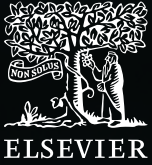ELSEVIER Health

CRITICAL THINKING SKILLS

Nursing in the Age of Healthcare Technology

Health

ELSEVIER

Technology has revolutionised nursing practice and healthcare systems. Whether it's the increased delivery of virtual care, the connectivity of patient records, or the implementation of personalised treatment plans, these digital innovations continue to redefine the field. However, amidst this transformation, vital elements of nursing practice have remained unchanged.

It is important to recognize that these evolving models often overlook key decision-makers within the system and the crucial clinical decision-making aspect of their development. As new models of care delivery including telehealth and virtual wards become the norm, it is vital that all healthcare professionals are engaged in their development, in order to maintain the relationship between care providers and their patients.

While new technologies and care delivery models have emerged, many clinicians, nurses, and allied health professionals continue to rely on traditional processes that remain effective and part of the normal practice, such as nursing triage and care planning documentation. As the healthcare field advances, there is an opportunity and responsibility to support these well-established practices alongside new innovations. By thoughtfully integrating both the old and the new, we can leverage technology to augment rather than replace the knowledge and skills of healthcare professionals.

In the following whitepaper, we will discuss:

- Why organisations need to foster an environment that enables and supports nurses' critical thinking and safe decision-making to maintain high-quality patient care.

- Two theories that encourage critical thinking and patient safety.

- The role of knowledge-driven digital technology in remote care.

- How Clinical Decision Support solutions contribute to improved patient safety and well-being.

Laís Junqueira
Quality, Patient Safety and Innovation Manager at Elsevier

Tim Morris
Vice President of Go-to-Market and Clinical Best Practice Council Lead at Elsevier

Clinical Best Practice Council

FOSTERING CRITICAL THINKING TO MAINTAIN HIGH-QUALITY PATIENT CARE

The evolving needs of healthcare delivery are driven by factors such as workforce shortages and the growing prevalence of comorbidities among patient populations. As a result, nurses are taking on more diverse roles beyond their usual duties, requiring them to manage various tasks for effective patient care. Although an increased workload is prevalent across many industries, the healthcare sector has specific challenges that further complicate this scenario. Nursing tasks in particular, are inherently intricate and multifaceted. These tasks not only require excellence in their execution but also demand the application of critical thinking skills to navigate complexities and ensure precision in patient care.

Critical thinking is commonly defined as "the mental process of active and skilful perception, analysis, synthesis, and evaluation of collected information through observation, experience, and communication that leads to a decision for action".[1] Embracing critical thinking in healthcare paves the way for more effective analysis of conditions, current treatment plans, and the ability to predict outcomes and foresee potential issues.[2,3] For nurses, armed with multifaceted knowledge to handle the various situations encountered during their shifts, it is an essential process for safe, efficient, and skilful nursing interventions.

Creating an environment that nurtures critical thinking requires a comprehensive understanding of decision-making processes. To address this, we recommend aligning with the concepts of the dual process theory, which explores the processes that have direct implications on clinical decision-making and patient care.

THE DUAL-PROCESS THEORY

The dual-process theory is a prominent framework in psychology that suggests two distinct cognitive processes that operate in human thinking and decision-making. Cognitive scientist Daniel Kahneman refers to these as System 1 and System 2:[1,1]

SYSTEM 1 IS INTUITIVE, AUTOMATIC, AND FAST THINKING.

In day-to-day life, System 1 thinking kicks in for regular activities that we do effortlessly, without dedicating much brain power, such as brushing our teeth. In clinical settings, System 1 thinking facilitates quick recognition of typical symptoms, leading to immediate diagnoses in medical emergencies or textbook cases.

Example: During a medical emergency, a healthcare professional's quick recognition of typical symptoms, such as radiating chest pain and shortness of breath, diaphoresis, and nausea may trigger an immediate differential diagnosis of a myocardial infarction (MI) without analytical deliberation.

SYSTEM 2 IS MORE REFLECTIVE, DELIBERATE, AND SLOWER.

For example, System 2 thinking comes into play when healthcare professionals need to make deliberate decisions based on thorough analysis, like selecting appropriate treatments for complex patients.

Example: System 2 thinking becomes vital when presented with a case resembling a typical heart attack but revealing nuances upon closer examination. In the case of Takotsubo cardiomyopathy, symptoms mirror those of a conventional MI, often triggered by significant physical or emotional stress, while MI is typically caused by a blockage in the coronary arteries. This syndrome requires the astute application of System 2 thinking – a slower, more deliberate cognitive process – to discern subtleties in symptoms, evaluate additional factors, and differentiate it from an obstructive MI.

