





SPECIAL ISSUE DISCURSIVE PAPER

Workforce management and patient outcomes in the intensive care unit during the COVID-19 pandemic and beyond: a discursive paper

Rochelle Wynne RN, PhD, Director^{1,2}  | Patricia M. Davidson RN, PhD, Vice-Chancellor and Principal³  | Christine Duffield RN, PhD, Professor^{4,5} | Debra Jackson RN, PhD, Research Academic Director⁶  | Caleb Ferguson RN, PhD, Senior Research Fellow¹ 

¹Western Sydney Nursing & Midwifery Research Centre, Blacktown Clinical & Research School, Western Sydney University & Western Sydney Local Health District, Blacktown Hospital, New South Wales, Australia

²School of Nursing & Midwifery, Deakin University, Geelong, Victoria, Australia

³Johns Hopkins University School of Nursing, Baltimore, Maryland, USA

⁴Faculty of Health, University of Technology (UTS), Sydney, New South Wales, Australia

⁵School of Nursing & Midwifery, Edith Cowan University, Perth, Western Australia, Australia

⁶Susan Wakil School of Nursing, The University of Sydney, Sydney, New South Wales, Australia

Correspondence

Professor Rochelle Wynne, Director & Professor of Nursing, Western Sydney Nursing & Midwifery Research Centre, Western Sydney University & Western Sydney Local Health District.
Email: R.Wynne@westernsydney.edu.au

Abstract

Aims: To highlight the need for the development of effective and realistic workforce strategies for critical care nurses, in both a steady state and pandemic.

Background: In acute care settings, there is an inverse relationship between nurse staffing and iatrogenesis, including mortality. Despite this, there remains a lack of consensus on how to determine safe staffing levels. Intensive care units (ICU) provide highly specialised complex healthcare treatments. In developed countries, mortality rates in the ICU setting are high and significantly varied after adjustment for diagnosis. The variability has been attributed to systems, patient and provider issues including the workload of critical care nurses.

Design: Discursive paper.

Findings: Nursing workforce is the single most influential mediating variable on ICU patient outcomes. Numerous systematic reviews have been undertaken in an effort to quantify the effect of critical care nurses on mortality and morbidity, invariably leading to the conclusion that the association is similar to that reported in acute care studies. This is a consequence of methodological limitations, inconsistent operational definitions and variability in endpoint measures. We evaluated the impact inadequate measurement has had on capturing relevant critical care data, and we argue for the need to develop effective and realistic ICU workforce measures.

Conclusion: COVID-19 has placed an unprecedented demand on providing health care in the ICU. Mortality associated with ICU admission has been startling during the pandemic. While ICU systems have largely remained static, the context in which care is provided is profoundly dynamic and the role and impact of the critical care nurse needs to be measured accordingly. Often, nurses are passive recipients of unplanned and under-resourced changes to workload, and this has been brought into stark visibility with the current COVID-19 situation. Unless critical care nurses are engaged in systems management, achieving consistently optimal ICU patient outcomes will remain elusive.

Relevance to clinical practice: Objective measures commonly fail to capture the complexity of the critical care nurses' role despite evidence to indicate that as workload

increases so does risk of patient mortality, job stress and attrition. Critical care nurses must lead system change to develop and evaluate valid and reliable workforce measures.

KEYWORDS

COVID-19, critical care, intensive care unit, mortality, nurse staffing, workforce

1 | AIMS

The aim of this paper is to highlight the need for development of effective and realistic workforce strategies for critical care nurses, in both a steady state and pandemic. Critical care nurses, who influence patient outcomes, infrequently lead or make governance decisions that impact on their workload and this is considered through the lens of the COVID-19 pandemic in this paper.

