

WHITE PAPER

ON

NURSE STAFFING LEVELS FOR PATIENT SAFETY AND WORKFORCE SAFETY

This paper has been developed on the occasion of the 4th Global Ministerial Patient Safety Summit, 2019 in collaboration with the International Council of Nurses (ICN) in recognition of the crucial role of the Nurse to Patient Safety. It is based on the ICN Position Statement on Evidence-based safe nurse staffing and ICN Position Statement on Patient Safety.

This paper is dedicated to each and every nurse that commits fully to ensure the safety of their patients and the well-being of their colleagues.



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Acknowledgments

The Saudi Patient Safety Center (SPSC) and the International Council of Nurses (ICN) would like to acknowledge and express gratitude to the Saudi Commission for Health Specialties (SCFHS) for its strong support to this white paper that addresses the core issue in patient safety. With the endorsement of the SCFHS, the guidelines and recommendations presented in the paper will serve as a safety net for both patients and nurses.

SPSC and ICN also express their gratitude to the Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) for endorsing this paper and addressing the issue of safe staffing within their standards of accreditation. CBAHI plays a key role in holding healthcare organizations accountable to optimal levels of safe operation and the White paper serves as a tool to help implement these standards.

This paper was reviewed by a group of nurse leaders who shared their knowledge and expertise, informed by evidence and years of experience on the ground, who ensured that the recommendations are practical to every-day operations. These are: Ms. Mawahib S Wang (Chief of Nursing Affairs, Clinical Excellence, Eastern (E1) Cluster), Dr. Jessica Colquhoun (Executive Director, Clinical operations Nursing, Eastern (E1) Cluster), Dr. Abdiquani Qasim (Nurse Consultant, King Fahad Medical City), Dr. Elham A. Al-Ateeq (Executive Director of Quality & Professional Development, Eastern (E1) Cluster) and Dr. Hasan Kamal Al-Omran (Assistant Professor, College of Nursing, Imam Abdulrahman Bin Fathi sal University).

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A SPSC and ICN RESOURCE

About the Saudi Patient Safety Center¹

The Saudi Patient Safety Center's mission is to eliminate preventable harm in the Saudi healthcare system by empowering patients and supporting healthcare professionals, through building capacity, partnering with all stakeholders, i.e., regulators, healthcare providers, patients and their families in developing national policies, creating evidence-based guidelines and executing and implementing programs.

About the International Council of Nurses (ICN)²

The International Council of Nurses (ICN) is a federation of more than 130 national nurses' associations (NNAs), representing the more than 20 million nurses worldwide. Founded in 1899, ICN is the world's first and widest reaching international organization for health professionals. Operated by nurses and leading nurses internationally, ICN works to ensure quality nursing care for all, sound health policies globally, the advancement of nursing knowledge, and the presence worldwide of a respected nursing profession and a competent and satisfied nursing workforce.

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FOREWORD

Over 150 years ago Florence Nightingale conducted the first research on nursing outcomes. She believed that highly trained nurses make the difference in creating a **safe** care environment that vastly improves patient outcomes in hospitals. Since the modern era of Nursing, the evidence supporting the need for proper nurse staffing ratios to ensure the safety of patients hasn't stop accumulating.

The need for writing this report is not just to assure patient safety but goes beyond that to guarantee nursing staff safety as well.

Throughout this report, the Saudi Patient Safety Center recognizes the important, if not, vital role of nurses from all levels of care to meet a sustainable, universal and equally central, SAFE healthcare for all.

In collaboration with the International Council of Nurses (ICN), this report presents facts that serve as the backbone for an urgent call for action from policymakers related to Nursing Workforce planning and that will lead the way to resolution on patient safety issues. Hence, countries that strive to meet safe nurse staffing ratios will ensure the safety of their patients and nurses.

It is our position that the need to improve nurse staffing ratios is not just a Saudi Arabian specific necessity but a global one, so while this white paper is a product from Saudi Arabia to the world, our goal is to bring together global stakeholders that will help deliver the overall vision of achieving universal health coverage free of harm.

The Saudi Patient Safety Center is honored to have developed this report in collaboration with the International Council of Nurses, whose mission passes by promoting the wellbeing of nurses and advocate for health.

Safe nurse staffing ratios is not only a call from healthcare professionals to executive leaders and national decision-makers. It's a call from the population we are ought to serve. Safe healthcare delivery and thus, nurse staffing *safe* levels becomes in this way a fundamental patient right.



Dr. Abdulelah Alhawsawi
Director General
Saudi Patient Safety Center

For many years, evidence has been growing about the importance of having adequate numbers of appropriately trained nurses. Now that evidence is overwhelming and compelling: there is a clear relationship between nurse staffing levels and patient safety and quality of care. And where there are appropriate staffing levels, nurses' wellbeing is also improved, because patient safety and nurses' wellbeing are two sides of the same coin.

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This report brings together evidence from a wide range of sources, covering different countries and contexts, but the results are remarkably consistent. It provides a powerful message for policy makers around the globe that having the right numbers of nurses, in the right place and at the right time, delivers quality and safety for the populations they serve, and will help to retain nurses. In addition, policy makers should heed the message that having safe staffing levels is also the most cost-effective approach to bringing about improvements in patient safety and quality of care.

