The Sentinel At The Bedside: Critical Evaluation Of The Nurse's Role In Early Detection Of Sepsis Based On Protocol Effectiveness And Clinical Acumen

Maryam Ibrahim Hadi Zabani[1], Fawaz Abdarab Alnaby AL_ Qariqri[2], Ibrahim Yahya Mohamed Alwdani[3], Rayan Abdullah Ali Almotiri[4], Naif Hassan Mohammed Alzahrani[5], Hanan Ali Al Maqadi[6], Najaw Abduaalh Rashed Alsubai[7], Najwa Mohammed Ahmed Hadi[8], Hasnah Ibrahim Mohammad Alqasimi[9], Saeed Mohammed AL Zhrani[10], Yahya Ali Yahya Alsawadi[11], Salam Muthes Saif Aldosari[12], Abdulaziz Ahmed Hassan Alzahrani[13], Mohammad Yahya Mohammad Alwdani[14], Nouf Mohammed Jubran Alsubyani[15], Bandar Mohammed Ramadan Hawsawi[16]

[1-16]*Jeddah Mental Health Hospital*

Abstract

Background: Sepsis is a worldwide public health priority in which patient outcomes are increasingly dependent on early detection. Nurses, being the most regular healthcare providers to have contact with patients, are the key sentinels of detection in this endeavor. The modern challenge is to properly balance the integration of standardized screening protocols with the irreplaceable factor of nursing clinical judgment.

Methods: This review synthesizes 2014-2024 to analyze the nurse's role in the early identification of sepsis. It critically evaluates the efficacy of standardized screening tools like NEWS and qSOFA across various settings and the interplay between protocol-driven care and clinical acumen.

Results: Evidence exists that while tools like NEWS provide a critical, sensitive safety net, they can be non-specific and cause alert fatigue. Alternatively, qSOFA, though specific, is poor in sensitivity and thus may result in a missed diagnosis. The nurse's function transcends calculation to interpretation of trends, triggering rapid response and care coordination. The primary observation is that no single strategy of rigid protocol adherence or unaided clinical judgment is sufficient. The optimal detection is with a synergistic model where evidence-based tools structure and facilitate the nurse's logical and intuitive reasoning, particularly for complex cases in atypical populations.

Conclusion: The optimal sepsis defense is an empowered, critically thinking nurse enabled by intelligent technology and a culture of psychological safety. All future efforts must be in the domains of education, human-centered technology development, and research into next-generation context-aware technologies.

Keywords: Sepsis, Early Diagnosis, Nursing Assessment, Clinical Decision-Making, Patient Safety, Clinical Protocols.

Introduction

Sepsis, defined as a dysregulated host response to infection that causes life-threatening organ dysfunction, is a worldwide, albeit severe, health issue (Singer et al., 2016). Sepsis is a major cause of death and has, in recent times, been estimated to be responsible for one death in five worldwide (Rudd et al., 2020). The pathophysiologic progression of sepsis is a rapid and often insidious decline, with favorable identification and treatment being delayed by several hours, with the risk of doubling or tripling mortality (Rhodes et al., 2017). The "golden hour" trauma analogy has been increasingly applied

to sepsis, describing the fact that early, favorable-directed therapy within the first hour of recognition optimizes survival (Levy et al., 2018).

In this time-limited competition, the registered nurse plays a uniquely critical role. Nurses, as the first-line caregivers at the bedside, are actively involved in constant patient evaluation, monitoring for minute changes in condition, and often the first to appreciate the earliest, non-specific clinical indicators of deterioration (Wood et al., 2019). This "sentinel at the bedside" function places the nurse squarely in the middle of any successful early warning system for sepsis. The evolution of sepsis management over the past decade has been significantly shaped by the introduction and widespread implementation of standardized screening tools and care bundles, such as those promoted by the Surviving Sepsis Campaign (Evans et al., 2021). These protocols are designed to objectify the detection process, reduce reliance on individual intuition, and create a systematic approach to identifying at-risk patients.

