CFNU

**CANADIAN
FEDERATION
OF NURSES
UNIONS**

Nurse-Patient Ratios

Current evidence report — overview

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Canadian Federation of Nurses Unions

The CFNU is Canada's largest nurses' organization, representing frontline unionized nurses and nursing students in every sector of health care — from home care and LTC to community and acute care — and advocating on key priorities to strengthen public health care across the country.

Land acknowledgement

From coast to coast to coast, we acknowledge the ancestral and unceded territory of all the Inuit, Métis and First Nations Peoples that call this land home. The Canadian Federation of Nurses Unions is located on the traditional unceded territory of the Algonquin Anishnaabeg People. As settlers and visitors, we feel it's important to acknowledge the importance of these lands, which we each call home. We do this to reaffirm our commitment and responsibility to improve relationships between nations, to work towards healing the wounds of colonialism and to improve our own understanding of local Indigenous Peoples and their cultures.

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Acknowledgements

CFNU Member Organizations

Registered Nurses' Union Newfoundland & Labrador

UNA United Nurses of Alberta

New Brunswick **Nurses Union** NBNU SIINB Syndicat des infirmières et infirmiers du Nouveau-Brunswick

pei nurses

BC NURSES' UNION

Nova Scotia **Nurses' Union**

ONTARIO NURSES' ASSOCIATION

sun SASKATCHEWAN UNION OF NURSES

CNSA AEIC

Manitoba **nurses** Union A COMMITMENT TO CARING
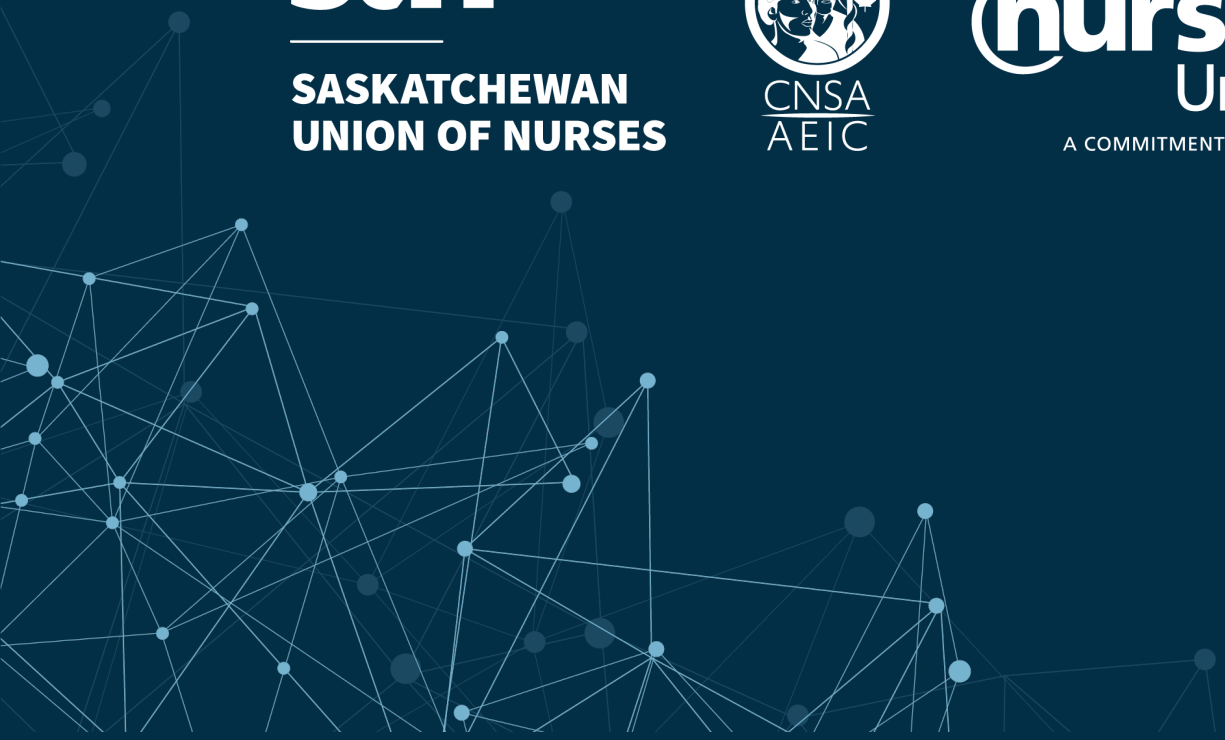
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Purpose of the research