AN INTERPLAY BETWEEN SYSTEMS 1 AND 2

Nursing triage provides a strong example, of an environment characterised by high pressure, where decisions are often based on incomplete, ambiguous, or misleading information cues. This has been exacerbated by the growth of telehealth, teletriage and virtual healthcare, where the absence of the patient's physical presence becomes a factor, removing some of the traditional visual and auditory cues in decision-making.

In this stressful and time-sensitive scenario, System 1 thinking by nature is more susceptible to errors, especially when dealing with complex patient cases. By placing an enhanced focus on decision-making – a fundamental element of safe systems – system architects can design solutions that incorporate knowledge cues and prompts, facilitating an interplay between Systems 1 and 2 as and when needed. These user-centred design strategies, such as nudges, can be leveraged to streamline choices, thereby aiding in informed decision-making for both patients and healthcare professionals.

With an increased awareness and understanding of such cognitive processes involved in making triage judgements and decisions, healthcare organisations can pinpoint elements within the system that necessitate improvement to better support the decision-making process.

THE ROLE OF NUDGE THEORY

Dual-process theory forms the basis of nudging, elucidating the dynamics of unconscious actions. Simultaneously, it gives the opportunity to either bring deliberate awareness to actions, that is, involving System 2, or modify the context to guide nursing staff toward better choices effortlessly, invoking System 1.

Derived from behavioural economics and psychology, the concept of nudge emerges as a subtle yet influential intervention to shape individuals' behaviours, particularly in situations where cognitive biases might otherwise impact safety. Nudges are a powerful tool that can aid in decision-making by providing context cues, knowledge prompts and ultimately bridging the "Know-Do Gap".

Nudges fundamentally guide users while respecting their freedom of choice, thereby enhancing the sustainability of safety and improving the quality of care.

To delve deeper into the concept of nudges and how they can aid patient care, the whitepaper titled, 'Quality and Patient Safety: Nudging towards safety' provides further insight.

ENCOURAGING INFORMED DECISIONS TO AID PATIENT SAFETY

The gap between theoretical knowledge and practical application remains a challenge for clinicians, nurses, and allied health professionals. The complexities of "doing the right thing" are exacerbated by pressures stemming from staff shortages, competing priorities, and complex patient cases. Nurses must consider numerous and potentially competing factors when making decisions to meet patient, family and organizational needs. In acute care, data has suggested that nurses are on average making decisions in 30 seconds which has a significant impact on cognitive load.[4]

The introduction of system-wide consistent evidence-based plans not only improves the decision-making of the nurse in this interaction but levels up the skills of all nurses who care for the patient and ensures standardised best practices.

> Nurses are, on average, making decisions in
> # 30
> seconds[4]

GUIDANCE TO SUPPORT CLINICAL DECISION-MAKING IN HEALTHCARE ORGANISATIONS

Incorporating nudges proves beneficial in guiding nurses, allied health professionals, and patients towards safer decisions. The implementation of reminders and visual cues serves to assist patients in adhering to prescribed medication regimens, thereby reducing the likelihood of medication errors. Additionally, digitalising manual tasks, such as prescriptions, and the integration of Clinical Decision Support (CDS) Care Planning solutions contribute to evidence-based decision-making. This integration not only enhances patient safety and improvement but also elevates the overall quality of care delivered.

Consider the scenario of a nurse starting a shift at an intensive care unit (ICU) and receiving a postsurgical case. Upon logging into the electronic health record (EHR), the nurse reviews the care plan initiated by the previous nurse. This plan outlines interventions, parameters to be measured, and actions to be performed based on patient assessment and the best available guidance. As an example, if blood loss management is part of the patients' plans, then the subsequent actions are based on the clinical practice guidelines. From here, the nurse's clinical decision-making is nudged by both a checklist and guidance, mitigating errors of omission and steering them towards evidence-based practice.

Efficiently training nurses and healthcare providers to adeptly apply these behavioural principles not only promotes patient engagement but also fuels a culture of continuous improvement. Consequently, this approach leads to enhanced care experiences and improved outcomes, emphasising the transformative potential of integrating behavioural insights into healthcare practices.

ENSURING QUALITY IN REMOTE CARE AMID STAFF SHORTAGES

As nudges strive to enhance workflow and guide decision-making towards evidence-based care, healthcare systems continue to evolve. Remote care has emerged as a key aspect of modern healthcare delivery, especially amid persisting nursing shortages. While these advancements are helping to reshape the healthcare landscape, they also bring challenges and important questions about the skills nurses and allied healthcare professionals require to navigate this new era successfully.