But the spread of these tools has triggered a fierce debate in nursing and medical literature on their effectiveness, their limitations, and most importantly, their effect on the professional practice of nursing. This review aims to integrate the evidence from the past decade (2014-2024) to address three interrelated themes. First, it will critically evaluate evidence for the most common sepsis screening instruments—e.g., the National Early Warning Score (NEWS) and quick Sequential Organ Failure Assessment (qSOFA)—assessing their performance across different clinical settings. Second, it will elaborate further on the nurse's specific role in taking action on screening results, including addressing the importance of initiating rapid response systems and the chain of survival. Finally, and foremost, this review will discuss the complex and often contentious interaction between protocol-based care and the imperative of nursing clinical judgment. It will argue that the optimal defense against sepsis is neither rigid adherence to a checklist nor reliance on intuition, but rather an advanced combination of both in which the tool informs the thinking and the thinking situates the tool within its appropriate context.

The Landscape of Sepsis Screening Tools: NEWS, qSOFA, and Beyond

The relentless global sepsis burden has necessitated rapid, reproducible screening tools to facilitate early intervention. The basis of this effort has been the development and validation of standardized screening tools, whose aim is to distill the challenging, often subtle clinical presentation of sepsis to simple, actionable scores. These instruments are designed to allow frontline staff, most notably nurses, to systematically screen at-risk patients in difficult clinical environments. By providing a structured process of assessment, these instruments seek to make the subjective early warning signs of deterioration more objective, reducing reliance on mere intuition and creating a common vocabulary for communicating patient risk. But alongside the abundance of tools has come the realization that their efficiency is not absolute; it is adversely dictated by the clinical setting, the patient population, and how they are integrated into the workflow of the health team. The next section will perform an in-depth comparison of the two best-researched tools—the National Early Warning Score (NEWS) and the rapid Sequential Organ Failure Assessment (qSOFA)—and explore the necessary subtleties of their application throughout the healthcare continuum.

The National Early Warning Score (NEWS) and NEWS2: An Extensive Track-and-Trigger System

The National Early Warning Score (NEWS), and subsequently NEWS2, were developed by the Royal College of Physicians in the UK as an evidence-based track-and-trigger tool to identify adult patients at risk of developing acute illness, including sepsis (Score, 2017). Its foundation is the compilation of six basic physiological parameters: respiration rate, oxygen saturation, systolic blood pressure, pulse rate, consciousness level (on the AVPU scale), and temperature. The six parameters are each assigned a score of 0 to 3, and the composite score decides the degree of clinical urgency, enabling nurses to escalate care in accordance with an unambiguous pre-defined protocol. The new NEWS2 version incorporated the major enhancements, namely a new scoring system for hypercapnic respiratory failure patients (e.g., COPD patients) and the alteration of the hypotension and hypoxia threshold score, enhancing its applicability to broader patient populations (Score, 2017).

The significant strength of NEWS/NEWS2 is that it is highly generalizable and sensitive. Its comprehensive design covering a wide spectrum of physiological derangements renders it extremely sensitive to the detection of patients on a trajectory of clinical deterioration. Its predictive ability for adverse outcomes such as unplanned intensive care unit (ICU) admission and hospital mortality has been validated by numerous studies in suspected infection cohorts (Silcock et al., 2015; Usman et al., 2019). For the bedside nurse, NEWS provides a valuable quantitative measure that renders clinical concern objective. A rising NEWS score brings unassailable, objective weight to a nurse's subjective "gut feel" and allows more confident and effective reporting to physicians and rapid response teams (Prytherch et al., 2010). Standardizing the "deterioration language" has been a landmark achievement in patient safety. But this sensitivity is a two-edged sword, for it necessarily entails a sacrifice of specificity to the tool. The same width of parameters that makes NEWS so sensitive also makes it susceptible to false-positive alerts, e.g., in a patient with a pain- or anxiety-induced transient tachycardia. In busy clinical environments, particularly those with electronic health record (EHR)-facilitated alerting systems, this can create "alert fatigue," a pervasive condition in which nurses become desensitized to repetitive, typically clinically insignificant alarms, thereby increasing the chances of missing an actually critical alert in the long term (Bedoya et al., 2019).

