overtime as a result of being chronically short-staffed, to handle normal variations in patient census and acuity, or to cover staff vacancies. Without significant unexpected changes in RN retention, total overtime hours worked each quarter is expected to decrease as compared to the same period in the previous year as a result of this project. Nurse overtime can have either positive or negative consequences on key stakeholders including nurses, hospitals, and patients (Lobo, Fisher, Ploeg, Peachey, & Akhtar-Danesh, 2013). Caruso et al. (as cited by Lobo et al., 2006) observes that mandatory overtime can be tiring, stressful, and disruptive. Monitoring and working to reduce mandatory overtime with this project is an important outcome for Lake View Hospital and the nursing staff.

The second metric measured in this project is nurse turnover ratio at Lake View Hospital. Nursing turnover is very expensive for a hospital in terms of recruiting, hiring, and training new nurses. Jones and Gates (2007) suggest that the estimated costs of general turnover range between 0.75 to 2.0 times the salary of the leaving employee, and turnover costs for nursing are estimated at 1.3 times the salary of the departing nurse. Jones and Gates (2007) also assert that the benefits of nurse retention include patient safety, quality of care, patient satisfaction, nurse satisfaction, and nurse safety. The turnover rate at Lake View is compared to the historical turnover rate before implementation of this project, as well as to the CAH industry standard. Maintaining an adequate pool of nurses is expected to decrease the turnover rate at Lake View by decreasing unwanted mandated work shifts and mandated call shifts previously required to fill

schedule gaps. Jones and Gates (2007) suggest that strategies to retain nurses include transforming the work environment by providing strong top-level nursing leadership, involving nurses in decision-making related to patient care delivery, limiting nurses' work hours, and ensuring safe staffing levels.

The third metric tracked is the total expenses related to nurse recruitment, such as advertising, human resources time, and posting positions. This information is tracked and compared with historical costs prior to implementation of the project. In addition, the expenses related to interviewing, offering positions, and completing new hire requirements (background checks and pre-employment physicals) are also tracked and compared to historical periods before implementation of this project. Baernholdt and Mark (2009) suggest that hospitals can save a significant amount of money with modest decreases in nursing turnover because the costs of recruitment and training for new hires ranges from $82,000 for an experienced RN to $88,000 for a new RN. Expenses incurred for new nurse orientation are carefully measured and compared to total orientation expenses before the project's implementation. Careful measurement of these metrics will assist administration in monitoring the financial impact of the project on the CAH. An Excel tool *Cost of Turnover Calculator* is utilized in this project to track the costs associated with RN turnover and this tool is included in Appendix F (D. Lucia, personal communication, April 11, 2015).

Labor management committee meetings. The topic of nurse staffing is added as a standing agenda item for the scheduled LMC meetings each month. Hospital management will strive for respectful and collaborative discussion with the hospital's nursing union stewards, front-line nursing staff, and the Minnesota Nurse's Association's business agent. Both sides are given an opportunity to discuss any concerns related to the nurse staffing levels in Lake View's

emergency department and inpatient hospital unit over the past month. The census data and staffing request documents are also shared for review and discussion during this meeting. Collaboration and discussion between the stakeholders will attempt to address and resolve any outstanding concerns. Detailed notes are taken during each monthly meeting to document ongoing progress and success.

This comprehensive project requires a collaborative approach, and trust between management and the nurses is of significant importance. Unresolved conflict or issues must be managed appropriately, and consideration for labor management team building could be considered if the need arises. This could be accomplished by bringing in the Federal Mediation & Conciliation Service (FMCS) for a one or two day workshop. This workshop would set clear behavior commitments between the hospital management team and hospital nursing staff. This approach is suggested if the project encounters resistance or barriers during the implementation process, or while trying to sustain the project.

A survey assessing the level of satisfaction with various aspects of the project such as communication between parties, decision-making related to staffing adjustments, and engagement by the nurses, union, and management team is an important consideration. This type of survey is administered at regular intervals throughout the project to monitor progress. If significant concerns or issues are identified in the survey data, the appropriate intervention can be further evaluated and implemented.

RN staff meetings. The Director of Nursing will present the best practices for nurse staffing in a CAH to the RNs during the monthly staff meetings. Education and training related to completion of the *Additional Staffing Request* documents is delivered to the nursing staff. Clear expectations are outlined for completion and submission of the staffing request documents.