According to the Clinician of the Future 2023 report, 71% of clinicians (doctors and nurses) consider it desirable for nurses to be digital experts.[5] This means adaptability to new technologies, effective communication in virtual settings, and the ability to provide empathetic care remotely are becoming increasingly vital skills for healthcare professionals.

The focus is on upholding quality and safety standards and the challenge lies in ensuring that virtual care is of the same standard as in-person care, especially when healthcare staff aren't physically there or have been redeployed to different departments due to staffing shortages. This delicate balance demands attention, given the potential impact on patient outcomes and experiences.

Within virtual care settings, communication complexities become more pronounced. Ensuring effective communication is crucial and plays a key role in establishing a trusting relationship with patients, families, and caregivers.[6] The integration of virtual wards underscores the necessity for nurses, especially novice nurses, to harness strong communication skills to extract critical patient information without face-to-face interaction.

71%
of clinicians (doctors and nurses) consider it desirable for nurses to be digital experts[5]

These challenges underscore the need to continuously refine communication strategies beyond traditional face-to-face interactions through:

- **Standardised protocols:**
  Implementing standardised communication protocols tailored for virtual scenarios to streamline information exchange and ensure thorough patient assessment during triage processes.[7]

- **Specialised training:**
  Participating in training programs focused on effective communication techniques specific to virtual platforms, equipping nurses with skills to engage patients and gather comprehensive information remotely.[8]

- **Technology utilisation:**
  Leveraging technology-enabled tools such as secure messaging platforms or video conferencing with enhanced features to bridge the gap created by physical absence, facilitating detailed assessments and clearer communication.

- **Feedback and improvement:**
  Soliciting feedback from both patients and colleagues to identify areas for improvement in virtual communication methods, enabling continuous refinement of these strategies.

- **Adaptability and flexibility:**
  Maintaining adaptability and flexibility in approach, continuously learning and adapting to new communication tools and methods as virtual care evolves.

- **Collaborative learning:**
  Engaging in collaborative learning sessions or forums where nurses can share best practices and insights on effective communication strategies in virtual care settings.

NURSES' TACTICS FOR SUCCESSFUL REMOTE CONSULTATIONS

Nurses have a multitude of ways to ensure a successful consultation in remote care settings, including:

- **Case studies:** Employing case studies as a training method enables nurses to engage critical thinking skills in real-life situations frequently faced in virtual settings.

- **Simulation exercises:** Integrating simulation exercises within training programs offers practical, hands-on experience in navigating remote consultation scenarios, encompassing triage procedures and decision-making processes.

- **Standardised virtual care protocols:** Stressing the significance of creating standardised virtual care protocols and guidelines for prevalent conditions underscores the importance of adhering to evidence-based practices and guidelines as a cornerstone of effective virtual healthcare delivery.

- **Non-verbal cues:** Utilisation of non-verbal cues to demonstrate engagement and active listening in video consultations (nodding, leaning forward).[9]

