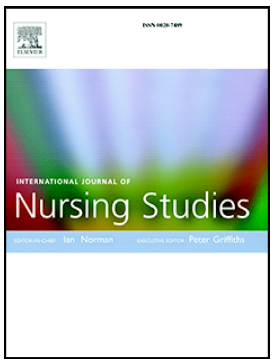

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Title page

Prioritizing nurse-patient relationships in the digital transformation of nursing: A discussion paper

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Abstract

Healthcare is undergoing rapid digital transformation, with artificial intelligence (AI), automated documentation, and predictive analytics now integrated into clinical workflows. These technologies promise to reduce administrative burden and expand nursing capacity. Yet system-level incentives often redirect reclaimed time toward increased patient throughput rather than toward restoring the essence of nursing: human presence at the bedside. As nursing confronts severe workforce shortages, burnout, and moral distress, the strategic allocation of time liberated by technology may determine both the future of the profession and the safety of healthcare delivery.

Evidence demonstrates that high-quality nurse-patient communication correlates with improved patient satisfaction, reduced adverse events, enhanced treatment adherence, and better emotional wellbeing. Recent studies document that AI-enabled documentation can reduce charting time by approximately 25-50%, saving nurses considerable minutes per shift. However, this efficiency dividend is at risk of being captured by organizational productivity metrics rather than reinvested in the therapeutic relationship.

This commentary calls on policymakers, health system leaders, and nursing executives to redefine organizational metrics of success in digital transformation initiatives. The measure of technological progress should not be the number of additional patients nurses can absorb, but rather the quality of care nurses are finally empowered to deliver. We propose a leadership agenda that protects and prioritizes the human moment as a strategic resource, ultimately improving patient outcomes, nurse wellbeing, and organizational sustainability.

Keywords: Artificial Intelligence in Nursing; Relational Care; Nurse-Patient Communication; Burnout Prevention; Digital Efficiency

What is already known

- AI-enabled documentation systems can reduce nursing charting time by approximately 25-50%, creating significant efficiency gains in clinical workflows.
- High-quality nurse-patient communication is associated with improved patient outcomes, including satisfaction, reduced adverse events, and enhanced treatment adherence.
- Nurse burnout significantly compromises patient safety and care quality, with burned-out nurses demonstrating higher rates of adverse events and medication errors.

What this paper adds

- This paper argues that time saved through AI automation should be protected for therapeutic nurse-patient relationships rather than redirected toward increased patient throughput.
- It proposes a comprehensive leadership framework with specific organizational metrics, protected time policies, and accountability structures to ensure digital efficiency gains enhance relational care.
- The paper reframes AI implementation success as improvements in care quality and nurse wellbeing rather than productivity metrics and establishes relational care as a strategic organizational priority.

Introduction

The contemporary nursing landscape stands at a critical juncture. Artificial intelligence (AI) and automated documentation systems promise unprecedented relief from administrative burden, while healthcare organizations face relentless pressure to increase throughput, reduce costs, and maximize productivity.

Accumulating evidence from recent systematic and scoping reviews shows that AI-enabled systems frequently reduce documentation time, with individual studies reporting reductions ranging from roughly 20% to over 50%, depending on the tool and context(Bracken et al., 2025b, Lee et al., 2024, Bracken et al., 2025a). Healthcare professionals currently spend an estimated up to two hours beyond their official workday on documentation tasks(Perkins et al., 2024), with nursing documentation alone consuming up to 40% of nurses' working time(Michalowski et al., 2026). While early pilot studies-including a recent trial with 40 nurses using virtual patient scenarios-report time savings of approximately 40%(Ju et al., 2025); moreover, the consistency of findings across multiple reviews further strengthens the evidence base. Nevertheless, important questions remain regarding the sustainability of these

gains in real-world clinical practice and the potential emergence of new error types with AI implementation(Bracken et al., 2025b).

The central question confronting nursing leadership is deceptively simple yet profoundly consequential: Who owns the time created by technology? Will these reclaimed minutes be redirected toward absorbing more patient assignments, or will they be protected as sacred space for the human connection that defines nursing practice? This decision carries implications not only for nurse satisfaction but also for patient safety, clinical outcomes, and the sustainability of healthcare systems.

This discussion paper integrates current empirical evidence on AI-enabled documentation, nurse-patient communication outcomes, and workforce sustainability to propose a leadership framework for protecting relational care during digital transformation. Rather than presenting original research, we synthesize existing evidence and offer both normative commentary, articulating why relational care should be protected as a professional value, and concrete policy proposals for how organizations and policymakers can operationalize this protection. We drew upon recently published systematic reviews, meta-analyses, and landmark empirical studies identified through targeted searches of PubMed, CINAHL, and key nursing informatics journals (2019–2025), supplemented by the authors' domain expertise and selective use of AI-assisted literature discovery tools.