Discussion on planned follow-up for the completed forms is also completed by the Director of Nursing and presented to the RNs during the staff meetings. The Director of Nursing performs follow up on 100% of the completed *Additional Staffing Request* documents and this metric is measured by the Administrator each month. The Director of Nursing will provide the Administrator with meeting minutes after each monthly meeting.

Individual RN meetings. Lake View's Administrator and Director of Nursing offer individual nurses the opportunity to meet to discuss ideas, suggestions, and feedback related to his or her position at the hospital. Nurse staffing levels are one agenda item included during these voluntary meetings. These meetings also give hospital administration the ability to discuss educational opportunities with the nurses on an ongoing basis.

Continuing education courses are specifically outlined in the collective bargaining unit between Lake View Hospital and the MNA. Lake View's RNs have two paid days of continuing education available to them, but all of the RNs at Lake View do not take advantage of this opportunity. The individual meetings with the RNs will encourage the nursing staff to schedule and attend the additional courses to improve their skill mix with the goal of improving patient outcomes. Documentation is completed during each of these meetings, and the results are compared to the results from the previous meeting to evaluate follow through. The individual nurses are asked for their opinions on the current nurse staffing plan, and this information is recorded.

Limitations

This project does not provide in-depth details or discussion on the use of patient acuity tools to be utilized for nurse staffing in a critical access hospital. The project promotes the use of a nurse staffing plan as one of the best practices related to nurse staffing. The effective utilization

of the comprehensive nurse staffing plan requires independent decisions to be made by front-line nurses after normal business hours when management is out of the building. This process requires effective subjective and objective decision-making by nursing staff, which can vary between different RNs. The role and expectations of the charge nurse in this process has not been clearly identified. The leadership styles of the hospital management team (Administrator, Director of Nursing, Assistant Director of Nursing) could also be a limitation with this project. Engagement of the hospital's nursing staff and nursing union could also be significant barriers to the implementation of this project and could negatively impact the desired and measurable outcomes.

Subjective and objective decision-making. A significant limitation with this project is the subjective and objective decision-making that must occur when the charge nurse decides to flex up the core staffing level by calling in additional staff. The nurse must complete the census portion of the *Additional Staffing Request* document using objective data, but then must utilize professional judgment and subjective decision-making when deciding to request additional staff. Management would not be involved in this process if it occurs after regular business hours, and would only become involved during the retrospective review and follow-up. The experience level, skill mix, commitment to the project, and comfort level of the RN could impact the subjective decision-making related to calling in additional staff. The work ethic of the RN and other factors related to financial incentives for RNs could also come into play if the nurse staffing plan were to be manipulated. A nurse could potentially manipulate the system to call in another nurse who was interested in working additional hours or overtime when not previously scheduled. The best practices and nurse staffing plan presented in this project require the sound professional judgment of the nursing staff, as well as the hospital management team.

Various metrics related to the nurses' decisions to call in additional staff above the core staffing level must be tracked. Call back hours actually worked while on call and RN overtime are tracked during each two-week pay period. Call back hours are the number of hours the RN actually works when called in to work while being paid to be on call during a particular shift. The collective bargaining contract at Lake View requires the hospital to pay RNs a minimum of 4 hours when called in to work. Overtime and call back hours worked after implementation of this project are measured and compared to pay periods from the previous year. Sound judgment and decision-making by the nurses will support the outcomes of appropriate nurse staffing while minimizing significant financial burdens on the organization.

Difficulty with relying on the numbers. The *Additional Staffing Request* document records specific numbers of patients in the emergency room, urgent care, and in the hospital at the time of the staffing request. Nurse staffing decisions in CAHs cannot be solely based on the numbers of patients or simply on the ratio of nurses to patients. Misinterpretation of the best practices presented in this project could give nurses the impression that staffing should be flexed up whenever the census hits a certain target (e.g. 12 inpatients). This additional staff may not be warranted when the individual acuity of the current patients are analyzed, along with the careful consideration of many other important staffing decision variables (Appendix A). Each individual decision and request for additional staffing must be considered and analyzed with appropriate supporting documentation.