The Canadian Federation of Nurses Unions (CFNU) requested this rapid review on the current evidence and existing national and international policies around nurse-patient ratios, which will provide an evidence base for CFNU's November 2024 Nurse-Patient Ratios Summit co-chaired by Dr. Jane Ball, RCN, and Linda Silas, CFNU. This paper includes an overview of the current published literature and jurisdictional scan of nurse staffing approaches that have been implemented in Canada and globally. This research will provide background information for discussions and knowledge-building activities for nurses, researchers, employers and policy makers participating in the summit.

Access the full report

Scan the QR code to read the full report. The full report is available in English only.

nursesunions.ca/research/nurse-patient-ratios

Overview

This summary report explores Canadian and global approaches to nurse staffing, including legislative efforts, and reviews research on the impact of nurse staffing on patient and nurse outcomes. Safe nurse staffing is essential for high-quality patient care and sustainable nursing workforces. Staffing levels have long been a key focus and critical area of research due to their profound influence on patient care quality and nurse outcomes. Despite extensive research in this field and longstanding efforts to standardize staffing levels, the lack of uniformity in setting safe staffing levels is evident. This has led to global initiatives for consistent staffing standards, including mandated or legislated nurse-patient ratios. These standards aim to improve care quality and support nurse retention, addressing the pressing need for a stable and optimal nursing workforce. The COVID-19 pandemic further emphasized the importance of robust staffing models for resilient health care systems, underscoring the urgency of this research.

Lower nurse staffing levels are widely acknowledged as critical indicators for adverse outcomes, guiding staffing decisions and workforce management. Effective staffing policies are essential for high-quality patient care and sustainable nursing workforce.

Across the globe, legislative efforts to address nurse staffing vary, reflecting the complexity of health care needs. While mandated nurse-patient ratios are present in several jurisdictions, a variety of other approaches, including safe staffing frameworks, staffing committees and flexible guidelines tailored to the needs of specific health care systems, have emerged. The impact of these varying measures on health care quality underscores the need for evidence-based adaptable policies.

Evidence consistently shows a strong link between nurse staffing levels and select patient and nurse outcomes, although evidence of causality is sometimes inconsistent, limiting the generalizability of the findings. Nevertheless, lower nurse staffing levels are widely acknowledged as critical indicators for adverse outcomes, guiding staffing decisions and workforce management. Effective staffing policies are essential for high-quality patient care and sustainable nursing workforce. As health care faces ongoing challenges, strategic staffing policies supported by research and legislation are vital for creating supportive sustainable environments for patients and improving nurse retention.

Approaches to safe nurse staffing

A. Nurse-patient ratio mandates and acts

Nurse-patient ratio mandates offer clear, quantifiable standards directly impacting patient safety and nurse workloads. Legislation, which involves the creation and enactment of laws by governing bodies, plays a crucial role in setting these standards. Nurse staffing legislation varies globally, reflecting regional health care challenges. Examples include