The Quick Sequential Organ Failure Assessment (qSOFA): A Tool for Prognostication, Not Screening

Unlike the comprehensive NEWS approach, the quick Sequential Organ Failure Assessment (qSOFA) emerged from the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3) with a distinct, unique aim: to rapidly identify septic patients in non-ICU environments who were at an increased risk of long ICU stay or death (Singer et al., 2016). Its construction is also especially parsimonious and includes just three binary variables: impaired mental state (Glasgow Coma Scale <15), systolic blood pressure ≤100 mmHg, and respiratory rate ≥22 per minute. A score of 2 or greater is positive and is predictive of a higher risk of adverse outcome. Early validation research set qSOFA as a more sensitive alternative to the now aging Systemic Inflammatory Response Syndrome (SIRS) criteria for mortality prediction, which marked its early positioning as an easy bedside screening test, particularly in emergency departments (Seymour et al., 2016).

However, later rigorous studies have revealed major flaws in qSOFA's role as a screening test, essentially discrediting its application in early detection. A high-quality systematic review and meta-analysis by Fernando et al. (2018) concluded that while qSOFA remains highly specific for in-hospital mortality, it is tolerably low at best in sensitivity, typically referenced at 50-60%. This shortcoming is catastrophic to a screening tool, whose primary function is to rule out disease. A 60% sensitive instrument will also miss 40% of sepsis patients, generating a false and dangerous sense of security and leading to injurious delays in lifesaving treatment. Its fault is in its design; by merely picking up late signs of critical organ dysfunction (hypotension and altered mentation), qSOFA is oblivious to the preceding, milder manifestations of sepsis. A patient may have a high fever, deep tachycardia, and elevated lactate—a gross septic picture—but normal mental status and blood pressure, having a non-significant qSOFA score of 0 or 1. This reliance on a finite number of parameters guarantees that it clinically misses the "hyperdynamic" early stage of sepsis, essentially being more useful in its role as a rough prognostic indicator for those already identified as septic but not as an efficient detection tool for nurses on the front line (Scruth & Spooner, 2023).

Comparative Effectiveness and the Clinically Important Role of Context

Usefulness and accuracy of sepsis screening tools are not universal but highly contextual, with extremely varying performance across various clinical contexts and patient populations. This demands a nuanced understanding by nurses, who must bear in mind the relative advantages and disadvantages of each tool in their own clinical environment.

In the Emergency Department (ED) setting of high-acuity patients and rapid triage, the initial advantage of qSOFA's simplicity has been largely overshadowed by the superior performance of NEWS/NEWS2.

Even though qSOFA is helpful to risk-stratify in those patients in whom infection is highly suspected, it fails in the undifferentiated patient population common to an ED. Various comparative analyses have demonstrated that NEWS/NEWS2 is more uniformly accurate than qSOFA in its primary functions of predicting sepsis diagnosis, need for ICU admission, and mortality in this setting (Usman et al., 2019; Singer et al., 2016). The broader physiological view provided by NEWS, including temperature and oxygen saturation, has a better ability to detect the heterogeneous and early presentations of sepsis through the ED.