Style of nursing leadership. This project also focuses on effective nursing leadership as one of the best practices and suggests that a more transformational leadership is the best approach. The project assumes that the leaders currently draw from transformational leadership styles already or are interested in working toward developing a more transformational leadership

style. A limitation of this project is that it does not adequately address the problem of a transactional leader in key positions in the CAH.

Level of nursing staff and union engagement. Engagement from the front-line nursing staff and the nursing union is must be present to achieve the desired outcomes of the project. The hospital management team must effectively monitor nursing staff engagement before, during, and after the implementation of the project. Issues with engagement must be identified and effectively addressed as soon as possible to keep making progress toward the project goals. This engagement is accomplished by being clear and transparent about the project's methods, goals, challenges, and desired outcomes from the start of the process.

Involving the nursing union in communication upfront, as well as providing timely updates during the process, helps to support engagement and collaboration. Addressing concerns with timely response to emails and phone calls supports teamwork and trust between the two parties. Consideration and appreciation for the nurses' and the union's goals also supports engagement. This project does not include a survey measuring nursing staff and union engagement before and after the implementation of the best practices for nurse staffing in a CAH.

Possible Future Research

More research is needed to determine the correlation between nurse staffing levels and overall patient outcomes. The correlation between the educational level of nurses and patient outcomes would also benefit from additional research. Cramer and Jones (2011) assert that RNs with a higher formal education have fewer errors and improve safety and quality for their patients. This may be an area that CAHs could focus on to improve the quality of patient care delivered in the organization. More conclusive research would help to determine the optimal

level of nurse education preferred for different departments in a CAH. More research on this topic could support a CAH's strategy to invest in additional educational training for its current nurses, instead of simply hiring and staffing more nurses in an attempt to improve patient outcomes. A project of this nature could contribute to that thought body of evidence.

Additional research is also needed related to different and new options for hospital reimbursement for additional nurse staffing. The inpatient nursing intensity billing and reimbursement model has been proposed at the national level to correct the inherent problem of treating nursing care as a fixed cost (Welton, 2007). More research needs to be conducted on this model because it is not the panacea that will immediately resolve the conditions at the hospitals with the highest nursing workload (Welton, 2007). Welton also suggests that the nursing intensity billing model provides much more flexibility in matching nursing resources with hospital reimbursement than does mandated nurse-to-patient staffing ratios. Reimbursement for additional nursing resources could take significant financial pressures off of hospitals, and the third party payers may be willing to pay the additional costs if the research supported better outcomes.

More extensive research on best practices for nurse staffing in critical access hospitals would be very beneficial for all stakeholders involved. Benchmarks for various best practices for nurse staffing in CAHs could be achieved with future research. Cramer and Jones (2011) suggest that little is known about nurse staffing in CAHs due to their unique work environment where limited number of personnel perform multiple tasks. Stanton (2004) assert that more accurate and consistent measures of acuity and quality, as well as more complete data on all types of nursing personnel needed to explain the correlation between nurse staffing and quality of care. Benchmarks for the current level of skill and experience of the nursing team could be

established with future research. Certifications, special training and skills, and experience level could be determined and correlated with patient outcomes in CAHs. Significant opportunity exists for future research on nurse staffing and patient outcomes in CAHs.

Conclusion

The primary issue remains the delivery of safe, high-quality, and cost-effective patient care. It is the premise of this project that these outcomes may be significantly impacted if nurses, administrators, financial leaders, and politicians work together and respect each other's point of view to bring resolution to this complex problem (Hertel, 2012). Literature provides significant support that mandatory nurse-to-patient ratios may not be the answer to nurse staffing challenges in a CAH. Mandatory nurse-to-patient ratios will change an organization and the delivery of nursing care, and are difficult to withdraw once they are in effect. Therefore, RNs and policy makers should carefully think through implications to hospitals and payment regulations (Buerhaus, 2009). Mandatory staffing legislation remains controversial, and could actually be harmful to critical access hospitals (Cramer, 2011). Cramer asserts that a one-size-fits-all regulation would reduce a CAHs ability to adapt to the changing demands of patient care and could cause the hospital to ignore key economic and labor conditions.