At ICN we see nurse staffing not just as a workforce issue, but as central to efforts to improve patient safety globally, and that was the message we presented at the 4th Global Ministerial Summit on Patient Safety in Jeddah, Saudi Arabia.

I would like to congratulate the Saudi Patient Safety Center for its work in the making of this report, and to reconfirm ICN's continued support in taking the issue of safe staffing levels forward. Nurses can make a difference to every patient they encounter, but only if there are enough of them to do the job they are educated to do.



Howard Catton
Chief Executive Officer
International Council of Nurses

EXECUTIVE SUMMARY

The reports from Institute of Medicine (IOM), "To Err is Human (Institute of Medicine, 1999) and Crossing the Quality Chasm" (Institute of Medicine, 2001) prompted healthcare leaders to address patient safety crisis and advance the required systems, teamwork, and improvement science needed to ensure the delivery of safer care to patients. The principal finding by the IOM's Committee on the Adequacy of Nurse Staffing in Hospitals and Nursing Homes report was that nurse staffing is a key measure that impacts the delivery of high-quality patient care: "Nursing is a critical factor in determining the quality of patient care and for eventual patient outcomes" (Institute Of Medicine, 1996). Thus, it is pivotal to change the outlook on the policy making of nurse staffing as it is a clear driver of the healthcare delivery system, and that nurse staffing has an important impact on patient safety.

The White paper provides a high-level advisory framework on the regulatory landscape and recommendations that must be in place for optimal nurse-staffing ratios and skill mix that will serve as the foundation for a culture of safety. The aim is to engage policy makers to develop or carry out policies that will pave the way to resolution. Local regulators and providers must tailor these recommendations to the local context of each country that choose to develop and implement a national healthcare strategy that envisions a sustainable safe healthcare system for all patients and healthcare providers.

The purpose of the White paper is to engage healthcare policy makers and healthcare administrators to develop and ensure that healthcare policy changes get implemented from this paper's recommendations for safe patient care for both inpatient and outpatient settings.

It also promotes awareness and disseminates appropriate information to improve public understanding of the importance of safe staffing levels and the impact of the Registered Nurse (RN) on the patient, organization and system as a whole. The paper summarizes and discusses the state of nursing science and evidence based on the impact of nurse staffing levels in hospitals and other healthcare organizations as it relates to patient outcomes globally.

BACKGROUND

As per international healthcare and hospital regulatory bodies, there has to be a minimum acceptable nursing standard to provide safe patient care. Unsafe work environments and insufficient nursing staff are indicative of unsafe hospital setting for patients (JCAHO, 2003). The Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI, 2015) mandates that sufficient nurses must be available to meet the needs of patients, including the estimation of the number of staff that is needed per shift (NR.6). This should be based on evidence that considers all the relevant factors such as patient acuity, patient volumes, patient care hours, nurse skill mix, size of the hospital, and the scope of services provided (NR.6.2).

CBAHI, recommends considering the bylaws and regulations from nursing licensing boards, which mandates that all nursing staff should be allocated according to the nursing skill level, nurse qualifications, and nursing experiences (NR.6.3). One example was when a basic minimum nurse-to-patient ratio was legislated in the United States of America in the state of California (AB 394), where the legislation established a nurse-to-patient ratio that needed to be calculated for acute care, acute psychiatric, and specialty hospitals in California. These ratios mandate the maximum number of patients that would be assigned to a registered nurse (RN) during one shift.

Another consideration is when hospitals apply for Magnet® designation, where Magnet® is held as the "gold standard" for nursing excellence, the main focus is to create a culture that brings out the best in patient outcomes and healthcare work environment. It has been recommended, during The World Congress Leadership Summit for Chief Nursing Officers in Chicago, Illinois (2006) that Magnet® hospitals have charge nurses setting the staffing levels for patient care on their units based on the nurse experience and expertise, to provide safe care (Summers S., 2006).

In addition, there are multiple research studies in the healthcare field that supports the need to improve nurse staffing levels, ensuring standards to enforce a minimal nurse staff ratio which proves to be vital to safe delivery of patient care.

There are reports that show strong correlation between nurse staffing and patient outcomes. According to Tourangeau , Giovannetti, Tu , & Wood (2002), who conducted a study on nursing skill mixes and nursing experiences of RNs, illustrated an association between a lower 30-day mortality in the clinical setting when units presented with a higher RN skill mix and more years of experience on the clinical unit. Another study of particular significance reported that hospitals which were able to retain nurses, hence had lower turnover rates, presented significantly lower mortality rates (Aiken, et al., 2014). These findings highlight the need to have nurses that are well trained and have

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a bachelor's degree who have the higher learning and are ready to take care of sick patient's while creating a positive practice work environment and good patient outcomes.

Since then, there is growing evidence that supports the association between nurse staffing and patient outcomes. A recent publication conducted by Lee, et al. (2017), showed that ninety-five percent out of 845 patients analyzed were more likely to have positive outcomes if the healthcare organizations implemented the mandated nurse-patient ratio. This finding directly reflects on the impact of hospital changes in nursing skill mix and years of experience of the nurse on patient mortality. Reinforcing the need to promote standards of adequate nursing staff levels will regulate high-levels of care and patient safety. According to JCAHO, (2003) when **“staffing levels and work environments are not safe for the nurses; they will not be safe for the patients.”**

1. INTRODUCTION

Understanding nursing staff levels for safe patient care has been a subject of critical importance in healthcare and needs to be understood by healthcare policy makers as it has a serious implication for the nurse in the workplace. While many factors have been linked to poor patient care, nurse satisfaction has been warranted as one of the most often mentioned and consequently merits consideration (Cavanagh & Coffin, 1992; Irvine & Evans, 1995).