2 | BACKGROUND

The challenge of the COVID-19 pandemic has opened wide the doors of the health system and identified both strengths and weaknesses. The challenges in maintaining an adequate critical care nursing workforce are well-established (West et al., 2014), and this has been compounded as the pandemic increased demand on critical care services. During the pandemic, there has been increasing public attention on intensive care units (ICU), accompanied by plentiful political rhetoric and scrutiny about where and how additional beds, ventilators and specialised nurses could be obtained. While nurses have been hailed as 'everyday heroes', the need for a highly skilled and expert nursing workforce to care for these complex patients remains understated. We agree, the public health measures and supportive care interventions nurses have led in the pandemic have been unequivocally effective defences (Cohen et al., 2020). The expert nursing care provided by critical care nurses has a direct effect on in-hospital mortality, rates of adverse events, such as hospital-acquired complications, patient and family satisfaction and the overall quality of care (Cremasco et al., 2013; Falk & Wallin, 2016; Gerasimou-Angelidi et al., 2014; Schubert et al., 2012; West et al., 2014). To date, the intricacies of the critical care workforce, including nursing and nursing workload, are not well understood.

Critical care nurses are the single constant factor in an ICU, present at the patients' bedside 24 hours a day, seven days a week. Despite considerable diversity in models of care implemented in the critical care context, standards for critical care nursing practice in developed nations are fundamentally similar (Gill et al., 2012), as is the prevailing hierarchical approach to governance and decision-making within the ICU. Critical care nurses' competency and performance at the bedside are consistently ineffectively measured, yet is one of the most influential factors influencing outcomes. Health professionals in the ICU have an opportunity to lead change and

What does this paper contribute to the wider global clinical community?

- The fine balance of capacity and demand in the ICU environment has been tipped by COVID-19. In the critical care environment, nursing skill and expertise are absolutely crucial to mediate and mitigate negative patient outcomes.
- There is a need for effective and realistic workforce measures to capture critical care nurses' contribution to patient outcome.
- Strong leaders and sound knowledge are required to instigate nurse-led reform. Critical care nurses must lead system change and develop and evaluate valid and reliable workforce measures.

to advance system innovation and redesign that could strategically focus on pre-emptive rather than reactive practice and achieving high-quality care. Critical care nurses need to have a voice in leading system change and substantiating that voice with robust measures of effect is fundamental.

3 | DESIGN

In this discursive paper, we argue that critical care nurses are a fundamental moderator of ICU patient outcomes. We demonstrate why it is crucial that existing approaches to workload measurement are revised, to develop effective and realistic workforce measures, and why critical care nurses have the attributes and contextual understanding of point-of-care ICU processes essential to support successful system change.

4 | METHOD

Narrative synthesis of the literature and commentary on the COVID crisis inform this discursive paper. Discursive papers enable the exploration of contemporary issues from a variety of perspectives that focus on discourse (Bilmes, 1986) supported by evidence where available. The search strategy focussed on literature examining ICU

governance structures; skill mix, staffing and workload measurement; and mortality, in acute and critical care. A comprehensive search of CINAHL, Medline (EBSCO), SCOPUS and the Cochrane library using keywords (critical care, intensive care, workforce, workload, morbidity, staffing, nurs*) revealed literature describing the interplay between nurses at the point-of-care and ICU governance structures was sparse. There was a substantial body of evidence focussed on the relationship between skill mix as evidenced by qualification and level of ICU experience, nursing workload and outcomes measurement in the acute and critical care context, including a number of systematic reviews. Very few studies provided robust evidence to address the gaps.

4.1 | The need for reform in governance

In ICU, the paradox of health care is glaringly obvious; we have a dynamic, technological environment and staff caring for the highest acuity patients with historical and rigid governance structures. Hierarchical bureaucracy, with ordered levels of management answerable to the lower level, is not a new concept and one that supports disempowerment of clinicians at the frontline (Skinner et al., 2009). Common to every ICU is a specific governance system to guide processes of care. Despite decades of research revealing failings in governance systems, very little has changed in terms of system structures to guide processes of care (Braithwaite et al., 2020). This approach assumes solutions are driven from the 'top-down' and nurse-led implementation of reform with end-user and consumer engagement is often novel (Braithwaite & Goulston, 2004).