On the inpatient wards of the general hospital, qSOFA's weakness is more apparent, and the benefit of a tracking system like NEWS is most starkly evident. Here, patients are continuously observed by nurses, and the character of detection is the identification of subtle over-time trends—a methodology in fundamental conflict with qSOFA's static, single-measurement calculation. A nurse who is observing a patient over a period of 12 hours can observe a gradual but steady increase in heart rate, a low-grade fever, or the onset of confusion. Individually, they are meaningless, but taken together, and when charted on an increasing curve of NEWS scores, they represent a powerful predictor of impending crisis. Research by Churpek et al. (2017) and others has uniformly shown that monitoring of multi-parameter scores like NEWS using EHR is far superior to qSOFA forward prediction of clinical deterioration. The nurse's role thus shifts from acting as a mere score calculator to becoming an interpreter of physiological trends, utilizing the tool as a dynamic map of the patient's clinical pathway.

The greatest challenge, perhaps, is found in long-term care facilities and among immunocompromised hosts, such as those undergoing chemotherapy or post-transplant immunosuppression. In these groups, the assumptions behind standard screening instruments are often not applicable. Older patients frequently have "atypical" sepsis, without tachycardia or fever, and with instead non-specific decline such as falls, new-onset incontinence, or delirium (Bruno et al., 2021). Similarly, immunocompromised patients can also have blunted or absent physiological responses due to their disease or medications. Too much reliance on either NEWS or qSOFA in such scenarios can be riskily deceptive, as both tools may not trigger even in the presence of a life-threatening infection. This is the ground where nursing clinical judgment not only comes in handy, but is sine qua non. The nurse's ability to recognize the patient's baseline, their attunement to patterns of atypical presentation, and their watch for very subtle, soft signs—like a mild change in skin turgor, a decline in oral intake, or a report from a family that "she's just not herself"—becomes the key point of data for identification. In these situations, the screen tool must not be an ultimate decision-maker, but a stimulus for subsequent, more reflective clinical thought with the totality of the individual patient (Ginestra et al., 2019).

Table 1: Comparison of Common Sepsis Screening Tools

Feature	NEWS/NEWS2	qSOFA	SIRS Criteria
Components	Respiration rate, O2 saturation, systolic BP, pulse, consciousness, temperature	Altered mentation, systolic BP ≤100 mmHg, RR ≥22/min	Temperature, heart rate, respiration rate, white blood cell count
Scoring	0-20 points	0-3 points	0-4 criteria
Strengths	High sensitivity, tracks trends well, and comprehensive physiological assessment	High specificity for mortality, very quick to perform at the bedside	High sensitivity, simple, long-standing familiarity
Weaknesses	Lower specificity can contribute to alert fatigue	Poor sensitivity, misses many early sepsis cases, not for tracking trends	Low specificity, many non-septic conditions can meet criteria (e.g., pancreatitis)
Best Setting	General wards, ED for monitoring	ED for rapid risk stratification of already-identified infected patients (limited utility)	Largely superseded by newer tools but still used in some institutions