Nursing is at the core of the healthcare services in any healthcare setting. The nurse not only gets involved with every person who enters into any healthcare setting but contributes and supports them with knowledge and skills while comforting them from birth to death. Nurses' keen ability to facilitate and work in teams make them highly effective in participating and in engaging in decision making which is a vital characteristic that adds integrity and value. This promotes highly-effective working groups and strong relationships with the community; this fact is supported by the public where nurses were ranked first, for 17 years in a row by the public as the most honest and ethical professionals in America (Colduvell-Gaines, 2019).

Thus, nurses are well-placed to prevent harm to patients and to improve the safety of healthcare delivery across all settings. If dramatic measures to address the underlying causes of patient safety are not considered seriously, then the potential to negatively impact the health and the safety of

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the patients is at stake. The impact of inadequate staffing is not limited only to healthcare quality and patient safety but compromises the safety of nurses themselves. Number of nurses per patient ratios is being overlooked globally, leading to poor patient outcomes (Royal College of Nursing, 2017). Hence, lawmakers and policy writers need to take every effort to make nursing staffing levels a priority so that the nursing profession can be attractive to new graduating nursing students and for nurses to remain at the bedside.

Studies in Europe found that European countries that favored higher composition of professional nurses in their workforce presented better outcomes for patients at the bedside. Once such study reported eleven percent lower occurrence of deaths post general surgery and patient's satisfaction had increased by ten percent of patients rating hospitals to be higher than otherwise (Sermeus W1 & consortium., 2011).

For institutions and patients to benefit from appropriate nursing staffing levels and safe work environments, it is imperative for healthcare administrators and decision-makers to reinforce the suitable number of nurses to patients with an appropriate mix of education, training, skills, and experience to meet the needs of patients throughout the continuum of care. The investment on safe, effective and needs-based nurse staffing is not only critical for patient safety but will lower the cost of treating avoidable healthcare-associated conditions.

2. NURSING GOVERNANCE FOR A SAFER HEALTHCARE

Nurse administrators need to advocate and design the execution of proper staffing models to the hospital administrators at the highest-level including presentations to the hospital's board members. Nurses are undoubtedly the drivers and coordinators of delivering patient care through the care continuum. Nursing brings unwavering commitment to improving patient safety, quality, and better outcomes. Nurses' close proximity to patients gives them the unique ability to lead and partner in improving and redesigning the healthcare system. A report written by the American Hospital Association (AHA) Center for Health Care Governance (AHA, 2014) stated that only five percent of nurses are represented in the hospital board compared to twenty percent of physicians that hold seats in the hospital boards. Nurse administrators are underrepresented in the board rooms despite nurses being highly experienced and knowledgeable with skills equipped to deal with the evolving landscape in healthcare.

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Nurses, now, hold terminal degrees such as Doctoral in Nursing Practice (DNP) and educational and research PhDs and are qualified to be boardroom members as they have great influence in decision making to improve population health and to improve the health of their communities. Professional nurses and nurse administrators have the necessary skills to offer the hospital boards substantial expertise when it comes to managing the workplace environment and patient flow. Nurse leaders need to support and prepare nurses to develop from the bedside to the boardroom, as nurses' voices need to be heard and need to advocate and make decisions for patients at the highest level. In addition to their skills in caring for patients and families, they have good judgment in managing nursing budgets, which places them advantageously, to deal with issues related to managing daily operations. Nurses are patient care advocates and know how to improve the patient journey through information technology and quality management projects. The fact that nurses interact directly with patients on a daily basis gives them an exclusive opportunity to have a first-hand knowledge and experience with patient related issues. This allows them to potentially influence decision making at the board level on various healthcare process and systems issues related to finance, safety, quality, and patient and family satisfaction.

Expert nurse leaders and administrators are more than capable to voice their opinions in creative decision making and possess all around knowledge for recruiting and retention strategies that make them an asset in the boardroom. This enables the nurse leaders to have a comprehensive understanding of factors that support population health while advising the healthcare team to align their strategic goals with their patients' priorities to optimize care. **"All boards can benefit from the unique perspective of nurses and achieve the goals of efficient and effective healthcare systems that can improve healthcare at the local, state and national levels."** (Nurses on Boards Coalition: 10K Nurses by 2020, 2017).

3. SAFE NURSE STAFFING

Nurse administrators are well versed with how to lead and manage teams effectively, collaborate with other healthcare multidisciplinary team to improve processes and patient flow. Unlike nurses, other healthcare professionals typically do not have the collective skills gained by a nurse who is in close proximity of a patient who supports holistic patient care, and promotes the wellbeing of

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individuals, the patient family and their society. Nurse managers and nurse leaders are experts and have the unique capability to improve the nursing care process and its practice environment with other healthcare providers to benefit the patient–population health in their homes, schools, public health clinics, long-term, mental healthcare facilities and their communities. Nurses are talented and have excellent communication skills and know how to prioritize their goals using data and analytical skills.