The seven best practices for nurse staffing in CAHs presented in this study should be considered and implemented to promote safe and high-quality patient care. These seven best practices for nurse staffing in a CAH are:

1. Effective communication between hospital management and nursing staff;
2. Formal information sharing;
3. Effective nursing leadership;
4. Open and collaborative discussion on patient acuity and case mix;

5. Educational opportunities for nurses;
6. Creation of data collection and decision-making tools; and
7. Establishment of a comprehensive nurse staffing plan.

These seven best practices form the foundation of this project and the development of the formal nurse staffing plan.

Outcomes. The desired outcomes of this project are the identification and establishment of best practices for nurse staffing in a Critical Access Hospital that will also maintain or improve quality of care throughout the development of a comprehensive nurse staffing plan for Lake View Hospital. The best practices must be effectively communicated between hospital management, the hospital's nursing staff, and the union representing the nurses. All parties must be engaged in the project and support the implementation and maintenance of the process to achieve success. Input and teamwork from hospital management and the front-line nursing staff at the bedside must be encouraged to promote efficient and effective nurse staffing in a CAH. The professional judgment and experience of the nurses on the unit must be considered in this nurse staffing plan.

Goals. The primary goal of the project is effective and efficient nurse staffing in the hospital unit and emergency department to promote positive patient outcomes and a positive patient experience at Lake View Hospital. Appropriate nurse staffing levels help to prevent nursing burnout and turnover, as well as maintain long-term retention of nurses. Another important goal of the project is the establishment of a financially responsible nurse staffing plan that will help to reduce the costs of care delivery in the CAH. This plan may help to promote the long-term viability of the CAH in the community. Another important goal of this project is to promote improvement in the overall quality of care delivered in the CAH. The Triple Aim

Initiative in health care aims to increase the patient experience of care for both quality and satisfaction, reduce the per capita costs of health care, and improve the health of the population. The goals of this project directly support the dimensions identified in the Triple Aim Initiative within health care reform.

There are many challenges facing Critical Access Hospitals in this era of health care reform, and nurse staffing is one of the most significant challenges. Nurse staffing is a complex issue that will require collaboration and effective communication among all stakeholders to achieve the ultimate goal of high-quality and safe patient care delivery. This high-quality and safe patient care delivery must also be delivered in a fiscally responsible manner to ensure the hospital can maintain a positive operating margin into the future. Mandated nurse-to-patient ratios have been proposed by the National Nurses United (NNU) and Minnesota Nurses Association (MNA) as one potential solution to address the issue of nurse staffing in Minnesota hospitals. Mandated nurse-to-patient ratios could jeopardize the future of CAHs, and may not be the most effective approach to address this complex issue. This project presents an alternative approach by introducing seven best practices for nurse staffing in a CAH, including the development of a comprehensive nurse staffing plan to support high-quality and safe patient care delivery. A research-supported conceptual model is introduced, as well as recommendations for implementation. Challenges faced during implementation and suggestions for future research are also included. Collaboration, teamwork, respect, problem-solving, and effective communication between all stakeholders is proposed and integrated as a more effective practice model than mandated nurse-to-patient ratios for nurse staffing in a CAH.

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Appendix A: Decision Staffing Variables

1. Number of patients
2. Range of conditions
3. Intensity of situation
4. Severity of illness
5. Stage of illness
6. Family/situation needs
7. Safety
8. Quality
9. Educational requirements
10. Treatment requirements
11. Observation and intervention requirements
12. Admissions, discharges, and transfers
13. Number or RNs
14. Number and skill mix of staff
15. Experience level of staff
16. Special credential requirements
17. Continuity of care
18. Role and skill competence
19. Fatigue considerations
20. Setting/environment
21. Physical plant
22. Working conditions
23. Cultural influence
24. Team dynamics
25. Individual nurse (staff dynamics)
26. Patient satisfaction
27. Nurse satisfaction
28. Ancillary and support staff availability
29. Physician preferences
30. Variations in technology
31. Policies and procedure requirements
32. Legislative and regulatory requirements
33. Safety considerations
34. Quality considerations
35. Budget considerations
36. Performance pressures (scorecards, benchmarks, and variances)

Source: Douglas, 2010, p. 7

Appendix B: Best Practices for Nurse Staffing in a CAH

I. Effective communication between hospital administration and nursing staff
   a. Labor management committee meetings
   b. Email communication process
      1. Nursing's communication obligation
      2. Management's communication obligation
   c. Scheduled meetings between management and individual nurses
   d. Formal memos