California's Assembly Bill 394, and union-led campaigns in Victoria and Queensland, Australia, as well as recent initiatives emerging in British Columbia, which involve a memorandum of understanding signed with the ministry of health. These diverse legislative frameworks emphasize the need for responsive policies that consider clinical, socio-political and economic factors.
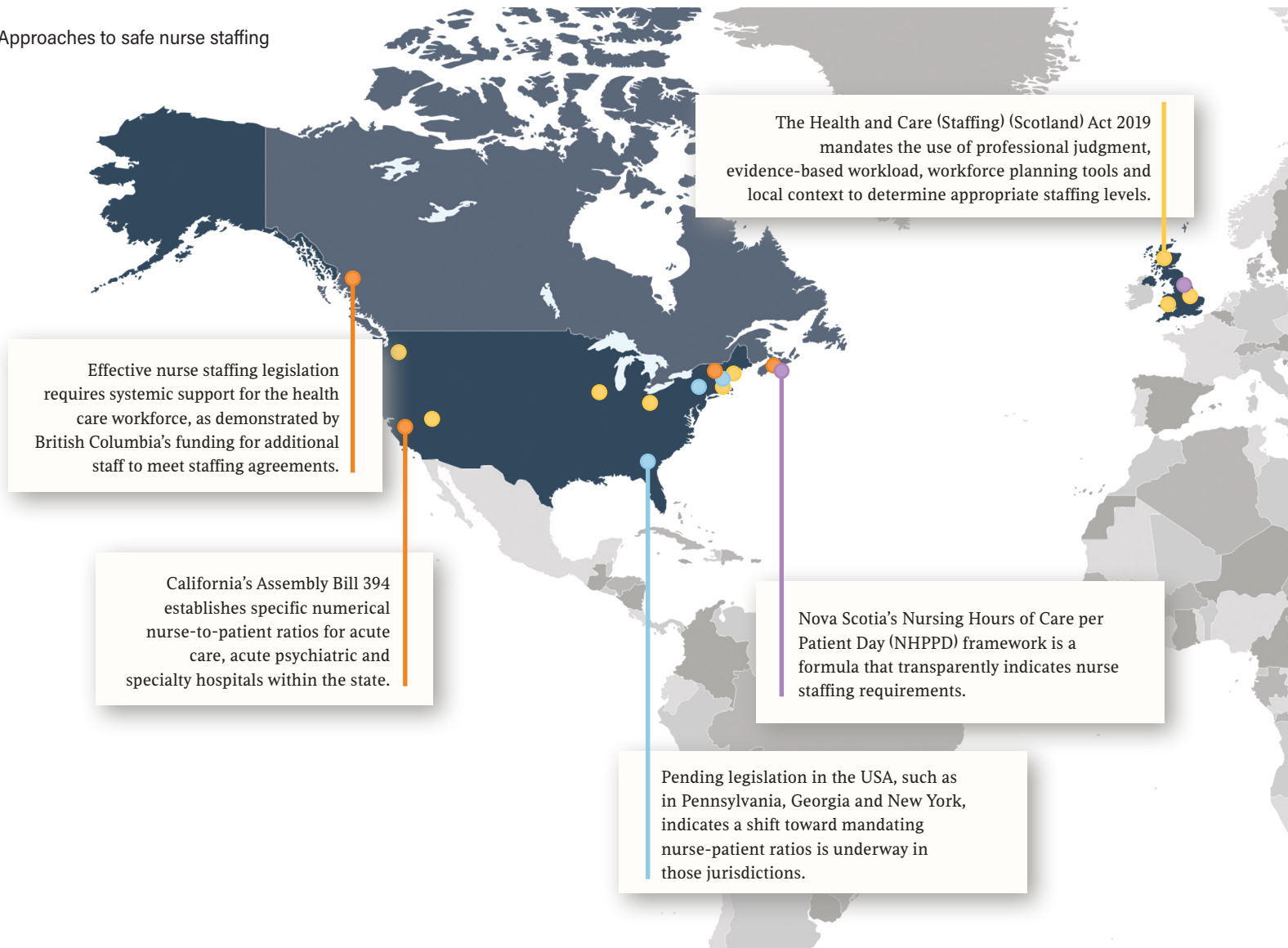
The implementation of nurse staffing legislation varies widely, with strategies tailored to different health care systems. A common approach involves phased implementation, starting with critical care units and gradually expanding to other areas over time. Enforcement mechanisms also differ, including punitive measures such as California's financial penalties for non-compliance, incentive-based models like South Korea's financial rewards for meeting staffing standards, and transparency-driven approaches like New York's requirement for public posting of staffing levels. Effective nurse staffing legislation also requires systemic support for the health care workforce, as demonstrated by British Columbia's funding for additional staff to meet staffing agreements. In addition to these strategies, retention efforts are crucial to sustaining a robust nursing workforce. For instance, Nova Scotia's recent initiative to offer $10,000 retention bonuses to nurses remaining in the public health system is a notable example. This retention payment, as endorsed by the Nova Scotia Nurses' Union (NSNU), aims to acknowledge the hardships nurses endured long before COVID-19 and made even worse by the pandemic. While financial incentives are a step in the right direction, comprehensive strategies, including work-life balance, reduced overtime and improved workplace conditions, are essential for long-term retention.