One of the most notable challenges in remote care provision is building strong relationships with patients when there are no visual cues. Nurses must pivot to alternative methods to foster connections, relying heavily on voice, tone, and language nuances. Strategies centred on building trust and rapport through vocal cues and inflexions become instrumental in delivering effective care, whilst working at a higher level of suspicion to ensure clinical safety. Effectively conveying empathy is crucial in the provision of holistic care within a telehealth framework, underscoring the role of relational aspects in virtual healthcare settings.
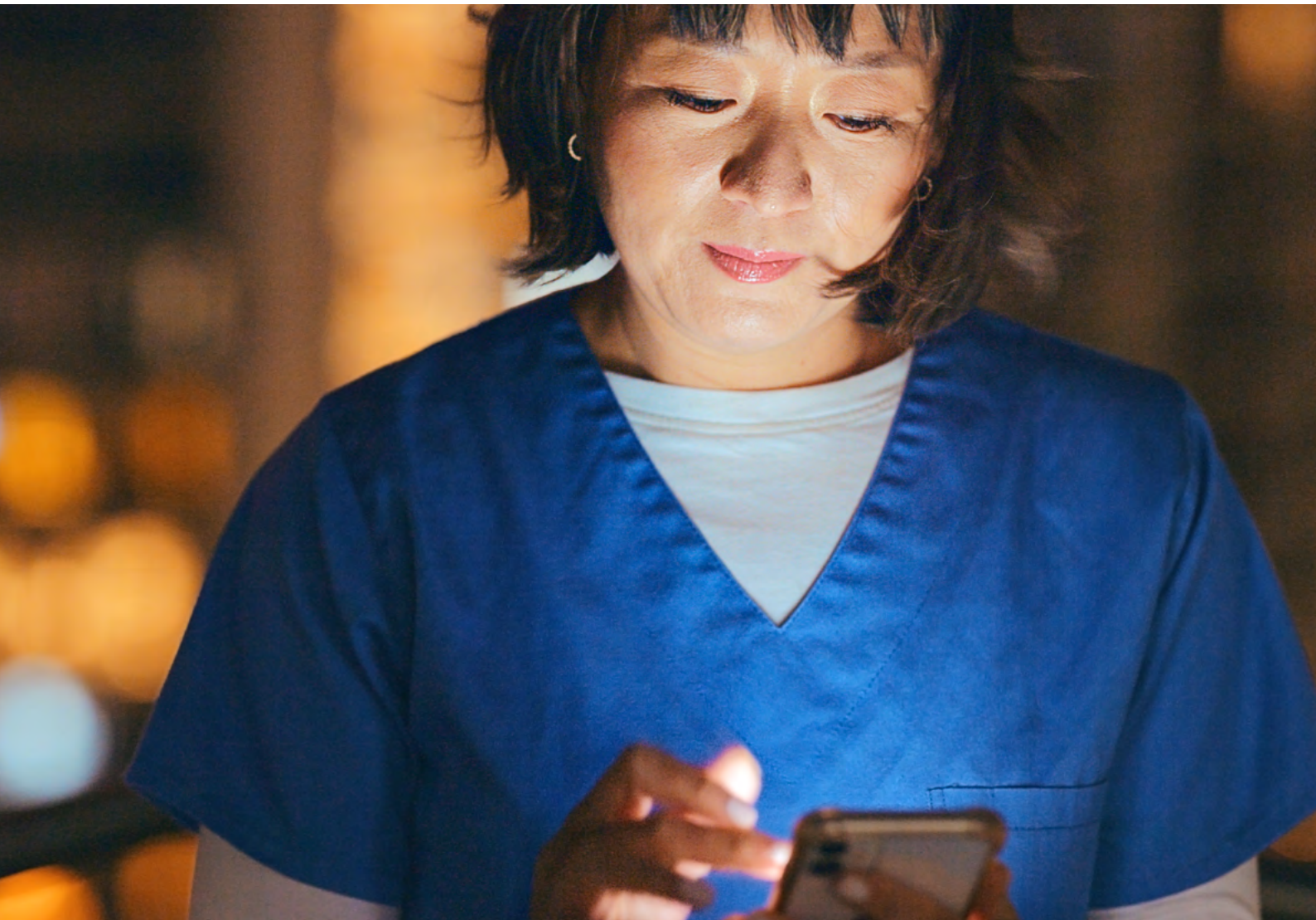
ENHANCING PATIENT SAFETY WITH CLINICAL DECISION SUPPORT SOLUTIONS

Clinical Decision Support solutions play a vital role by offering real-time evidence-based guidance to nurses, which becomes increasingly crucial amid nursing shortages. The significance of such solutions lies in their ability to provide timely, informed, and trusted support to nurses, aiding them in delivering optimal care.

Order sets and care plans are examples of CDS solutions that can help the healthcare workforce to make informed decisions at the patient's bedside.

By optimising processes and facilitating quick access to relevant information, CDS solutions become instrumental in supporting nursing decision-making, especially in resource-constrained settings. Additionally, the potential advantages of CDS solutions extend to remote monitoring and bolstering patient safety. These solutions enable consistent and remote tracking of patient data, contributing to proactive care and enhanced patient outcomes. By leveraging technology to monitor patients remotely, CDS solutions play a pivotal role in ensuring continuous oversight and timely interventions, ultimately contributing to improved patient safety and well-being.

> Clinical Decision Support solutions offer **real-time evidence-based guidance** to nurses

ENHANCING CLINICAL DECISION-MAKING WITH ORDER SETS AND CARE PLANNING

A real-world example showing the positive impact of Elsevier's Clinical Solutions in delivering evidence-based guidance can be seen in the results at Emirates Health Services. Elsevier's Order Sets and Care Planning were implemented across the health provider's 16 inpatient facilities, to support physicians and nurses in their decision-making and foster alignment with established evidence-based guidelines. The utilisation of the Order Sets enabled physicians to save time and increase efficiency, with analysis estimating that approximately 894 hours of physicians' time could potentially be saved with this solution if used when admitting patients. Moreover, these Clinical Decision Support solutions also enabled healthcare professionals to establish a benchmark for high-quality, standardised care.