The top-down approach is inadequate as evidenced by healthcare performance being static for more than three decades. Braithwaite et al., (2020) describe the '60-30-10 challenge' where 60% of care is consistent with guidelines, 30% is low value and 10% causes harm. These authors claim there is an urgent need for a conceptual leap in our understanding of healthcare system response to relentless pressure and demands; behaviours are emergent, and the past cannot be used to accurately predict the future. Root cause analyses (RCAs) evidence the pathways to failure, but the answers do not necessarily avert future harm because few errors follow the same pathway. The expectation that rigid policy implementation will ameliorate future error, using linear logic, is unrealistic. Top-down solutions rarely work satisfactorily and restrict team capacity for adaptation in response to dynamic situations (Braithwaite et al., 2020).

COVID-19 has meant dynamic decisions have been made quickly at the 'coalface'. This in turn means an opportunity to rethink the ways in which we perceive ICU nurses' contribution to patient outcomes and governance. ICU care in the context of COVID-19 has been rescued by nurses from the bottom up (Ford, 2020). ICUs are defined as a geographically organised system within a hospital providing intensive specialised nursing and medical care to sustain life (Marshall et al., 2017). In response to the pandemic, governments have built 'Nightingale' hospitals, an answer formulated before asking necessary questions. Rapidly established as a temporary

solution to manage pandemic surge, these field hospitals required a significant injection of nurses. However, nurses are a finite resource. Critical care nurses at the centre of the crisis redefined ICU practice within existing systems to respond to demand, knowing that skill mix dilution was unavoidable (Nayna Schwerdtle et al., 2020) and that the nexus between supply and demand was unachievable (Mitchell, 2020). Yet, these same nurses rarely contribute to senior-level responses about the appropriateness of staffing arrangements to meet care demands. Although critical care nurses are on the frontline of care delivery and the pandemic has raised our profile, involvement in senior-level policy and planning decisions is globally inconsistent (Ford, 2020), and this has implications for safe quality care with optimal outcomes.

4.2 | Staffing, skill mix and workload

Despite extensive evidence demonstrating an association between sub-optimal levels of nurse staffing and increased rates of adverse events including mortality, causal links have not been established (Griffiths et al., 2020). Instruments to measure workload and calculate nurse staffing and skill mix requirements are primarily uninformative because variation in supply and demand is poorly quantified, the notion of 'optimal' staffing is implicit (Griffiths et al., 2020) and the approaches used to plan nurse staffing lack validation (Saville et al., 2019). A number of systematic reviews have confirmed strong associations between nurse staffing and patient outcomes in the acute hospital sector (Butler et al., 2011; Griffiths et al., 2016; Kane et al., 2007; Wynendaele et al., 2019). Internationally, over the last 20 years research has demonstrated that lower levels of nurse staffing are associated with increased adverse outcomes and iatrogenesis for patients (Aiken et al., 2002; Duffield et al., 2011; Griffiths, 2014; Needleman et al., 2011; Twigg et al., 2011). In particular, there is a growing body of evidence that reports an association between fewer nurses and increased patient mortality (Aiken et al., 2014; Duffield et al., 2011; Needleman et al., 2011; Rafferty et al., 2007; Twigg et al., 2011). Reduced levels of nurse staffing are also associated with higher rates of drug administration errors and episodes of missed nursing care (Ball et al., 2018; Griffiths et al., 2016).