> **Retention efforts are crucial to sustaining a robust nursing workforce. For instance, Nova Scotia's recent initiative to offer $10,000 retention bonuses to nurses remaining in the public health system.**

B. Nurse staffing acts and programs

Mandated nurse staffing acts and programs often involve initiatives to ensure adequate staffing levels, enhance nurse training and improve working conditions. Examples include Connecticut and Ohio's engagement of frontline care providers in staffing decisions, Washington and Nevada's legislative adaptability to regional needs, and New Jersey and Illinois's transparency and accountability measures, which require public reporting of staffing levels and adherence to staffing standards. In Wales, there is a legal duty placed on health boards and NHS trusts to maintain sufficient nurse staffing levels for safe and effective patient care. Meanwhile, Scotland mandates the development and application of a common staffing method for health and care services, which uses professional judgment, evidence-based workload, workforce planning tools and local context to determine appropriate staffing levels. These diverse legislative frameworks emphasize the importance of flexible responsive policies that address the broader needs of nurses and patients.

The Health and Care (Staffing) (Scotland) Act 2019 mandates the use of professional judgment, evidence-based workload, workforce planning tools and local context to determine appropriate staffing levels.

Effective nurse staffing legislation requires systemic support for the health care workforce, as demonstrated by British Columbia's funding for additional staff to meet staffing agreements.

California's Assembly Bill 394 establishes specific numerical nurse-to-patient ratios for acute care, acute psychiatric and specialty hospitals within the state.

Nova Scotia's Nursing Hours of Care per Patient Day (NHPPD) framework is a formula that transparently indicates nurse staffing requirements.

Pending legislation in the USA, such as in Pennsylvania, Georgia and New York, indicates a shift toward mandating nurse-patient ratios is underway in those jurisdictions.

C. Pilot projects, guidelines and collective agreements

Pilot projects and guidelines pave the way for improved nurse staffing practices, serving as trials for real-world application. These initiatives often involve collaboration between health care providers, policymakers, researchers and unions to test and refine staffing models before broader implementation. Examples include New Zealand's Care Capacity Demand Management program, the UK's NHS guidelines, and Nova Scotia's Nursing Hours of Care per Patient Day (NHPPD) framework in Canada. These initiatives aim to synchronize nursing capacity with care delivery demands, providing critical insights for effective staffing models.

D. Pending nurse staffing legislation

Pending legislation in the USA, such as in Pennsylvania, Georgia and New York, indicates a shift toward mandating nurse-patient ratios is underway in those jurisdictions, reflecting the growing recognition of nursing expertise in the provision of safe patient care, and thus the importance of addressing nurse retention. These mandates offer clear enforceable standards addressing staffing deficiencies and supporting patient care quality.