The working conditions and work environment should support nurses to provide patient-centered quality care. Failure to do so may endanger the quality and safety of nursing care causing adverse events for patients leading to unfortunate patient outcomes, lower customer satisfaction, and increased mortality and morbidity rates (ICN, 2018). Safe nurse staffing requires adequate number of nurses with a proper mix of nursing education, training and experience. The education levels may include but not limited to the Associate Diploma in Nursing (ADN), Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN), and other higher degrees. Nursing skill levels, and years of nursing experience is important to consider while hiring nurses to provide patient care. These requirements will ensure comprehensive care that can be delivered safely to meet the patients' healthcare needs.

Furthermore, studies have shown that safe staffing is cost-effective as it reduces the length of hospital stays and the frequency and severity of hospital related complications can be minimized or eliminated (ICN, 2018). When planning the patient's assignments on a given ward for a given shift, the nurse manager or designee needs to factor the scope of service, consider the right mix of nurses and other factors that help determine safe nurse staffing levels for safe patient care. Such factors may include but not limited to acuity, dependency levels, nursing unit layout, number of rooms, support staff and skill levels available (Driscoll, et al., 2017).

4. WORKFORCE SAFETY FOR HIGH LEVELS OF PATIENT SAFETY

Workforce safety must be aligned with and integrated into our overall organizational safety strategies. Poor retention or higher staff turnover are often seen in organization with insufficient nursing staff and is associated with significant risks to the personal health and safety of its practitioners. Studies have shown that nurses working in institutions with inadequate staffing

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levels often conclude and report poor nurse job satisfaction, rise in stress levels, nurse burnout, and a higher intention of nurses wanting to leave. A survey by the ANA (2001) revealed that more than seventy percent of nurses that were exposed to severe stress and were overworked reported associated health related concerns and seventy-five percent of nurses indicated that unsafe working conditions hindered their capacity to provide safe and quality care (JCAHO, 2003).

Besides nurse staffing levels, other studies indicate many related factors that can contribute to unsafe work environments. One study stated that one-third of all nursing injuries at the workplace are of the ergonomics type (JCAHO, 2003) and thus, the SPSC urges healthcare institutions to take measures to curtail ergonomic-related injuries. These measures include developing and implementing necessary policies in addition to increasing staffing levels. Some recommendations from Joint Commission (JCAHO, 2003) are to have enough staff around to pair them up to turn or lift a patient for example or to create teams of healthcare staff to prevent a disruptive patient from inflicting harm to the care providers.

Anecdotal evidence has proven that when staffing levels and work environments are not safe for nurses; nurses may unintentionally become a source of harm to their patients (JCAHO, 2003). These risks include exposure to offensive attacks from upset, confused, or intoxicated clients, injuries from exposure to obnoxious chemicals, needle sticks, and back injuries, and exposure to infections (JCAHO, 2003). It is noted that nurses are more prone to chronic fatigue than other health professionals and nurses working with inadequate staffing levels and poor working environments are prone for a higher risk for needle stick injuries (JCAHO, 2003). Historically, burnout among nurses has been linked with low nurse-patient ratio. High levels of burnout, and adversely low patient outcomes, are often observed when fewer nurses provide care for a bigger volume of patients. According to Mercer (Narlock, 2018), a global healthcare staffing consultant, low nurse-patient ratios were associated with increased patient readmission rates, seen within 30 days of first being seen for the same diagnosis and higher rates of nosocomial infections. Low staffing levels results in unsustainable workloads which in turn has deleterious effects on the health and wellbeing of nurses. Indeed, there is a plethora of evidence that institutions with low nurse-patient ratios pay a higher cost related to high staff turnover, increased rates of preventable injuries, errors and higher patient mortality.

According to the JCAHO (2003) a nurse was scolded as she called the doctor to clarify a medication order, resulting in a fatal medication error (Greene, 2002). Additionally, verbal abuse of nurses is unfortunately very common. Evidence has shown that disruptive behavior has its own toll on nurse

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satisfaction, retention levels, patient safety, and quality of care. Such offensive behavior often discourages nurses from reporting important patient data to the physicians even when data is vital to decision making and in providing safe patient care. Therefore, abusive incidents can have grave consequences for all parties including patients, healthcare providers, and institutions and should be addressed to create a culture of safe care.

With growing awareness of poor workplace violence, the SPSC urges healthcare institutions and government to implement policies that aim for “Zero-tolerance” in the workplaces and advice to have strategies in place to significantly reduce negative behaviors. **“Abuse breeds intimidation and may consequently inhibit nurses from communicating with physicians and disable them to speak up, even when communication may be vital to the quality and safety of patient care”** (JCAHO, 2003). A work environment conducive to mutual respect is crucial to the wellbeing of nurses and other health professionals to improve patient safety and care quality.

5. OPTIMAL STAFFING REQUIREMENTS

Optimal staffing for maintenance of patient safety requires careful building of nursing teams with proper competency and nursing skill mix levels. Studies have shown that higher RN levels have a positive impact on patient outcomes. For example, when there is an increase of one RN for every 10 beds then there are direct correlations with an eleven to twenty eight percent decrease in mortality, 30 days post a cerebrovascular accident (stroke) and an eight to twelve percent decrease the year following a stroke (Myint, et al., 2017).