Skill mix impacts the quality of care and is associated with decreased rates of adverse patient events, including mortality (Aiken et al., 2013, 2017; Ball et al., 2017; Duffield et al., 2010; Griffiths et al., 2018; Roche et al., 2012; Twigg et al., 2016). This is particularly evident in the context of surge demand. Mismatch between supply of nursing staff and patient demand is generally addressed by increasing temporary staff numbers that invariably leads to a dilution of expertise. Temporary staff (such as agency, casual or redeployed clinicians) are usually less skilled in the context of critical care, have limited local knowledge and cannot manage indirect patient care that in turn increases the workload of skilled nurses while concurrently compromising patient safety (Duffield et al., 2020). Robust associations between skill mix dilution, adverse events and increased likelihood of mortality have been established (Dall'Ora et al., 2020;

Griffiths et al., 2019; Twigg et al., 2019). The odds of a patient dying within 30 days of admission increase by 7% for each one patient increase in a nurses' workload and 16% for a 10% increase in missed care (Ball et al., 2018). While it remains challenging to determine appropriate nurse staffing given ward complexities, the use of existing timely and accurate data and the expertise of nursing unit managers could increase efficiency and effectiveness of staffing that in turn would enhance patient safety. Too often decisions regarding efficiencies in care are made by those who spend little time with patients, treating the increase and intensification of nursing workload as an external factor (Duffield et al., 2020).

4.3 | Critical care staffing

In the context of critical care, there is global variation in the number of critical care nurses with post-registration specialty qualifications and the effect of this in terms of quality of expertise. Standards for critical care nurse education have been developed and extensively reviewed for consistency across providers in Australia, the United Kingdom (UK) and other European countries (Gill et al., 2015). In the United States of America (USA) and Canada, there are national benchmarking standards for education providers and critical care units (AACN, 2019). In Australia, there are workforce standards specifically for intensive care units (Chamberlain et al., 2018). These evidence-based quality standards are designed to optimise patient outcomes and provide safe, quality, person-centred care. The standards are unique in that they recommend an approach designed to improve nursing workforce and nursing workload via the inclusion of a comprehensive critical care nursing workforce that extends beyond the role of the bedside nurse. Workforce standards provide a collective approach to workforce sustainability and planning, designed to be used in conjunction with practice standards that cannot be achieved if adequate workforce standards are not implemented (Chamberlain et al., 2018). Herein lies a conundrum; if workload as an indicator of performance is ineffectively measured, how can the benefit of practice or workforce standards be validated?

Workload studies and the relationship between ICU nurse staffing and patient outcomes are marred by the same issues as those from acute medical and surgical settings. Numerous studies have been undertaken since the late 1980s, primarily in the USA or Europe, within single or multiple sites. There have also been several systematic reviews (McGahan et al., 2012; Numata et al., 2006; Penoyer, 2010), all of which reach the same conclusion; study design, inconsistency in endpoint definitions and variability in workload measurement negate the capacity to draw any meaningful conclusions when data are combined. Workload has been defined as the level of effort required to complete a task in relation to the resources available to expend on that task (Demerouti et al., 2001). ICU nurses' workload has been measured objectively using patient acuity scoring systems, that attempt to capture tasks or activities associated with patient care during shift periods (Kwiecien et al., 2012), nurse-to-patient ratios (Gill et al., 2012), staffing per shift per

bed and hours per patient day (Twigg et al., 2011). No single measurement has proved reliable, transferrable or accurate in effectively indicating critical care nurses' workload.

More recently, the effectiveness of wearable and environmental sensors and trackers to detect nurses' physical activity have been evaluated. These sensors accounted for only 55% of within and between shift variation in four-hour blocks of nursing activity (Rosen et al., 2018). As with existing models, this type of approach fails to recognise that underpinning nurses' workload is a level of uncertainty. Uncertainty can be related to any aspect of critical care workload; diagnosis, prognosis, treatment recommendations, clarity of expectations or guidelines, lines of responsibility, communication and the effect of care on quality of life (Pomare et al., 2019). Existing workload measures do not account for these issues of uncertainty, common in complex domains of care. At point-of-care, nurses have to interpret, triage and incorporate uncertainty as a routine component of care. To date, objective measures fail to capture the complexity of the critical care nurses' role despite evidence to indicate that as workload increases so does risk of mortality, job stress, attrition and impaired communication (West et al., 2014). If we want to improve our understanding of the interaction between patient outcome and workload, we need to change the way in which we view the role and functions of the critical care nurse and devise measures that adequately capture the complexity of critical care nurses work.