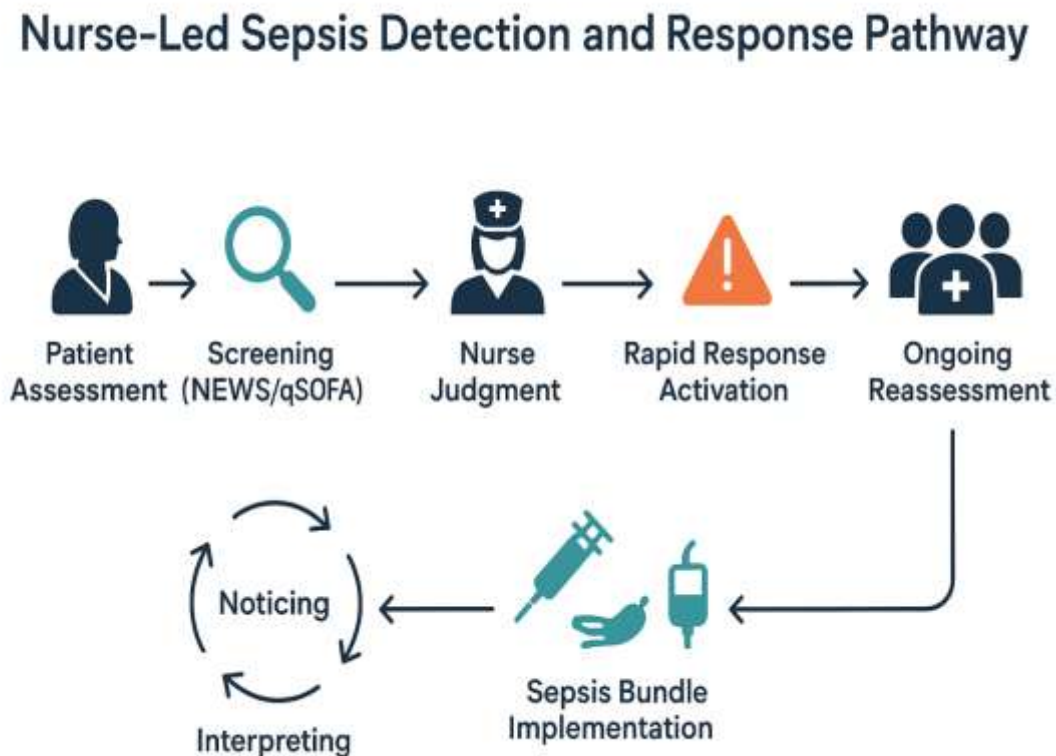**The Nurse as the Catalyst: Provoking Rapid Response and Coordination of Care**

Identifying a patient at risk of sepsis is only the first step. The most important thing that follows is rapid and effective escalation of care. The nurse is the central figure in accomplishing this, as the catalyst who initiates the rapid response machine into action.

From Suspicion to Action: The Decision to Escalate

Requesting an RRT or initiating a sepsis pathway is not a one-off, automatic consequence of a high NEWS score. It is a complex clinical decision involving cognitive and socio-cultural barriers. Nurses must incorporate data from the screening tool, their own clinical assessment, vital sign trends, and their knowledge of the patient's history (Schlak et al., 2021). This amalgamation leads to the development of a "gut feeling" or "concern" that something is wrong, even if there isn't a radically aberrant score. This intuitive cognition is a sanctioned part of competent nursing practice (Côté & Tribble, 2012).

There are, however, some obstacles that can interfere with this decision. "Afferent failure," the message's inability to be received, can occur at multiple levels. Hierarchical structures in the healthcare environment can make subordinates, in the shape of junior nurses, reluctant to contradict or call for an older physician, a phenomenon known as the "failure to rescue" (Jones et al., 2011). Also, uncertainty regarding one's judgment, especially with a borderline score or atypical presentation, will cause delay. Muddled communication or avoidance of feedback from a physician on an earlier escalation attempt can also create an adverse feedback loop, discouraging future calls (Dresser et al., 2023). Simulation training and formal education specifically in communication and assertiveness, such as the Situation-Background-Assessment-Recommendation (SBAR) technique, have been observed to empower nurses and overcome these obstructions (Thomas et al., 2009). Figure 1 shows the nurse's journey from recognition to intervention, grounded in Tanner's model.

Figure 1: Nurse-Led Sepsis Detection and Response Pathway

Nurse-Led Sepsis Detection and Response Pathway

Patient Assessment → Screening (NEWS/qSOFA) → Nurse Judgment → Rapid Response Activation → Ongoing Reassessment → Sepsis Bundle Implementation → Noticing / Interpreting

The Role in Sepsis Resuscitation Bundles

If a swift response is triggered, the nurse's role changes from detector to proactive resuscitator. Surviving Sepsis Campaign recommends efforts to meet bundles of care, such as the 1-hour bundle, which includes checking lactate, obtaining blood cultures, initiating broad-spectrum antibiotics, and initiating fluid resuscitation (Evans et al., 2021). The nurse often coordinates and administers such time-critical procedures. This requires technical proficiency (i.e., collecting blood cultures prior to antibiotics, administering large-volume fluid boluses) and high-level organizational and communication abilities to allow for optimized team functioning (Patterson et al., 2016). The nurse's constant presence allows ongoing reassessment, observation of the patient's response to the interventions, and instantaneous identification of any further deterioration, making their contribution to the successful application of the bundle indispensable (Robb et al., 2010).