Determining the optimal nursing staffing requirements is not easy to attain. When staffing is inadequate, the healthcare operational system within the institution should allow for staffing adjustments so that patient care is not compromised. **Standards for new patient admission should be safeguarded, as low nurse staffing levels may result in a "failure to rescue," whereby the worsening condition of a patient may be recognized late and nursing care may become less efficient or even futile,**

which in turn endangers patient safety and increases morbidity and mortality (ICN, 2018).

In the future, valid and reliable staffing tools and evidence-based nurse staffing models need to be developed to improve patient safety and care outcomes (ICN, 2018). In order to meet the requirements, nurse managers and nurse leaders should be actively engaged in designing staffing models that can be operationalized to meet safe patients care. Besides nursing staff ratios, decision-makers must understand that current mandated ratios and other nurse staffing initiatives require thorough consideration of patient acuity needs, nurse competency levels, skill mix, and needs of ancillary staff support to match patient needs (ICN, 2018).

Variety of nursing workforce planning and modeling tools are available in the literature. These tools determine the numbers and competency levels of nurses that are appropriate to meet a set of patient needs and specific service requirements. These staffing tools require the details of the type of units, patient's condition and staffing mix available for work along with competent judgment to arrive at the right staffing decisions. Furthermore, the staffing tools or staffing systems that may be used to estimate optimal staffing need should be benchmarked with other equivalent care institutions, known for their best practices which will offer a helpful staffing estimation reference.

A dynamic and real-time database with meaningful and easy-to-retrieve metrics is essential to ensure real-time adjustments for safe staffing to accommodate for unavoidable events such as absenteeism due to emergencies or unplanned occurrences. The availability of such a database makes it easier to conduct regular reviews, evaluations and enables the institution's executive board to set forth necessary plans and secure the needed funding to maintain proper staffing levels for optimal patient safety. Nevertheless, nursing leaders may use their professional judgment to calibrate staffing levels for optimal patient safety (ICN, 2018).

The SPSC urges healthcare institutions to frequently monitor and to evaluate patient outcomes that are directly related to staffing effectiveness as there is growing evidence of nurse staffing levels impact on patient outcomes. Healthcare institutions, must conduct ongoing screening and assessment to evaluate the nursing staff skill mix with other health professionals including nursing

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assistance to ensure that the right competency and skill mix are available at all times to deliver proper and desired care that meets the needs of the patients in inpatient or outpatient workplace setting.

JACHO, (2003) advises healthcare institutions to monitor nurse sensitive indicators such as patient falls, adverse drug events, patient and family complains and human resources indicators such as staff injuries on the job, use of nurse overtime, staff turnover rates to measure and actively consider if they meet the safety requirement for safe patient care. Due to the heightened awareness of the grave issue, the SPSC urges healthcare institutions and governmental agencies to implement policies that address issues that relate to intimidation, and consequently inhibiting nurse from communicating with physicians which may be crucial to safe patient care and that meet and enforce safe nurse staffing ratios. To this point, **SPSC endorses the nurse-to-patient ratio staffing limits** (Appendix A) that aligns with the recommendations from the Nurse Staffing Standards for Hospital Patient Safety and Quality Care Act of 2017 (H. R. 2392), the Safe Staffing for Nurse and Patient Safety Act of 2018 (S. 2446, H.R. 5052), the California's established nurse-to-patient ratio staffing (AB394), which has been associated with a reduction in mortality rates and improvement of nurse outcomes such as staff retention, job satisfaction, and workloads reduction (Aiken L. H., et al., 2010), the Saudi Minister of Health's recommended ratios and nursing experts. Other countries are also introducing nurse staffing legislation to require that robust systems are in place to both ensure and promote patient safety. This is being done by, either having national nurses' associations recommending safe staffing ratios, by introducing safe staffing levels bills at the government level or passing nursing safe staffing laws as has recently happened in Wales and Scotland. After the Nurse Staffing Levels (Wales) Act being passed in April 2018, Scotland has gone further and passed the Health and Care Staffing (Scotland) Bill by applying safe staff ratios to all clinical staff including social care services. This law legally mandates all healthcare institutional boards to establish clinicians' ratios that allow for safe provision of care, which will ensure better patient outcomes and a healthier workforce (Ford & Mitchell, 2019).

When considering RNs for nursing positions, education and training of BSN prepared nurses have shown that their knowledge base and higher critical thinking abilities are far more superior than other less-prepared categories of nurses such as nursing diplomas programs (Aiken L. , et al., 2014). Healthcare systems that rely heavily on nurses that do not have the mix of higher education

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and rely on nursing support staff have poor patient outcomes leading to higher cost and higher percentages of falls, medication errors and adverse events (ICN, 2018). On the contrary, when there are more BSN trained staff there is evidence that suggests that RNs protect and improve patient care, lowering cost and build better practices to improve patient outcomes (Aiken, et al., 2014).

Nurse executives should be involved in budget decisions so as to capture present growth and volume and future services that may be of considerations. Many factors have been reported as to why healthcare organizations hire less RNs and more licensed Practical Nurses (LPNs) and unlicensed healthcare workers. These factors include shortage of RNs, budget limitations in healthcare, nurse mobilization to foreign countries to better opportunities and living conditions for themselves and their families. Some countries have used the substitution of LPNs for RNs to address the scarcity of RNs and to decrease the cost; such substitution lead to the development of new non-RN roles. Since patient outcomes reportedly have worsened with such approaches, healthcare organizations and governments must use them as temporary measures and use extreme caution (ICN, 2018). To illustrate optimal staffing requirements, careful consideration of nurse-patient ratio and proper mix of nurse competencies and skill levels should be considered to meet patient needs.