4.4 | Measuring the effect of point-of-care practice in ICU

Critical care nurse staffing, skill mix, advanced practice functions and level of education within an ICU model of care are variables that affect high quality, safe care delivery at the point-of-care (Chamberlain et al., 2018). Despite being the single largest workforce in the ICU system, our ability to capture the mediating influence of the nurse on patient outcomes is poor. Measuring the effect of an individual nurse is confounded by variability in ICU size, structure, design, resources and ultimately patients (Abbenbroek et al., 2017). A plethora of research has focussed on the effect of numerous physiological, diagnostic and patient-related factors as risks for morbidity and mortality. Inferences about quality of care are made on the basis of variability in outcome but comparative analyses require adjustment for population characteristics and severity of illness, which is not always achievable. Prognostic tools provide a mechanism for standardising mortality rates to facilitate benchmarking, but these are also fraught by variability in methodology and validation, therefore reliability (Keuning et al., 2020). While there is no doubt that physiological factors underpin outcome, variables that mediate or mitigate outcome from point-of-care practice are rarely captured in predictive models.

Pandemics necessitate changes to resources and systems for service delivery to meet critical care demands on ICU (Marshall et al., 2020). Sub-optimal systems can result in reduced time in direct patient care and increased time in non-direct care activities

(Westbrook et al., 2011). Using a human factors engineering approach, Carayon & Gurses, 2005 propose a conceptual framework that defines causes, consequences and outcomes of critical care nurses' workload based on a systematic review of ICU nursing workload measures. These authors categorise workload measures into a hierarchy of; unit level, job level, patient level and situation level, respectively. Measures such as nurse-to-patient ratios, occupancy per shift and nursing hours per patient day are blunt, macro unit-level measures that do not consider education and experience and focus on overall nursing workload in an ICU. Improvement strategies to target workload at this level involve either increasing the number of nurses or decreasing the number of patients, neither of which have been shown to improve patient outcomes (Abdelatif et al., 2020; Chang et al., 2020; Hoogendoorn et al., 2020).

Job level workload is a constant factor that is the by-product of working conditions characterising a role. Working conditions have been directly linked to stress, burnout and job dissatisfaction in ICU for many years (Schmalenberg & Kramer, 2007). Nurses view workload associated with 'the job' as directly related to unit performance, the ratio of investment to outcome in the nurses' relationship with patients and also colleagues. At the patient level, scoring systems that determine nursing requirements according to patient acuity feature. An array of measures are available including the Therapeutic Intervention Scoring System (TISS), Nine Equivalents of Nursing Manpower (NEMS) and Nursing Activities Score (NAS). These measures are based on patient condition giving a rudimentary estimate of workload based on the time it takes to provide care without extracting what care is (Hoogendoorn et al., 2020). None of these measures account for situational differences, a key element of the critical care nurses' role that is under-investigated. Situational-level workload comprises those activities that occur in the clinical micro-system. Measurement at this level provides a means of identifying specific attributes of barriers and enablers to job performance. Barriers and enablers impact work life and influence nurses' experience of patient, job and unit-level workload (Carayon & Gurses, 2005). Situational-level workload affects critical care nurses' performance that in turn is directly related to quality and safety outcomes (Browne & Braden, 2020; Carayon et al., 2014; McGahan et al., 2012). If we start to capture causes or sources of workload necessary and unnecessary, using a micro-system approach, a platform from which the effect of the critical care nurse on patient outcomes will emerge. This platform is the fundamental first step required to demonstrate the value of critical care nurses and the importance of their voice in service planning and decision-making.