II. Formal information sharing through Employee Forums
   a. Monthly patient statistics
   b. Monthly financials and annual budget
   c. Quality and other reporting data
   d. Patient satisfaction data
   e. Current and planned organizational initiatives
   f. Update of the strategic plan
   g. Relevant update related to health care reform

III. Effective nursing leadership
   a. Nurse staff meetings
   b. Performance evaluations and goals for nursing staff
   c. Leadership training

IV. Open and collaborative discussion on patient acuity and case mix
   a. Multi-disciplinary rounding team

V. Providing educational opportunities for nurses
   a. Education and training at nurse staff meetings
      1. Customer service training
      2. Training on mental health patient management

VI. Data collection and decision-making documents to assist with staffing
   a. *Position control*
   b. *Patient census*
   c. *Additional staffing request*

VII. Establishment of a comprehensive nurse staffing plan
   a. Effective communication
   b. Formal information sharing
   c. Effective nursing leadership
   d. Open and collaborative discussion on acuity and case mix
   e. Educational opportunities for nurses
   f. Data collection and decision-making documents

Appendix C: Position Control

				Scheduled			Scheduled			Scheduled			Scheduled			Scheduled			Total Shifts		FTE
Position Control LVH				Weekdays			Weekend-1			Weekend-2			Weekend-3			Weekend-4					
Name	Hired FTE	Weekend	Rotation	D	E	N	D	E	N	D	E	N	D	E	N	D			8 Hour	Hours	# Shifts FTE
RN Scheduled 8 Hour																					
RN 1	1.00	2.00	D/E	16.00						2.00						2.00			20.00	160.00	1.00
RN 2	1.00	2.00	D/E	4.00	2.00			1.00		2.00				1.00		2.00			12.00	96.00	1.00
RN 3	1.00	2.00	E/N	12.00			2.00						2.00						16.00	128.00	1.00
RN 4	1.00	2.00	E/N	8.00			2.00								2.00				12.00	96.00	1.00
RN 5	0.80	2.00	D/N			16.00						2.00				2.00			20.00	160.00	0.80
RN 6	0.80	2.00	D/N	6.00		6.00	2.00								2.00				16.00	128.00	0.80
RN 7	0.80	2.00	D/E		0.00						2.00						2.00		4.00	32.00	0.80
RN 8	0.80	2.00	D/E		6.00						3.00						3.00		12.00	96.00	0.80
RN 9	0.80	2.00	E/N		4.00	4.00		2.00						2.00					12.00	96.00	0.80
RN 10	0.60	1.00	D/E					2.00						2.00					4.00	32.00	0.60
RN 11	0.60	1.00	E/N		6.00	4.00			3.00						3.00				16.00	128.00	0.60
RN 12	0.60	1.00	D/N									2.00						2.00	4.00	32.00	0.60
RN 13	0.60	1.00	E/N		6.00	6.00			2.00					2.00					16.00	128.00	0.60
RN 14	0.40	1.00	E/N		6.00	6.00						2.00						2.00	16.00	128.00	0.40
RN 15	0.40	1.00	E		12.00			2.00						2.00					16.00	128.00	0.40
RN 16	casual		D/E/N			5.00							1.00					2.00	8.00	64.00	casual
RN 17	casual		D/E/N	5.00					1.00				2.00						8.00	64.00	casual
	11.20			51.00	42.00	47.00	6.00	7.00	6.00	4.00	5.00	6.00	5.00	9.00	7.00	6.00	5.00	6.00	212.00	1696.00	11.20