The thesis of this commentary is direct: Technology should amplify the nurse's capacity for presence, not erase it. In an AI-enabled era, we must resist the tempting focus on maximizing patient numbers at the expense of care quality, a mindset often referred to as the 'throughput mentality' and instead build organizational structures that mandate reinvesting digital efficiency gains into relational care. This approach is not merely idealistic, but a strategic necessity grounded in evidence linking nurse-patient communication to measurable improvements in safety, satisfaction, and health outcomes.

The Promise of Technology: Efficiency with Purpose

The evidence consistently demonstrates that documentation burden is both substantial and consequential: nurses spend approximately one quarter of their working time on electronic documentation tasks, often comparable to or exceeding time in direct patient care, with this burden positively associated with burnout and emotional exhaustion(Gesner et al., 2022, Alobayli et al., 2023, Bakhoum et al., 2021). AI integration offers a promising solution, enabling nurses to dedicate more time to direct patient interactions and improving care quality(Al Khatib and Ndiaye, 2025), while yielding substantial clinical and operational benefits including enhanced detection of physiological changes, timely interventions, and reduced complications(Hassanein et al., 2025). When implemented thoughtfully, these

systems enhance accuracy by reducing transcription errors(Tsai et al., 2020), support clinical decision-making through real-time alerts(Chen et al., 2023), improve care coordination(Tsai et al., 2020, Alharbi, 2025), and enable predictive analytics to identify at-risk patients(Shen et al., 2025, Guedalia et al., 2020).

However, the value proposition extends beyond mere time savings. The promise is efficiency with purpose**,** technology that liberates nurses to practice at the full scope of their professional calling. Yet we must ask: efficiency toward what end? If automation enables nurses to absorb higher patient-to-nurse ratios, the intended benefits of technology for nursing presence may not be realized. If the purpose is to restore meaningful time at the bedside, we create the conditions for excellent care.

Relational Care as a Clinical Intervention

The evidence base for nurse-patient communication as a determinant of health outcomes is substantial and consistent. Therapeutic communication encompasses key attributes, information exchange, mutual respect, engagement, and collaborative management of health concerns, that yield measurable benefits including patient satisfaction, accelerated recovery, and positive relationship outcomes(Xue and Heffernan, 2021). This multifactorial concept influences the nursing process, clinical reasoning, and decision-making, ultimately promoting high-quality care and satisfaction for both patients and nurses(Afriyie, 2020).

The relationship between communication quality and outcomes is direct and empirically validated. Studies demonstrate correlations between nurse-patient communication and patient satisfaction, with inadequate communication time emerging as a primary source of dissatisfaction (Lotfi et al., 2019). Beyond satisfaction, effective communication positively affects clinical outcomes including shorter length of stay and reduced adverse events(Zhang et al., 2020), as well as physiological and psychological benefits(Liu et al., 2025). Importantly, the relationship is reciprocal: nurses who report meaningful connections experience higher job satisfaction, stronger organizational commitment, and lower burnout rates, thereby improving patient care while supporting workforce sustainability(Li et al., 2024).

It is important to distinguish relational care as a nursing process from its measured outcomes. Relational care refers to the deliberate nursing practice of establishing therapeutic presence, engaging in meaningful communication, and building trust with patients. Patient satisfaction, communication quality scores, and clinical outcomes represent measurable consequences of this relational process, but should not be conflated with the practice itself.

The Workforce Crisis: A Leadership Imperative

The nursing profession faces an unprecedented sustainability crisis. A landmark JAMA Network Open meta-analysis examining nearly 290,000 nurses revealed that burnout significantly compromises both patient safety and care quality. Units with burned-out nurses demonstrated markedly poorer safety climates, higher rates of adverse events and medication errors, and substantially more missed care. Patient satisfaction and nurse-assessed quality metrics showed similar deterioration. These robust associations across multiple domains establish burnout as a systemic threat to healthcare delivery rather than merely an individual challenge(Li et al., 2024).

These associations persist across demographics, clinical specialties, geographic regions, and time periods, establishing burnout as a systemic threat rather than an individual failing. A systematic review in the International Journal of Nursing Studies found that nurse burnout constitutes an occupational hazard with far-reaching consequences for nurses, patients, healthcare organizations, and society as a whole. The review found that burnout was significantly associated with compromised safety and quality of care, reduced patient satisfaction, and diminished organizational commitment and productivity among nurses(Jun et al., 2021).

While burnout manifests at the individual level through emotional exhaustion, depersonalization, and reduced accomplishment, its causes are fundamentally systemic: inadequate staffing ratios, excessive documentation demands, and organizational cultures prioritizing productivity over wellbeing. The workforce crisis thus represents a systemic threat to healthcare delivery, not merely an aggregation of individual struggles.