4.5 | Providing safe quality ICU care

All care that is provided to critically ill patients is focussed on maintaining safety. Strict measures and protocols to ensure safety of critically ill patients are necessary because these patients very often have major impairments to their ability to self-care and communicate, and so are unable to have any meaningful role in maintaining

their own safety. Care provision, regardless of context, needs to be safe for all concerned. In times of pandemic, normal safety protocols may be compromised, and the provision of safe high-quality care is threatened by a number of factors. Patient safety, satisfaction and quality cost-effective care have been shown to be associated with well-educated and skilled nurses (Rosa et al., 2020), and in the critical care environment, nursing skill and expertise are absolutely crucial to achieving best patient outcomes. Thus, the current and well-publicised concerns driven by the pandemic related to obtaining extra ICU beds and equipment to support ventilation in itself, devalue the importance of nursing expertise in providing care for critically ill patients (Phua et al., 2020). This equipment, without expert nurses to provide appropriate care, is just machines. These machines alone can save nobody. Their value is based on having suitably qualified and skilled nurses to use the technology to patient benefit (AACN, 2019; Bray et al., 2010; Chamberlain et al., 2018; de Sousa et al., 2015; Gill, Leslie, Grech, Boldy, et al., 2015; Gill et al., 2015; dos Santos Cargnin et al., 2016).

Similarly, the idea that retired nurses or nurses from subacute areas can be provided with a short refresher, online short course training or orientation programmes to rapidly upskill and be redeployed to care for critically ill patients (ACI, 2020) is a matter of grave concern and represents a threat to patient safety and care quality. Skill mix dilution has a negative impact on acute care morbidity and mortality. The assumption that rapid on the spot upskilling of critical care naïve nurses is a solution to address shortfalls diminishes this specialty and shows little recognition of the expertise needed to care for critically ill patients. An example of this is the so-called rapid 'upskilling' of nurses in critical care, through e-learning modules, which diminishes the need for physical clinical-psychomotor skills. As recommendations for multidisciplinary critical care staffing emerge, the value of reflecting on, reviewing and revising reactive management strategies should be emphasized (Marshall et al., 2020). In the aftermath of this pandemic, important conversations are needed within the profession and the wider community of health professionals about rapid redeployment of nurses into critical care areas, and how this can be achieved without threatening patient safety. Future pandemic workforce preparedness plans need to be well-designed and evidence-informed, robust and actionable.

4.6 | ICU nurse staffing and mortality

The dynamic force driving care within the physical structure of the ICU is its workforce; medicine, allied health but predominantly, nursing. As in most clinical situations, nurses deliver most care in the ICU. While there is evidence to indicate a relationship between skill mix, education, higher nurse-to-bed ratios and improved ICU outcomes including mortality (Blegen et al., 2011; Lee et al., 2017; Schmalenberg & Kramer, 2007; West et al., 2014), variability in ICU structure, workload measurement and subsequent nurse staffing, make global comparisons challenging. The high-pressure, high-acuity environment of the ICU underscores the importance of ensuring

that nurses are well prepared and in sufficient numbers. Analogous to acute care contexts, to date there is inconsistency in the application and effectiveness of nursing workload measures. Generating conclusive evidence to argue the influence of critical care nurses on morbidity and mortality is complicated by the predominant use of nurse-to-patient ratios which is a blunt instrument with minimal sensitivity.