Appendix D: Patient Statistics

		Emergency Room & Urgent Care			Acute, Swing, Transitional, Respite & Observation					
Dates	Day of Week	Total # Urgent Care	Total # Emerg Room	Daily Total	Acute Daily Census	Swing Daily Census	Transitional Daily Census	Respite Daily Census	Observ Daily Census	Total Daily Census
1-Feb	Sun	1	3	5	1	3	-		-	4
2-Feb	Mon	2	4	6	2	4	-		-	6
3-Feb	Tue	1	3	5	1	3	-		-	4
4-Feb	Wed	2	3	6	2	4	-		-	6
5-Feb	Thu	1	4	5	1	3	-		1	5
6-Feb	Fri	2	3	6	2	4	1		1	8
7-Feb	Sat	1	4	5	1	3	1		-	8
8-Feb	Sun	2	3	6	2	4	-		-	5
9-Feb	Mon	1	4	5	1	3	-		2	6
10-Feb	Tue	2	3	6	2	4	-		1	6
11-Feb	Wed	1	4	5	1	3	-		1	5
12-Feb	Thu	2	3	6	2	4	-		1	7
13-Feb	Fri	1	4	5	1	3	-		-	4
14-Feb	Sat	2	3	6	2	4	-		-	6
15-Feb	Sun	1	4	5	1	3	1		-	5
16-Feb	Mon	2	3	6	2	4	1		-	7
17-Feb	Tue	1	4	5	1	3	-		1	5
18-Feb	Wed	2	3	6	2	4	-	1	1	8
19-Feb	Thu	1	4	5	1	3	-	1	1	6
20-Feb	Fri	2	3	6	2	4	-	1	1	8
21-Feb	Sat	1	4	5	1	3	1		-	5
22-Feb	Sun	2	3	6	2	4	-		-	6
23-Feb	Mon	1	4	5	1	3	-		-	4
24-Feb	Tue	2	3	6	2	4	-		-	6
25-Feb	Wed	1	4	5	1	3	-		-	4
26-Feb	Thu	2	3	6	2	4	-		-	6
27-Feb	Fri	1	4	5	1	3	-		1	5
28-Feb	Sat	2	3	6	2	4	-		-	6
				-						-
				-						-
				-						-
		42	**97**	**154**	**42**	**98**	**5**	**3**	**12**	**161**
Avg per day		**2.80**	**6.47**	**10.27**	**2.80**	**6.53**	**0.33**	**0.20**	**0.80**	**10.73**

Appendix E: Additional Staffing Request

Date:_____ RN Requesting Additional Staff:_____

Admin on Call:_____ Time Call Received:_____

Current Census

Acute: 1 2 3 4 5 6 7 8 9 10 Swing: 1 2 3 4 5 6 7 8 9 10

Observation: 1 2 3 4 5 6 7 8 9 10 Respite: 1 2 3 4 5 6 7 8 9 10

Urgent Care: 1 2 3 4 5 6 7 8 9 10 ER: 1 2 3 4 5 6 7 8 9 10

Current Hospital / ED Staffing

RNs: 1 2 3 HUC: Yes or No CNA: 1 2 3

MA: Yes or No On Call RN Called in: Yes or No

Additional Staff Requested

RN CNA HUC MA

Reasons_____

_____

_____

_____

Follow-Up Completed

_____

_____

_____

_____

Appendix F: Cost of Turnover Calculator

COST OF TURNOVER CALCULATOR

Position: RN

Cost to Advertise the Position	
Advertising fees (job boards, newspapers, purchased lists, etc)	$5,000
Number of positions associated with advertising fees	10
Search Firm Fees	
Percentage of Salary Charged	0%
Administrative Staff Hours Involved in Identifying Candidates	
Hours Involved:	10
Numbers hired:	1
Average Salary of Staff Involved:	$30,000
Cost to Interview	
No. of Candidates Interviewed:	5
Numbers hired:	1
Average Salary of Interviewer:	$100,000
Productivity Losses	
Salary of position:	$55,000
Average time (in days) to replace:	60
Pre-Employment Hiring Costs	
Total relocation costs (if any):	$0
Loan forgiveness	$0
Recruitment/sign-on bonuses	$0
Employee referral cash awards	$1,500
Pre-employment checks and screens	$80
Number of RCs conducted	2
Reference Checking (RC) Cost	$10
Assessments/Skill (A/S) Testing*	$40
Number of A/S tests conducted	0
Enter State	Minnesota
Number of BCs conducted	2
Background Checking (BC) Cost	$25
Number of DS tests conducted	2
Drug Screening (DS) Cost	$5
Training Costs	
Number of Days to train:	15
Average Salary of Trainer:	$55,000
COST OF TURNOVER:	$10,158 18.5%

Enter data using drop down box

Enter data into cell

Calculation cell. Enter no data.