6. RETURN ON INVESTMENT (ROI): VALUE OF SAFE STAFFING

In 2013, Medicare-Medicaid (Communications, 2013) reported that the cost to Medicare for hospital readmissions was estimated to cost \$26 billion per year, in the United States of America. Studies have reported that when proper nursing skill and mix are provided for optimal nursing care in hospitals, readmission of patients discharged within 30 days can be reduced. When an organization invests in nursing care as a priority, the ROI will almost instantaneously be mirrored in improved safe quality care that will be delivered directly to the patient and family, reducing readmission that will be automatically realized in hospital cost savings.

National and local governmental leaders and administrators including hospital executives quite often view hospital nurse staffing in the inpatient and outpatient areas as an expense to be minimized as much as possible. However, having too few nurses may cost more when all the costs of patient care are considered. In a recent publication by Linda Aiken et al. (2018), it has been

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reported that higher labor costs in hospitals with more nurses were offset by reduced intensive care admissions by less than forty percent and shorter length of stay. It is noted by the National Healthcare Retention and Staffing Report (2015) that when nurse burnout and turnover are addressed by the organization the annual cost of almost five million dollars can be saved and available to use for workplace improvements.

A greater proportion of support nursing staff worsen the outcomes for patients, including expensive adverse outcomes like infections and falls with injuries, as reported by Person, S (2004), this makes hospital costs increase while driving down profitability, productivity, efficiency, and quality. Cost of hospital acquired infections in organizations that had best nurse staffing ratios had thirty percent fewer nosocomial infections compared to hospitals that had lower nurse staffing mix and after considering other characteristics such as their size and type of hospitals (Aiken, et al., 2018).

Studies have concluded that the ROI is far greater when organizations come together and take into consideration the cost of patient complications and identify the risk factors and proactively plan and implement safe nursing staffing levels for better patient care outcomes. Historically, hospital board members used to believe that cost of care and patient care outcomes would not be compromised if professional nurses were replaced by less qualified or unqualified nursing staff with lower pay. **“Monies spent on recruitment and replacement activities could obviously be better spent on creating workplace environments that value and reward employees, encourage employee loyalty, and ultimately support safe, high quality care.”** (JCAHO, 2003).

In addition to optimal nurse staffing levels, the hospitals need to invest in technology and teaching to maintain professional development so that the qualified nurse can keep up with evidence-based practice to deliver quality care to patients and families. Hence, administrators need to factor in the substantial evidence of how important it is to study their professional skill mix and to not compromise bedside care, but to invest in professional nurses to be assured that there will be a positive ROI in the long run.

7. RECOMMENDATIONS

The following recommendations are reflected in the [ICN Position Statement on Evidence-based safe nurse staffing](#), released in 2018 (ICN, 2018). These are meant to serve as the north to any country, including the Kingdom of Saudi Arabia (KSA), that is trying to achieve highest levels of safe care to its population and its healthcare providers. The SPSC endorses the following recommendations, in order to meet the national transformational goals for 2030 and thereby supports the Nursing profession in KSA to be transformed and meet international standards that aim for a “Safer Healthcare For ALL”.

A. ICN recommends (ICN, 2018) and SPSC endorses the following:

- Organizations should have a nurse at the executive level to ensure the delivery of safe, effective and efficient, high quality and ethical healthcare.
- Organizations representing healthcare should develop, implement and evaluate safe nursing staffing systems and processes.
- Nurse administrators who are decision-makers for nursing should be represented at the highest level of governing bodies and be represented in the board room.
- Nurse administrators must be central to and be involved in the design and planning for creating safe staffing levels to ensure safe, quality patient care delivery.
- Nursing administrators need to incorporate evidence-based human resource planning systems so that the best nursing talent are recruited and advocate for retention strategies.
- Nurse administrators should ensure nurses are a qualified, and a right fit for the job and are not substituted with healthcare workers who are less qualified.
- Nursing management and direct patient care nursing staff must be involved in the design and operation of nurse staffing policies and systems.
- Nurse administrators at all levels should have authority over nursing budgets to safeguard safe staffing for excellent patient care delivery.
- Nurse researchers should be supported for continued research that examines patient safety, quality care, staff wellbeing and economic benefits that maintains organizational stability.

B. ICN recommends (ICN, 2018) and SPSC supports and endorses national nurses' associations (NNAs), in collaboration with their respective government, to:

- Promote awareness and disseminate information to improve public understanding of the importance of safe staffing and the impact of the RN on patient, organizational and system outcomes.
- Provide advice and guidance and support the establishment and implementation of safe nurse staffing systems.
- Advocate for sufficient healthcare funding to deliver needs-based safe nurse staffing.
- Lobby governments to establish effective human resources planning systems to ensure an adequate supply of healthcare professionals to meet patient and population needs.
- Lobby and advocate for effective staffing systems based on both patient safety and the health and wellbeing of staff.
- Monitor and hold to account both governments and healthcare institutions for fulfilling their responsibilities to ensure patient safety through safe nurse staffing.
- Work with their members to provide evidence and feedback on the operation of staffing systems.
- Partner with patient-led organizations in order to raise public awareness of the impact that safe nurse staffing has on patients, families and communities.
- Support those who raise safety concerns.
- Cease the creation of substitute roles for Registered Nurses.
- Promote nurse staffing research that includes economic analysis.