Lee et al., (2017) argue that nurse-to-patient ratios in ICU are insensitive as they disregard case-mix variability and are neither linear nor logical. ICU nurse-to-patient ratios are based on averages that assume days of low staffing can be compensated for by days of high staffing when patient observation is a static requirement of critical care (Lee et al., 2017). Death is more likely to occur in the context of low ratios of nurses to patients with high patient turnover and a greater number of life-sustaining procedures (Neuraz et al., 2015). In a retrospective cohort study of 894 ICU admissions across two ICUs in Hong Kong, Lee and colleagues conclusively demonstrated a threshold for severity of illness and nurse-to-patient ratios in ICU. Higher acuity patients in Unit 1 with less qualified and less experienced nurses had lower nurse-patient workload ratios that in turn meant mortality was comparable to Unit 2 where lower acuity patients were cared for by a more experienced and educated critical care nursing workforce with higher nurse-to-patient ratio. A volume threshold where risk-adjusted mortality benefit can tip indicates there is a window, regulated by high and low volumes, in which optimal ICU performance exists (Abbenbroek et al., 2014).

COVID-19 has challenged existing workload models and conditions. Bed scarcity, staff shortages and lack of PPE during the pandemic have been globally challenging, borne out in variability of ICU bed availability, admissions and mortality (Phua, Weng, et al., 2020). The global variability in ICU mortality is shocking. In July, mortality rates for patients with COVID-19 admitted to ICU globally were 15%, 40.1%, 44%, 60% and 70% in Australia, the UK, China, Italy and the US, respectively (Le Grande & Dow, 2020). For those who require intubation and mechanical ventilation, ICU mortality has been reported to be between 22% in Australia (Burrell et al., 2020) and 88.1% in New York City (Richardson et al., 2020). It could be hypothesised that the disparity between Australian and international outcomes is directly related to pandemic control. To date, average Australian virus reproduction rates have largely been less than 2. This has meant to date that ICU beds are available and generally well resourced. It has also meant that the nursing workforce available to care for critically ill COVID-19 patients has not been compromised.

In the context of COVID-19, patients requiring admission to an Australian ICU are faring extremely well. Australian critical care nurses typically have postgraduate qualifications and a high level of practice autonomy (Chamberlain et al., 2018). Point-of-care practice in the Australian context involves equitable collaboration and consensus within local contexts (Marshall et al., 2020). Australian critical care nurses independently manage mechanical ventilation, ventilator setting, airway suction and endotracheal tube maintenance. Technical devices including extracorporeal therapy (ECMO), external ventricular drains, intra-aortic balloon counter-pulsation

and the titration of vasoactive medication to maintain haemodynamic stability are within the remit of the ICU nurse. The capacity for constant surveillance while managing technology at the point-of-care by nurses reduces the need for ancillary staff and equates to reduced complications, restraint, sedation, infection and variability in practice (Chamberlain et al., 2018).

Mortality is influenced by local practice (Phua, Weng, et al., 2020), and in those countries with high mortality incidence, nurse-to-patient ratios have been reported to be up to 1:6, with critical care nurses variously supported by redeployed nurses without critical care qualifications or experience, and at times with non-nursing staff. 'Making do' when there is a shortage of qualified critical care nurses is problematic. There is no doubt surge demand creates capacity and system strain and the nature of rationing, denial or delay can increase mortality (Phua, Weng, et al., 2020). Conversely, while it may be inappropriate to deny ICU admission if beds are available, inadequate staffing will also have a substantial impact on mortality risk (Lee et al., 2017). Evidence exists to substantiate the fact that nurse staffing in ICU on the basis of workload rather than the number of patients or the number of beds reduces mortality (Kiekkas et al., 2008). The implications of critical care nurse staffing models for mortality during the COVID-19 pandemic and beyond, warrant further exploration.

5 | CONCLUSIONS

The fine balance of capacity and demand in the ICU environment has been tipped by COVID-19. As Daly et al., (2020) note, the tragedy COVID-19 brings provides opportunity to innovate and lead reform. The pandemic has highlighted that the impact of a skilled workforce in the context of ICU is not well understood, and there is a need for nursing involvement in decision-making. ICU nursing workload is poorly measured with systems that ineffectively evaluate point-of-care practice. Until we can identify and accurately quantify situational influences on workload the effect of nursing care at the patient, job and unit level will remain elusive. These factors in turn affect job satisfaction, burnout, staff attrition and turnover. Following the International Year of the Nurse and Midwife, the 200th birthday of nursing icon Florence Nightingale and COVID-19, the greatest pandemic of our modern era, there has never been a better time for nurses to speak up and to lead.