Each burned-out nurse represents not only personal suffering but also quantifiable risk to patient safety. The economic implications are equally sobering: high turnover rates generate substantial costs in recruitment, training, and lost institutional knowledge. Burnout contributes to absenteeism, reduced engagement at work, and ultimately, departure from the profession (Kelly et al., 2021).

The moral dimension cannot be ignored. Nurses are motivated by a commitment to care, provide comfort, and advocate for vulnerable patients. When organizational structures hinder the fulfillment of this commitment, moral distress results. Properly deployed technology has the potential to help address this crisis by automating repetitive documentation tasks and potentially restoring time for relational aspects of care. This is not merely a retention strategy; it is an ethical imperative.

The Risk of Throughput Mentality

Despite compelling evidence for protecting relational time, healthcare organizations face powerful countervailing pressures. Financial incentives often reward volume over value, patient throughput over patient experience. The risk is that AI-enabled documentation becomes a tool for intensifying rather than humanizing nursing work.

Warning signs include productivity metrics that prioritize speed over depth; staffing models that assume maximum efficiency; resistance to "unproductive" time spent in unhurried conversation; and technology adoption without workflow redesign. The consequences are predictable: nurses experience technology as a burden rather than a resource, patient satisfaction declines despite shorter wait times, and fundamental problems persist (Jedwab et al., 2023, Li et al., 2024).

When efficiency gains are used to increase throughput rather than improve care quality, there is a risk that nurses may become increasingly stretched, potentially leading to more errors and additional documentation requirements, which could necessitate further automation(Moy et al., 2021, Sarraf and Ghasempour, 2025). Meanwhile, the fundamental issue of insufficient time for patient connection remains unresolved.

Additional unintended consequences deserve attention: cognitive load may shift rather than decrease as nurses learn new systems and manage AI-generated alerts(Harmon et al., 2023, Wisner et al., 2019); alert fatigue can emerge when systems generate excessive notifications; and new documentation demands may arise as organizations add AI oversight requirements or quality assurance processes(Ancker et al., 2017).

Equity considerations warrant attention: AI implementation benefits may not be uniformly distributed across healthcare settings, potentially widening disparities between well-resourced and under-resourced institutions(Osonuga et al., 2025). Furthermore, protecting relational time carries professional boundary implications; the emotional labor inherent in therapeutic relationships requires organizational recognition and support structures to prevent compassion fatigue(Chu, 2024, Wolotira, 2023).

Leadership Strategy: Protecting the Human Moment

Transforming AI efficiency into genuine care improvement requires deliberate leadership action. We propose the following framework:

Redefine Organizational Success Metrics

Healthcare systems must explicitly measure and value relational care as performance indicators: nurse-patient interaction time (direct measurement of unhurried bedside time); patient perception of connection (assessing whether patients felt seen, heard, and cared for); nurse reports of care adequacy (self-assessment of sufficient time); and burnout tracking (regular assessment of exhaustion and fulfillment). Success in AI implementation should be defined not by increased throughput but by improved relational indicators.

Mandate Protected Time Policies

Leadership must establish explicit policies protecting reclaimed time: protected presence protocols (sacrosanct time for patient interaction); minimum time standards (evidence-based guidelines for therapeutic communication); workload caps (using AI gains to reduce ratios rather than expand caseloads); and documentation white space (ensuring saved time isn't immediately filled with additional tasks). These policies must be formalized in job descriptions, performance evaluations, staffing budgets, and unit productivity metrics, making them structural rather than aspirational. Critically, implementation requires designated accountability (nurse managers monitoring compliance), transparent measurement (time-tracking audits), and enforcement mechanisms (consequences for systematic violations). These protections should be incorporated into collective bargaining agreements, where applicable, to ensure they have contractual force beyond the discretion of administrators.

Redesign Staffing Models

Traditional calculations based on task completion must give way to models that incorporate relational care requirements: acuity systems that include psychosocial needs; skill-mix optimization using AI to assign appropriate tasks while preserving professional nursing time for relationships; and support role enhancement, freeing professional nurses for clinical and relational work. Financial investment in improved staffing may be offset by reduced turnover costs, fewer adverse events, and improved satisfaction scores.

The business case for protecting relational time is compelling: nurse turnover costs an per nurse, while organizations with higher nurse engagement demonstrate lower turnover, fewer adverse events, and improved patient satisfaction scores that directly impact reimbursement under value-based purchasing(Nsi Nursing Solutions, 2022, Moore et al., 2025).

Train for Presence

While skills in efficiency are commonly taught, therapeutic presence requires intentional development. This includes communication competency training through evidence-based programs, opportunities for reflective practice to support emotional processing, structured coaching and mentorship, and recognition of exceptional relational care.