The Critical Balance: Protocol-Driven Care and Nursing Clinical Judgment

Implementing standardized screening tools in practice represents a paradigm shift towards protocol-driven care. While much potential, the tools have also raised a core concern regarding the role of professional judgment in nursing.

The Promise and Risk of Protocolization

Protocols and checklists possess strengths that cannot be overlooked. They reduce inappropriate practice variation, create a safety net to prevent missed diagnosis, and provide a clear standard of care that can be audited and maximized (Winters et al., 2013). To novice nurses or those in high-stress environments, an evidence-based tool can serve as a cognitive aid, guiding the assessment and promoting confidence in escalation. They demystify the subjective, providing a common language that may strengthen a nurse's case when communicating with doctors (Donovan et al., 2018).

Yet the risks of reliance are enormous. Alert fatigue is among the most serious effects, particularly with very sensitive tools like NEWS being integrated into EHRs. If nurses are constantly bombarded with repeated, clinically insignificant alerts, they will develop cognitive "tunnel vision" and begin to override or even ignore them, including the critical ones (Bedoya et al., 2019). This automation bias—the reliance on computerized signals—can lead to a de-skilling of clinical judgment, where the nurse looks at the score on the screen instead of at the patient in the bed (Khera et al., 2023). Second, protocols are inherently reductionist. They cannot possibly capture the whole complexity of a human patient. An old, weak patient with urosepsis may have a normal respiratory rate and blood pressure (a qSOFA of 0) but be profoundly lethargic and anuric—a thing an experienced nurse would know was critical, but one that a protocol could easily miss (Nielsen et al., 2022).

The Nature and Nuance of Nursing Clinical Judgment

Clinical judgment in nursing is more than intuition; it is an advanced, recursive process of reasoning. Tanner's (2006) Clinical Judgment Model depicts it as composed of four components: noticing, interpreting, responding, and reflecting. Noticing is a perceptual skill, in that the nurse, with experience and knowledge, notices salient cues—a subtle mottling of the skin, a shift in the patient's mood, a family member's concern that "he's just not himself." Interpreting is the sense-making of these cues, building a picture of the patient's situation. This is when the nurse synthesizes the objective NEWS score with their subjective findings. Responding is the decision to act, for example, calling the doctor or initiating the RRT. Finally, reflecting means learning from the outcome, which refines the nurse's judgment for future encounters (Côté & Tribble, 2012).

It is through this process that competent nurses can identify "soft signs" of sepsis beyond any scoring system's parameters. Again and again, studies have underscored that nurses' "gut feeling" or "worry" is highly predictive of deterioration, often preceding objective changes in vital signs (Douw et al., 2021).

It is not an intuitive assessment; it is the identification of patterns refined by experience and a careful, contextual knowledge of the patient.

**Towards a Synergistic Model: Integrating the Tool and the Thinker**

The ideal way to identify early sepsis is not to choose between protocols and judgment, but to create a synergistic model where one complements the other. The screening tool should not be regarded as a replacement for the brain of the nurse, but as a "thinking tool" those structures and augments clinical thinking (Hammond, 2000).

In this system, a pathological NEWS score serves as a prompt for increased critical thinking rather than the conclusion of the examination. It invites the nurse to ask: "The score is high, what does that mean for this patient?" This leads to a focused physical examination, patient history, and medication review, and conversation with the patient and family to elicit further information (Schlak et al., 2021). Conversely, an intuitive sense that something is not quite right in the presence of a normal score should lead the nurse to check parameters again, calculate them themselves, and perhaps more closely observe. The protocol thus has support for intuition, and intuition has support for the fallibility of the protocol. Figure 2 depicts how combining standardized tools and nursing reasoning achieves the best detection accuracy.