6 | RELEVANCE TO CLINICAL PRACTICE

Despite the proliferation of evidence describing COVID-19-related patient outcomes in critical care, there is sparse data at the level of the nurse provider. At the frontline of the pandemic nurses' concerns, interest or effect lack acknowledgement (Daly et al., 2020). Thousands of healthcare workers have been infected with COVID-19 and have died. While a global tally is elusive, the International Council of Nurses stated that as of the 14 August 2020 more than

1,500 nurses and over 7,000 healthcare workers globally had died as a result of the COVID-19 pandemic with estimates of healthcare worker infections being as high as 3 million (ICN, 2020). Inadequate PPE and guidelines for its use combined with an initial lack of understanding of the capacity for spread are frequently blamed (Chughtai et al., 2020; MacIntyre & Wang, 2020). In ICU, nurses recognise the symptoms of systemic underperformance every day and are superbly skilful at workarounds. However, they are largely voiceless, and this must change. Nurses are not just a transactional element of the healthcare supply chain; strong leaders and sound knowledge are required to instigate nurse-led reform, and nurses have an important role to play in achieving necessary change (Daly et al., 2020).

Critical care nursing workload is poorly measured with systems that ineffectively evaluate point-of-care practice. Factors that mediate and mitigate negative patient outcome are not captured. Sound knowledge will be generated with consistent implementation of standards for practice and situation level measures to capture workload according to patient acuity, irrespective of size or location of the ICU. It is imperative that we create opportunities to effectively capture point-of-care nurse effect in ICU. Experience to date with missed care in non-ICU settings provides the necessary impetus to optimise opportunities for nurse-led critical care at the unit and system level. Nursing expertise augments pre-emptive rather than reactive strategies for patient management at the critical juncture of patient recovery. Leading care from the ground up with a model of care that incorporates point-of-care workload and situational level outcomes may require capacity to allocate resources that are in the short term more expensive but in the long-term more cost effective.

Australian critical care standards for practice were designed to optimise the point-of-care nurses' capacity to be patient focussed. These standards call for ICU nurse-led ancillary staff in the nursing workforce that focus on management, education, equipment, research, liaison, access and non-nursing support staff. Interestingly when these standards were developed, nurse-led ancillary roles had the lowest levels of agreement during expert panel review. Traditional views need to be challenged to engage point-of-care nurses in the decision-making system from the ground up. Decisions made in the ICU ultimately impact the entire healthcare system, broader nursing and health workforce, patients, carers, families and communities. In addition to nurses' situational workload for patient focussed care, a focus on patients' and relatives' needs for supportive, complementary or compensating nursing that is not readily described in tasks is imperative. These indirect care activities are essential in providing wholistic care and the critical care nurse as the constant central point of contact manages competing requirements for indirect care when advocating for the ICU patient. Diluting the skilled workforce increases the burden of indirect care on nurses who remain (Duffield et al., 2020). Until we can identify and accurately quantify situational influences on ICU workload, the effect of nursing care at the patient, job and unit level will remain elusive. Objective measures fail to capture the complexity of the critical care nurses' role despite evidence to indicate that as workload increases so does risk of patient mortality, job stress and attrition.

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CONFLICT OF INTEREST

There are no conflicts of interest to report.

ORCID

Rochelle Wynne  <https://orcid.org/0000-0003-1814-3416>

Patricia M. Davidson  <https://orcid.org/0000-0003-0299-6289>

Debra Jackson  <https://orcid.org/0000-0001-5252-5325>

Caleb Ferguson  <https://orcid.org/0000-0002-2417-2216>

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