A. Nurse-patient ratio mandates and acts
- Victoria, Australia
- Queensland, Australia
- British Columbia, Canada
- Nova Scotia, Canada
- California, USA
- New York, USA
- South Korea

B. Nurse staffing acts and programs
- Connecticut, USA
- Illinois, USA
- Nevada, USA
- New Jersey, USA
- Ohio, USA
- Washington, USA
- Scotland
- United Kingdom
- Wales

C. Pilot projects, guidelines and collective agreements
- Nova Scotia, Canada
- New Zealand
- United Kingdom

D. Pending nurse staffing legislation
- Georgia, USA
- New York, USA
- Pennsylvania, USA

South Korea employs financial incentives to promote voluntary adherence to safe staffing benchmarks.

New Zealand's Care Capacity Demand Management program uses patient demand tracking software to calculate the hours of care required and the number of staff.

E. Global variation in nurse-patient ratio enactment

Global variation in nurse-patient ratios reflects a variety of economic, cultural and systemic factors. Ratios vary by care setting, with stricter ratios evident in critical care units and more flexible ratios in general wards and mental health units. These differences highlight the need for adaptable staffing policies that balance care demands with nurse workloads.

This analysis highlights the trend towards implementation of nurse-patient ratio approaches. Expanding these policies requires ongoing research, stakeholder engagement and policy innovation to enhance patient care and support nursing workforce retention. Effective staffing policies will ensure manageable workloads enabling nurses to provide high-quality care in every health care context.

1990s

Aiken and Kovner

Research on the impact of nurse staffing on patient outcomes began in the 1990s, with pioneering studies in the US by Aiken (University of Pennsylvania) and Kovner (New York University).

2011

Aiken

Aiken's 2011 study linked hospital work environments to nurse burnout, job dissatisfaction and patient care quality, prompting discussions about improving work environments in Canadian health care policy.

2009-2011

RN4CAST study (Europe)

This large-scale project analyzed nurse and patient surveys and hospital data, revealing that higher nurse staffing levels and better nurse work environments were associated with improved patient outcomes.

2011

Duffield

Duffield's 2011 study in Australia highlighted that better nurse staffing ratios led to improved patient outcomes, such as lower mortality rates.

Early research on nurse staffing

Research on the impact of nurse staffing on patient outcomes began in the 1990s, with pioneering studies in the US by Aiken (University of Pennsylvania) and Kovner (New York University). These studies established that appropriate nurse staffing levels significantly influence patient health outcomes. Aiken's research at Magnet hospitals — health care facilities recognized for nursing excellence — showed a 4.6% lower mortality rate after adjusting for patient characteristics, emphasizing the importance of well-structured nursing care. Kovner's study of acute care hospitals revealed an inverse relationship between registered nurse staffing levels and postoperative complications, highlighting the value of adequate nurse staffing in patient safety. Needleman expanded the evidence base by showing higher registered nurse staffing levels led to better patient outcomes, supporting policies for sufficient hospital nurse staffing. These foundational studies have influenced health care policy and practice, demonstrating how strategic improvements in nurse staffing can enhance patient health outcomes.

Aiken's international outcomes study in the US and Canada assessed how nurse staffing and organizational support affect nurse and patient outcomes. The study found high levels of job dissatisfaction and burnout among nurses in Ontario and British Columbia correlating with poor staffing and insufficient organizational support. These findings highlighted the need for staffing reforms in the Canadian health care system. Aiken's 2011 study linked hospital work environments to nurse burnout, job dissatisfaction and patient care quality, prompting discussions about improving work environments in Canadian health care policy.

The RN4CAST study in Europe, involving over 500 hospitals across 12 countries, further advanced the understanding of the impact of nurse staffing on patient outcomes. This large-scale project

2015

Sermeus

Sermeus's 2015 analysis of RN4CAST data across Europe found a positive correlation between better nursing work environments and improved patient outcomes, reinforcing the importance of supportive work conditions for nurses.

2018

Ball

Ball's 2018 investigation into shift lengths and job satisfaction found that longer shifts were linked to lower care quality and increased care left undone, highlighting the negative impact of understaffing and insufficient nurse-patient ratios on both nurses and patients.