CONCLUSION

As healthcare technology advances, there is a growing need for organisations to design decision-making architectures that enable nurses to be equipped with enhanced critical thinking and communication skills to continue to deliver safe and high-quality virtual care. This transformative shift demands a concentrated focus on clinical decision-making support and nudge tools.

Virtual care has the potential to improve healthcare outcomes and free up resources within healthcare systems. However, there remains a need to invest in comprehensive nursing training programs that specifically target the development of these crucial skills, ensuring that the workforce can effectively navigate the nuances of virtual care delivery.

> For more Nursing resources please visit Elsevier Health's Nursing resource page or to learn more about the 'Journey to zero harm' click here.

ABOUT THE AUTHORS

TIM MORRIS

Vice President of Go-to-Market and Clinical Best Practice Council Lead at Elsevier

With nearly 30 years of nursing and healthcare experience - Tim specialises in Knowledge Management, Clinical Decision support and Hospital Workflow Solutions. He uses his extensive expertise in healthcare decision support and knowledge management systems through speaking engagements, white papers, and publications on topics such as AI, new models of care, nursing practice, driving innovation through the use of cutting edge technology and data-driven insights.

LAÍS JUNQUEIRA

Quality, Patient Safety and Innovation Manager at Elsevier

Laís is a member of the Scientific Council of the Brazilian Society of Quality of Care and Patient Safety, an honorary member of the Patient Safety Foundation in Chile and an associate member of the International Association of Innovation Professionals. She provides strategic counsel to organisations on how evidence-based information and technology can improve patient safety and clinical outcomes and how organisations can empower healthcare professionals on their path to deliver high quality and safer care through innovative solutions.

ABOUT THE CLINICAL BEST PRACTICE COUNCIL

Elsevier's Clinical Best Practice Council consists of a team of industry experts, on hand to offer strategic and practical support in the delivery of knowledge-based care processes, supported by EHR integrated, clinical decision support systems. We help you define the strategy, the systems, the processes, and the technology needed to bring knowledge to the point of care, delivered in a manner deemed most effective for your organisation. For more information on the Clinical Best Practice Council click here.

1   Papathanasiou, I. V., Kleisiaris, C. F., Fradelos, E. C., Kakou, K., & Kourkouta, L. (2014). Critical Thinking: The Development of an Essential Skill for Nursing Students. Acta Informatica Medica, 22(4), 283-286. https://doi.org/10.5455/aim.2014.22.283-286.

2   13 May 2021 Advanced Clinical Practice Advanced practice: Critical thinking and clinical reasoning, British Journal of Nursing. Available at: https://www.britishjournalofnursing.com/content/advanced-clinical-practice/advanced-practice-critical-thinking-and-clinical-reasoning/.

3   Martí-Bonmatí, L. Embracing critical thinking to enhance our practice. Insights Imaging 14, 97 (2023). https://doi.org/10.1186/s13244-023-01435-4.

4   Parker CG. Decision-making models used by medical-surgical nurses to activate rapid response teams. Medsurg Nursing. 2014;23(3):159–164.

5   Clinician of the future 2023 education edition | elsevier www.elsevier.com. Available at: https://www.elsevier.com/promotions/clinician-of-the-future-2023#6mbg3gsptpclq1hugw29vh.

6   OJIN. Available at: https://ojin.nursingworld.org/table-of-contents/volume-28-2023/number-2-may-2023/articles-on-previously-published-topics/pep-into-telehealth/.

7   Vardaman JM, Cornell P, Gondo MB, Amis JM, Townsend-Gervis M, Thetford C. Beyond communication: the role of standardized protocols in a changing health care environment. Health Care Manage Rev. 2012 Jan-Mar;37(1):88-97. doi: 10.1097/HMR.0b013e31821fa503. PMID: 21709564.

8   Sharon MacLean, Michelle Kelly, Fiona Geddes, Phillip Della, Use of simulated patients to develop communication skills in nursing education: An integrative review, Nurse Education Today, Volume 48, 2017, Pages 90-98, ISSN 0260-6917, https://doi.org/10.1016/j.nedt.2016.09.018.

9   ACI HealthVirtual care: A guide to a successful virtual consultation. Available at: https://aci.health.nsw.gov.au/__data/assets/pdf_file/0009/654399/Virtual-care-a-guide-to-a-successful-virtual-consultation.pdf.

Health

ELSEVIER