Note: In countries where NNAs or BON are not yet established, it is recommended for these to be created as it will help to streamline and standardize the requirements of nurses to practice safely in their work environment. The BON or nursing associations will be responsible to oversee the wellbeing of nurses hence promoting the needs of the patients. They will be responsible to raise awareness among the public on the impact of safe nurse staffing as it related to patients, families, and the communities.

C. ICN recommends (ICN, 2018) and SPSC supports and endorses the need to call on healthcare organizations and employers to:

- Create a healthy work and practice environment with adequate number of staffs, manageable workloads, managerial support, high-quality leadership, and enable nurses to work at their full scope of practice.
- Organizational leaders should promote and model values that establish transparent systems that report staffing levels and patient outcomes internally and to executive boards and externally to funders and the public.
- Ensure that a Nurse Executive is represented at the highest administrative level and regularly receives updates, evaluates and reviews staffing systems and safe staffing levels.
- Have nurse administrators and manager's central to the design and operation of staffing systems and with authority to adjust staffing levels in response to the changing patient needs based on evidence and professional judgment.
- Create mechanisms that support consultation, negotiation and shared decision making between staff and other healthcare representatives.
- Ensure that the systems are in place to alter or stop patient flow and admissions to match the availability of nursing staff.
- Nurse leadership must have the authority to collaborate with hospital administration to manage patient flow when unsafe staffing situations arise.
- Monitor and respond to nurse job satisfaction and patient satisfaction to promote healthy work environments thereby excelling in staff and patient care.
- Monitor and manage nurse turn over annually and implement retention strategies.
- Have evidence-based systems in place to ensure safe nurse staffing levels based on real-time patient information to match the nurse skill mix, and experience.
- Regularly review the staffing patterns and nurse mix to reflect changes in work environment, patient and populations needs and demands.
- Create policies to protect nursing staff from abuse and bullying in the workplace.
- Formulate and implement policies and procedures to raise concerns on staffing and to investigate without deterring or fear of retribution for the person or persons raising a concern.

D. ICN recommends (ICN, 2018) and SPSC supports and endorses the need to call on every individual nurse in their role as nurse clinicians, nurse educators, nurse researchers, policy influencers, or nursing and hospital executives to consider:

- Nurse staffing decisions must be evidence-based and need to be supported by information systems which should be based on reliable real-time data, agreed metrics, benchmarking and best practice.
- Grant authority to nurses in charge to make timely adjustments that will ensure safe staffing based on patients on-going healthcare status.
- Monitor safety thresholds for nursing skill mix, education and training of staff, modify and adjust for different healthcare settings.
- Ensuring competency-based training to all new and experienced nurses to practice safely.
- Professional judgment of the RN must be respected in determining the required safe staffing for safe patient care.
- Regular reviews of staffing work environments must take place and be informed of up-to-date evidence and best practice on the relationship between RNs and their teams.
- Encourage team nursing to reduce nurse burn out and injury to patients and staff.
- Evaluate safety reporting systems to manage employee health risk and to improve patients care continuously by creating improvement for better outcomes.
- Recognize that nurse staffing affects organizations, patients and nurse outcomes.
- Encourage speak up campaigns and advocate nurses to have a voice in patients care.
- Encourage formal reports of unsafe nurse staffing situations to the nurse administrator.
- Participate in the development of evidence-based human resources planning tools and nurse staffing systems, policies and processes.
- Use the outcome measurement data in a rigorous manner and inform decision-making regarding safe and effective staffing practices.
- Conduct research and analyze nurse staffing data to understand trends and use economic analysis to recommend or forecast future improvement to benefit patient care.

8. CONCLUSION

It is vital to note that when optimal nursing staff is not readily available for patients care then there is opportunity for patient care errors that may be preventable. As reviewed in the literature, several studies suggest that suboptimal nursing staff levels leads to many delays and complications to patient care, leading to a raising cost to the institution. Many illustrations discussed that increase cost are directly related to increase in hospital acquired infections, other site related infections, patients' falls with injury rates, and failure to rescue patients in a timely manner, which leads to increase length of stay and poor patient outcomes. In short, excessive workload and poor nurse staffing ratios are associated with higher rates of preventable medical harm and increase patient mortality and morbidity.

Moving forward, decision-makers, policymakers and healthcare advocates must understand and have influence on how nursing staff levels will impact the safety and wellbeing of the care being delivered to patients. The healthcare professionals should, develop strategies and processes that meet the needs of the population they serve to do no harm. It is clear that workforce safety must be aligned with patient safety, and that prioritizing and taking sustainable measures to improve the safety of workforce needs to be a priority for all healthcare leaders and administrators. Collective efforts from legislators and hospital administrators need to address challenges and accelerated the need to continuously improve and find solutions to advocate for safer patient care.