2016

Aiken

Aiken's 2016 research showed that a higher proportion of professional nurses improved patient outcomes, cautioning against substituting less qualified staff.

analyzed nurse and patient surveys and hospital data, revealing that higher nurse staffing levels and better nurse work environments were associated with lower patient mortality, fewer complications and higher patient satisfaction. These findings demonstrated that improving nurse staffing and work conditions could significantly enhance patient outcomes. The study's methodologies and findings have influenced health care policies and strategies for nurse workforce planning globally.

Duffield's 2011 study in Australia highlighted that better nurse staffing ratios led to improved patient outcomes, such as lower mortality rates.

Sermeus's 2015 analysis of RN4CAST data across Europe found a positive correlation between better nursing work environments and improved patient outcomes, reinforcing the importance of supportive work conditions for nurses.

Aiken's 2016 research showed that a higher proportion of professional nurses improved patient outcomes, cautioning against substituting less qualified staff.

Ball's 2018 investigation into shift lengths and job satisfaction found that longer shifts were linked to lower care quality and increased care left undone, highlighting the negative impact of understaffing and insufficient nurse-patient ratios on both nurses and patients.

Research from the early 1990s to the late 2010s enriched the understanding of nurse staffing, work environments and patient outcomes. Each study contributed evidence supporting strategic nurse staffing as being essential to ensuring high-quality patient care.

Current research on nurse staffing

The evolution of nurse staffing research has been shaped by the differences in the health care landscape in Canada and abroad, inherently adding a layer of complexity to this area of study. A rapid umbrella literature review was conducted to identify and synthesize evidence on nurse staffing approaches to acknowledge the current state of study in this area. Umbrella reviews compile and synthesize multiple literature reviews, making comparisons to highlight results and provide an overall assessment. This approach is particularly useful when examining nurse staffing research, given the volume of literature and heterogeneity amongst the studies.

Literature review results

A. Characteristics of literature reviews

This rapid umbrella review revealed a variety of 'types' of literature reviews have been published, the majority being systematic reviews. Common themes included the impact of nurse staffing changes, relationships between nurse staffing and patient outcomes (n=44) and nurse outcomes (n=22). The most prevalent patient outcomes identified were mortality, hospital-acquired infections, pressure injuries, length of stay and failure to rescue. Nurse outcomes predominantly reported on included job satisfaction, burnout, intention to leave and nurse turnover.

B. Impact/change in nurse staffing

Higher nurse staffing levels are generally associated with better patient and nurse outcomes. The evidence of the research syntheses highlights the integral role staffing levels play in shaping positive outcomes for patients and nurses alike. At the same time, some reviews found limited evidence linking nurse staffing to patient outcomes or reported inconclusive findings. Variability in the measurement tools and differing operational definitions were highlighted in some reviews, in turn impacting the conclusiveness of the results. Indeed, the volume of evidence linking nurse staffing levels with improved outcomes for patients and nurses is considerable, although heterogeneous findings are noted; this may raise questions regarding the utility and impact of ratios as a measure to ensure safe staffing. Notably, standardized recommendations regarding the precise nurse staffing levels needed to optimize outcomes remain a challenge for hospital administrators and policymakers in Canada and around the world to navigate.
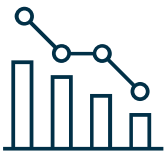
Amongst the included reviews examining patient mortality rates, 87% found that higher nurse staffing levels are linked to decreased mortality rates.

C. Effect of nurse staffing on patient outcomes

Across the literature, a number of patient outcomes have been investigated in relation to nurse staffing levels, including in-patient mortality, hospital-acquired infections, incidence of pressure injuries, length of hospital stay, failure to rescue, medication errors, patient falls, restraint prevalence, increased patient wait times and missed nursing care. In this review exercise, findings for the five most common outcomes reported across the 44 studies were critically examined, in order of frequency: mortality, hospital-acquired infections, pressure injuries, length of stay and failure to rescue. Across the included research syntheses, it was found that adequate nurse staffing levels are

linked to positive patient outcomes in acute care hospital settings and in some specialty areas. Amongst the included reviews examining patient mortality rates, 87% found that higher nurse staffing levels are linked to decreased mortality rates. Staffing levels were also linked with reduced length of stay in 80% of reviews, while lower rates were noted in 100% of reviews addressing this outcome. Other patient outcomes, like hospital-acquired infections and incidence of pressure injuries, showed similar positive associations with higher nurse staffing levels.