Ensure Ethical AI Implementation

Technology deployment must prioritize wellbeing over efficiency: nurse involvement in design; adequate training and support; continuous evaluation assessing impact on satisfaction and outcomes; and transparency, maintaining human oversight. As emphasized in recent reviews, successful integration demands interdisciplinary

collaboration, robust ethical frameworks, and technological advancements(Michalowski et al., 2026) .

Critically, AI implementation must respect and support nurse autonomy at all professional levels. Registered nurses, advanced practice nurses, and nursing assistants each bring distinct perspectives on workflow integration; inclusive governance structures should ensure representation across roles in design, implementation, and evaluation decisions. Protecting professional scope of practice during AI adoption requires vigilance against task substitution that undermines nursing judgment.

Create Accountability Structures

Leadership commitment must be operationalized through: executive scorecards that include relational metrics; board-level oversight with regular reporting; financial incentives that link compensation to retention and quality; and public commitments that explicitly prioritize human connection alongside technological advancement.

Future Directions for Research and Measurement

Important questions remain for investigation. Measurement challenges persist in reliably and feasibly quantifying therapeutic presence within clinical workflows. Existing satisfaction surveys capture only crude proxies for genuine connection. Dose-response relationships remain unclear: What is optimal interaction timing for various populations and contexts?

Technology evaluation frameworks often focus primarily on technical performance, but there is a need for approaches that prioritize human outcomes. These should assess whether AI enhances or detracts from therapeutic relationships, reduces or exacerbates burnout, and improves or harms patient wellbeing. Economic modeling should address the return on investment for protecting relational time. Implementation science should investigate the organizational conditions under which AI successfully restores, rather than erodes, nursing presence. Comparative effectiveness research is needed to determine how different deployment approaches affect outcomes.

Research should also investigate the sustainability of time savings when AI is deployed at scale, as initial efficiency gains demonstrated in controlled settings may not persist across diverse real-world clinical environments.

These priorities should guide funding decisions and shape the agenda for nursing informatics and health services research communities.

Conclusion: A Call to Courageous Leadership

We stand at a decisive moment. Technologies now emerging have genuine potential to transform practice, to liberate nurses from documentation drudgery and restore time for human connection that defines excellent care. But this potential will be realized only through deliberate, courageous leadership that resists the gravitational pull of the throughput mentality.

Caring cannot be automated. The therapeutic relationship, forged through attentive listening, authentic presence, and sustained engagement, remains irreducibly human. No algorithm can replicate the comfort of a nurse's hand on a frightened patient's shoulder, the wisdom conveyed through practiced clinical gaze, or the advocacy that emerges from truly knowing a patient as a whole person.

Technology should amplify these irreplaceable human capacities, not replace them. AI should serve as the nurse's assistant, not a replacement. And the time technology creates should be protected as sacred- dedicated to relational work that improves outcomes, enhances satisfaction, and restores meaning to practice.

This requires moral courage from healthcare leaders: prioritizing care quality over short-term financial metrics, investing in staffing over maximizing margins, and measuring success by human flourishing rather than industrial efficiency. It also requires political will from policymakers: reimbursement models must evolve to reward relationship-centered care; regulations should mandate adequate staffing based on therapeutic need; licensing and accreditation standards should explicitly incorporate relational care competencies.

Concrete policy levers include: reimbursement reform linking payment to relationship-centered care metrics; regulatory mandates for minimum nurse-patient interaction time; accreditation standards incorporating relational care competencies; and legislation requiring AI implementation impact assessments on nursing workforce wellbeing. Stakeholder-specific actions include: for policymakers, embedding relational care metrics in quality reporting programs; for health system executives, establishing board-level accountability for nurse wellbeing indicators; for nursing leaders, integrating protected time policies into collective bargaining agreements; and for professional organizations, developing evidence-based guidelines for AI governance in nursing practice.

Most fundamentally, it requires collective recommitment to nursing's foundational values. Florence Nightingale recognized that healing is rooted in the nurse's presence with patients, a truth that remains relevant in the age of artificial intelligence (Riegel et al., 2021). The essence of nursing is not what we document but whom we serve, not how quickly we work but how fully we care.

The promise of artificial intelligence in healthcare is real. But whether that promise yields a more humane profession or a more extractive one depends entirely on the

choices we make today. Will we allow efficiency gains to be captured by throughput demands? Or will we protect them as the space in which nurses finally have time to see patients, to listen, to comfort, to advocate, to nurse?

The answer will determine not only the future of the profession but the character of healthcare itself. Let us choose wisely. Let us choose courageously. Let us reclaim the human moment.

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Declaration of interests

☐ The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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