

## Nurse patient ratio

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### Abstract

Nurse-patient ratio is the ratio of nurses on a particular floor, ward or unit to the number of patients or how many patients one nurse provides care for at one time. The objective of this article is to increase awareness about the importance of mandatory nurse patient ratio. It is an emerging professional issue. There is no standard guideline for maintaining nurse-patient ratio. Safe-staffing ratios are necessary to ensure the safety of patients and nurses. Adequate nurse staffing is key to patient care and nurse retention, while inadequate staffing endangers patients and drives nurses from their profession. Optimal staffing is essential in order to provide optimal patient care. So, it is important for the standard of nursing.

### Introduction

Nurses have an integral role in the health care system. Adequate nurse patient ratios are necessary for ensuring the safety of patients and as well as nurses. Because inadequate staffing endangers patients and drives nurses from their profession. So the objective of this paper is to increase awareness about the importance of mandatory nurse patient ratio to enhance nursing profession.

The nurse-patient ratio depends on many factors such as severity of illness, number of patient, frequency of admission, discharge and transfer, technology, availability of ancillary and supporting staffs, physical setting, nurse and patient satisfaction, safety and quality team dynamics etc. One of those factors is the severity of the patients that the nurse is providing care for. e.g. if a nurse works in an ICU the nurse-patient ratio may be 1 nurse to 1 or 2 patients. If a nurse works in another unit where the patients are not as sick the nurse-patient ratio may be 1 nurse caring for up to 4 or 5 patients. Many hospital units have criteria that dictate the amount of patients one nurse can care for at one time.

### Scenario of Nurse patient ratio around the world

**United States of America:** In 1999, Assembly Bill was passed in California that constituted the first legislation to establish minimum staffing levels of RNs and was implemented in January, 2004 (Conway,et, al, 2008).

The following ratios were implemented

- Intensive/Critical Care-1:2
- Operating Room-1:1 (for every patient under anesthesia)
- Labor and Delivery-1:2
- Pediatrics-1:4
- Emergency Room-1:4
- 1:4 in step-down, telemetry, or intermediate care units and for non-critical emergency rooms.
- Medical/Surgical-1:5
- Psychiatric-1:6

**Republic of Korea:** In 2012, a bill regarding

mandatory patient-to-nurse ratios was introduced to the Korean legislature. The government is piloting a nurse to patient ratio of 1:13 under a new act.

**Australia:** In 2001, Victoria implemented mandatory minimum nurse-to-patient ratios in all public sector facilities. The minimum ratios vary to meet the needs of different units and shifts. Healthcare institutions are categorized into different levels according to acuity of care, size and location.

- On medical and surgical units mandatory nurse-to-patient ratios exist from 1:4 to 1:6 with more patients permitted in night shifts.
- On emergency wards, the ratio 1:3 is mandatory at all times; triage nurses are excluded.
- Results of the implementation were: improved recruitment and retention of nurses, reduced reliance on agency staff, improved patient care, increased job satisfaction and reduced stress.

In addition, in 2010, New South Wales implemented mandatory nurse-to-patient ratios in surgical/medical wards, palliative care and acute mental health units.

**Canada:** The Canadian Federation of Nurses Unions (CFNU) recognizes that Nurse-Patient Ratios are a means of enhancing patient safety and the well-being of nurses by addressing many ongoing problems related to heavy workloads, workplace injuries, high turnover rates, absenteeism, and burnout among nurses.

Experiences in the United States and Australia have demonstrated that the benefits of Nurse-Patient Ratios include an increase in the retention and recruitment of nurses, as well as decreased turnover and decreased absenteeism among nursing staff and increased patient safety.

Nepal: Ministry of health, Department of Health Services, formulated the Nurse-Patient ratio in 2014 which are as follows:

- Intensive care unit (ICU), Coronary care unit (CCU), and Labor room- 1:1
- General ward- 1:8
- Operation theatre- 3:1

### Benefits of adequate nurse patient ratio

There is a strong relationship between adequate nurse-to-patient ratios and safe patient outcomes.

Nurse-patient ratio is necessary to:

- Reduce medical and medication errors
- Decrease patient complications
- Decrease mortality
- Improve patient satisfaction,
- Reduce nurse fatigue
- Decrease nurse burnout
- Improve nurse retention and job satisfaction
- Professional growth and development

### Safe-Staffing Ratios Improve the Workplace and Patient Care

California hospital nurses cared for one less patient on average than nurses in the other states and two fewer patients on medical and surgical units. Lower ratios are associated with significantly lower mortality. When nurses' workloads were in line with California-mandated ratios in all three states, nurses' burnout and job dissatisfaction were lower, and nurses reported consistently better quality of care (Akin, et, al . 2010)

Increased RN staffing was associated with lower hospital related mortality in intensive care units (ICUs) [odds ratios (OR), 0.91; 95% confidence interval (CI), 0.86-0.96], in surgical (OR, 0.84; 95% CI, 0.80-0.89), and in medical patients (OR, 0.94; 95% CI, 0.94-0.95) per additional full time equivalent per patient day. An increase by 1 RN per patient day was associated with a decreased odds ratio of hospital acquired pneumonia (OR, 0.70; 95% CI, 0.56-0.88), unplanned extubation (OR,