Some healthcare organizations such as the ones at the state of California in the US, have already activated the mandatory safe staffing levels to ensure better patient outcomes which are directly related to reducing mortality rates and improving nurse outcomes such as staff retention, job satisfaction, and reducing workloads. In the last 10 years there is growing evidence and strong business case to claim the need to improve working environments and conditions for comprehensive safe patient care. Hence, it will be profitable for healthcare organizations to invest in productive and efficient systems and process to meet the Magnet® gold standard for superior quality care.

When hospital administrators collaborate and improve patient flow through the use of evidence-based nursing, occurrences related to adverse patient outcomes such as pressure injuries, falls with

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injuries and infections are reduced. According to the JCAHO (2003), having the right staff with the right education to take care of patients will help draw conclusions that the organization care about safe, quality care to patients. This in turn attracts nurses and creates a culture of retention. The reduction of cost for recruitment and replacement strategies can now be used to create rewards and recognition programs that value nurses leading to loyalty and most of all creating supportive and safe patient care environments.

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Appendix A

Important **considerations** when applying the recommended nurse-to-patient ratios:

- To ensure safe nursing care, it's important to recognize that “no size fits all”, where the **nurse-to-patient ratio varies across wards, may vary within the same unit and throughout the same shift, and are thereby not rigid.**
- Nurse-to-patient ratios must be determined by each unit nurse management team to safely meet patients and nurses’ needs.
- **Specific factors*** that affect the allocation of nurses to patients must be **systematically assessed at the unit level and on a daily basis, or as frequently as needed to ensure that the needs of individual patients and nurses are met throughout a 24-hour period.** Patients and nurses’ conditions and needs may vary within the same shift.
- While determining safe nurse-to-patient ratios, one **must consider the overall availability of ancillary staff/allied health professionals** such as nursing aids, licensed practice nurses (LPNs), technicians, etc. The ratios recommended are put forward based on the premise that a full complement of ancillary and support staff is present at all times during each shift within a unit.
- **Evidence-based decision support tools** must be applied to better determine the safest nurse-to-patient ratios.
- The bottom line to determine nurse-to-patient ratios must be always the **safety of patient care and the safety of the nurses providing care** and not the number of staff available.

***Factors to consider while determining safe nurse-to-patient ratios (NICE, 2014)**

PATIENT FACTORS	<ul style="list-style-type: none"> - Individual patients’ needs (acuity and dependency) must be the main factor for determining the nurse-to-patient needs for a specific unit. - An holistic assessment must be conducted to determine patients’ needs (acuity and dependency) as well as other factors that may impact (decrease or increase) nursing staff requirements, as for example: difficulties with cognition or confusion, end-of-life care, higher risk for clinical deterioration and need for permanent vigilance by a nurses.
UNIT FACTORS	<ul style="list-style-type: none"> - Anticipated unit patient turnover in the ward during a 24-hour period. This should include planned and unplanned admissions, discharges and transfers. - The unit physical layout: one should consider safety of patients that may need closer and the distance that staff must travel to access resources within the unit.
NURSE FACTORS	<ul style="list-style-type: none"> - Activities that require nursing input (in addition to direct patient care) may include, and not limited to: communicating with relatives and sitters, unit and team daily management, supervision and mentoring of nursing staff and nursing students, provision of clinical support to all healthcare staff involved with the care of patients in the unit, performance of quality audits and staff performance appraisals. - Support from non-nursing staff such as the medical team, allied health professionals and administrative staff.

RECOMMENDED NURSE-TO-PATIENT RATIOS

The presented ratios were developed in the context of the healthcare delivery model in Saudi Arabia and are based on evidence-based reports that indicate a positive association between these ratios and a safe care delivery for both patients and nurses (Aiken L. H., et al., 2010), on the Saudi Ministry of Health’s recommended ratios, and on recommendations from nurse experts that have provided insight based on years of experience on the ground and ensure that these recommendations meet practical standards to be applied in daily operations.

Globally, country recommended ratios are context and setting specific and therefore ICN does not endorse nor makes recommendations on ratios.

Patient Care Area	RN-to-Patient Limit
Intensive/critical care (adult and pediatric)	1:2 or 1:1*
Neonatal intensive care	1:2 or 1:1*
Step Down/intermediate care	1:4
Operating room	1:1**
Post anesthesia recovery	1:2
Labor & Delivery (active labor)	1:2
Antepartum	1:4
Post-partum	1:6
Post-partum with “mother-baby set” model of care	1:4
Well-Baby Nursery	1:8
Pediatrics unit	1:4
Emergency Room	1:2
ICU patients in the ER	1:2*
Trauma patients in the ER	1:1
Acute Respiratory Care	1:2
Burn Unit	1:2*
Non-urgent patients	1:4
Medical, surgical	1:4
Telemetry/ cardiac care unit	1:4*
Oncology	1:3
Hemodialysis	1:2*
Observation/Outpatient	1:4
Rehabilitation/transitional care	1:5
Home Care	1:6
Special Care Unit	1:4*
Psychiatric	1:6*
Forensic centers (clinic)	1:2*

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***IMPORTANT NOTE: Please consider the factors related to PATIENTS (acuity and dependency), UNIT, and NURSES when deciding on these ratios (NICE; 2014).**

In ICUs, where there is no supportive staff such as LPNs, nurse assistants and other ancillary staff and the patient is dependent, the ratio should be 1:1.

**** Additional staff members (technicians, ancillary staff), with suitable and adequate competencies, must be used to meet safe staffing. (AORN, 2014)**



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