Table 2: The Synergistic Model: Protocol vs. Judgment in Sepsis Detection

Aspect	Protocol-Driven Care (e.g., NEWS/qSOFA)	Clinical Judgment (Nursing Expertise)	Synergistic Integration
Basis	Algorithmic, standardized, based on population data	Intuitive, analytical, contextual, based on individual patient knowledge	Protocol triggers systematic assessment; judgment contextualizes the score.
Strength	Reduces variation, safety net, supports novice nurses, objective data.	Identifies atypical presentations, "soft signs," interprets trends, and understands patient context.	Comprehensive safety net that is both sensitive (judgment) and systematic (protocol).
Weakness	Alert fatigue, automation bias, misses atypical cases, and reductionism.	Subject to cognitive biases, variable between practitioners, and difficult to quantify.	Mitigates the weaknesses of each approach by using the other as a check.
Action	Automatic alert at a predefined score.	Decision to escalate based on synthesis of all available information.	Alert prompts a critical thinking process: "Why is the score high? What is my assessment telling me?"
Example	NEWS of 7 triggers an RRT call as per hospital policy.	The nurse notices subtle skin mottling and increased agitation in a post-op patient with a NEWS of 4 and calls the doctor.	Nurse gets a NEWS alert of 6. Upon assessment, she finds the patient is newly confused and has a history of UTI. She uses SBAR to confidently activate the sepsis protocol.

Figure 2: Synergistic Model of Early Sepsis Detection: Protocol and Clinical Judgment
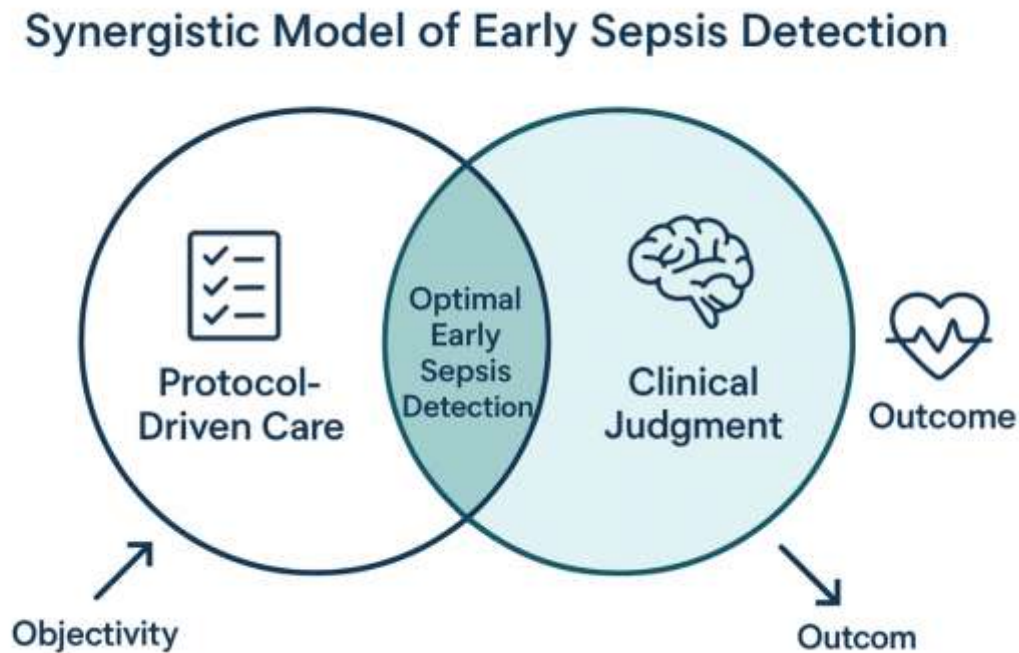
Conclusion and Recommendations for Practice and Research