0.49; 95% CI, 0.36-0.67), respiratory failure (OR, 0.40; 95% CI, 0.27-0.59), and cardiac arrest (OR, 0.72; 95% CI, 0.62-0.84) in ICUs, with a lower risk of failure to rescue (OR, 0.84; 95% CI, 0.79-0.90) in surgical patients. Length of stay was shorter by 24% in ICUs (OR, 0.76; 95% CI, 0.62-0.94) and by 31% in surgical patients (OR, 0.69; 95% CI, 0.55-0.86) (Kane, Shamliyan, Mueller, Duval, and Wilt, 2007)

### **Research findings show that understaffing endangers both nurses and patients.**

Inadequately staffed shifts can increase the likelihood of adverse events, such as falls with injury, medication errors, and needlestick injuries to nurses. Such evidence can be used to show that it takes not only the right number of nursing staff on every shift to ensure safe patient care, but also the right mix of expertise and experience (West, Patrician and Loan, 2012)

Staffing of RNs below target levels was associated with increased mortality, which reinforces the need to match staffing with patients' needs for nursing care (Needleman J, et al, 2011)

There was a significant association between patient-to-nurse ratio and urinary tract infection (0.86;  $P = .02$ ) and surgical site infection (0.93;  $P = .04$ ). In a multivariate model controlling for patient severity and nurse and hospital characteristics, only nurse burnout remained significantly associated with urinary tract infection (0.82;  $P = .03$ ) and surgical site infection (1.56;  $P < .01$ ) infection. Hospitals in which burnout was reduced by 30% had a total of 6,239 fewer infections, for an annual cost saving of up to \$68 million (Cimiotti, Aiken, Sloane, and Wu, 2012)

Approximately one-third of nurses reported an emotional exhaustion score of 27 or greater, considered by medical standards to be "high burnout." (Cimiotti, et al, 2012)

Each additional patient over four in a nurse's workload, the risk of death increases by seven percent

for surgical patients. Patients in hospitals with the highest patient -to-nurse ratio (eight patients per nurse) have a 31% greater risk of dying than those in hospitals with four patients per nurse. Higher emotional exhaustion and greater job dissatisfaction in nurses were strongly associated with higher patient-to-nurse ratios. The study found that each additional patient per nurse corresponds to a 23% increased risk of burnout, as well as a 15% increase in the risk of job dissatisfaction. Forty -three percent of nurses reporting burnout and job dissatisfaction intend to leave their current position within the next 12 months; only 11% of nurses satisfied with their current positions intend to leave within the next 12 months (Fact Sheet, 2003)

Working long hours and with inadequate staffing affects nurses' health, increasing their risk of musculoskeletal disorders (MSDs—back, neck, and shoulder injuries), hypertension, cardiovascular disease, and depression. In 2012, registered nurses had 11,610 incidents of MSDs, resulting in a median rate of eight days away from work. Among all healthcare practitioner and technical occupations, there were 65,050 nonfatal occupational injuries and illnesses that required a median of seven days away from work (U.S. Department of Labor, Bureau of Labor Statistics, 2013. <http://www.bls.gov/news.release/pdf/osh2.pdf>.)

### **Need of maintaining nurse patient ratio in Nepal**

In Nepal, there is no standard guideline for maintaining nurse-patient ratio. This has been a common experience that our hospitals are severely understaffed. This has created a lot of problems in delivering quality care to patients. Day to day operational issues such as lack of proper documentation, no record of vital signs, poor personal hygiene of patient, missing patient's investigation, no medication in time, etc are attributed to low staffing. Understaffing can also lead to severe problems such as inadequate care to patients and burnout syndrome and health problems among nurses themselves. Therefore, to ensure quality care to patients and

healthy working environment in hospitals, there should be maintenance of proper nurse-patient ratio. Now, Health Ministry Department of Health formulated Nurse patient ratio but it needs to bring a legal legislation. Professional nursing associations such as Nursing Council should take initiative to create this act. The nursing leaders have to create innovative strategies through a collaborative effort and to develop solutions that will build a safer environment for patients and nurses. It requires extensive discussion through interactive program on the topics, research, and legislative lobbying.

### Conclusion

Mandatory nurse patient ration is emerging issues in nursing profession worldwide. Adequate staffing ratios improve the workplace environment and patient care. Understaffing endangers both nurses and patients. It is the responsibilities of professionals, nursing leaders, political leaders, entrepreneurs and consumers to initiate activity for the safe and competent nursing service to the patient. The database over nurse –patient staffing ratio is complex and introducing politicians into the mix increase the complexity. The primary issue remains the same delivery of safe, quality and cost effective patient care. This can only be accomplished if / when nurses administration, financial leaders and politicians work together and respect one another's point of view to bring resolution to this complex problem. It is vital that nurses take an active role in being informed and participate in the developing a nurse-patient system to determine a staffing ratio that promote patient safety and positive patient outcomes.

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