D. Effect of nurse staffing on nurse outcomes

Adverse nurse outcomes and their connection to staffing levels have been a more recent area of inquiry in this field of work. Some nurse outcomes include job satisfaction, burnout, intention to leave, nurse turnover, work environment, needlestick injuries, job stress, fatigue, workload, work engagement and collaboration. In this review, findings for the four most common outcomes reported across the 22 studies were critically examined, in order of frequency: job satisfaction, burnout, intention to leave and nurse turnover. Fewer research syntheses examined adverse nurse outcomes, suggesting that this perspective on staffing levels has not been investigated to the same extent as patient outcomes. Higher nurse staffing levels were generally associated with improved nurse outcomes. Most reviews found that increased nurse staffing improved job satisfaction (90%), reduced burnout (94%) and resulted in lower turnover (88%). The evidence for intention to leave was less clear but generally supported the need for adequate staffing.

The review highlights the importance of adequate nurse staffing levels in achieving positive patient and nurse outcomes. While findings vary, the overall evidence supports the need for strategic nurse staffing to ensure high-quality patient care and a sustainable nursing workforce that can be retained. Complexities in this body of research, such as the study design employed, measurement standardization and variability in definitions used along with varied practice contexts, pose challenges insofar as applying the results and creating universal standards. That said, research syntheses in this field have crystallized the critical role of nurse staffing in health care delivery and the importance of monitoring staffing adequacy.

Future considerations

Canadian health care policy must address several key areas to enhance care delivery, ensure patient safety, support nursing staff and nurse retention, and ensure a robust health care system.

Data-driven decision-making
Policies should be grounded in evidence, with adequate structures and guidelines for collecting and sharing data, enabling adaptation to changing needs.

Stakeholder engagement and governance
Inclusive policy formation involving diverse groups ensures alignment with stakeholder needs.

Embedding outcome measures in practice
Acknowledging the value in measuring patient and nurse outcomes as a quality indicator and tool to inform staffing needs.

Global collaboration and best practices
Learning from international innovations enhances health care systems.

Workforce development and support
Emphasizing education and professional development empowers nurses to adapt to evolving demands, ensuring a robust workforce to support safe staffing through workforce stabilization, proper funding and health human resources (HHR) planning.

Conclusion

The review highlights the critical importance of nurse staffing levels for high-quality patient care and nurse retention. Evidence-based policies, workforce development and continuous evaluation are essential for a sustainable and effective health care system prioritizing patient safety and nurse satisfaction.

Nurse staffing has been magnified as a key health human resource issue worldwide and instilled an urgency to understand the nuances of nurse-patient ratios and their legislated mandates. Evidence suggests that safe nurse staffing levels are not merely a logistical consideration but a pivotal factor influencing quality of care, patient safety and the overall efficiency of health care delivery. Moreover, implications extend to nurses as their levels of job satisfaction and burnout are intrinsically linked to the retention and sustainability of the workforce.

Given the safety-critical role of nursing in patient care, heightening awareness regarding the policy landscape and the research evidence underpinning nurse staffing approaches and nurse-patient ratios furthers efforts in making progressive positive changes to our health care system. Ensuring the delivery of quality safe patient care and the preservation of the nursing workforce provides a strategic blueprint for a sustainable efficient health care system with a renewed capacity for achieving excellence.

Evidence suggests that safe nurse staffing levels are not merely a logistical consideration but a pivotal factor influencing quality of care, patient safety and the overall efficiency of health care delivery.

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