The evidence synthesized in this review categorically puts the nurse in the role of the linchpin of sepsis early detection. While the creation of systematic screening tools like NEWS and qSOFA has provided a helpful model to underpin this role, it has not—and could not—replace the discerning mental process of seasoned nursing clinical judgment. The key to optimizing patient outcomes is to shatter the illusory dichotomy of protocol and judgment and establish a culture of synergistic practice. In order to achieve this, strategic recommendations are gleaned from the literature. To begin, education and training must move beyond the simple provision of tool instruction to simulation-based education that combines sepsis identification with deliberate practice in clinical judgment and assertive communication, that is, instructing nurses how to interpret and act on both objective ratings and their subjective assessment (Thomas et al., 2009; Paul et al., 2023). At the same time, technology design must be human-centered to combat alert fatigue; it involves the implementation of intelligent, stratified electronic health record (EHR) alerts that consider the patient's context along with trend data and not a single, static threshold, to allow systems to assist but not substitute the nurse's mental work (Bedoya et al., 2019).

Also, health care organizations must actively foster a culture of psychological safety where nurses are empowered to voice concerns and call upon rapid response systems without fear of criticism for being "wrong," and including dismantling hierarchical boundaries and fostering collaborative, interprofessional practice (Allen et al., 2017). Looking ahead, additional research should be performed to develop and validate "next-generation," context-sensitive screening tools that possibly involve nursing assessment of subtle signs and patient-specific risk factors and attention to the long-term impact of different education designs on accuracy of clinical judgment and sepsis outcomes (Doyle, 2018). To conclude, sepsis is won or lost in the first hours, at the bedside. The best weapon to employ in this fight is an informed, educated, and critically engaged nurse with evidence-based tools that complement but do not supplant their critical judgment. With this blended model advocated, healthcare systems can leverage their greatest strength in sepsis care: the sentinel at the bedside.

References

1. Allen, E., Elliott, D., & Jackson, D. (2017). Recognising and responding to in-hospital clinical deterioration: An integrative review of interprofessional practice issues. Journal of clinical nursing, 26(23-24), 3990-4012. https://doi.org/10.1111/jocn.13839

2. Bedoya, A. D., Clement, M. E., Phelan, M., Steorts, R. C., O'brien, C., & Goldstein, B. A. (2019). Minimal impact of implemented early warning score and best practice alert for patient deterioration. Critical care medicine, 47(1), 49-55. DOI: 10.1097/CCM.0000000000003439

3. Bruno, R. R., Wernly, B., Mamandipoor, B., Rezar, R., Binnebössel, S., Baldia, P. H., ... & Jung, C. (2021). ICU-mortality in old and very old patients suffering from sepsis and septic shock. Frontiers in medicine, 8, 697884. https://doi.org/10.3389/fmed.2021.697884

4. Churpek, M. M., Snyder, A., Han, X., Sokol, S., Pettit, N., Howell, M. D., & Edelson, D. P. (2017). Quick sepsis-related organ failure assessment, systemic inflammatory response syndrome, and early warning scores for detecting clinical deterioration in infected patients outside the intensive care unit. American journal of respiratory and critical care medicine, 195(7), 906-911. https://doi.org/10.1164/rccm.201604-0854OC

5. Côté, S., & Tribble, D. S. C. (2012). Clinical reasoning in nursing, a concept analysis. Recherche en soins infirmiers, 111(4), 13-21. https://doi.org/10.3917/rsi.111.0013

6. Dresser, S., Teel, C., & Peltzer, J. (2023). Frontline Nurses' clinical judgment in recognizing, understanding, and responding to patient deterioration: A qualitative study. International Journal of Nursing Studies, 139, 104436. https://doi.org/10.1016/j.ijnurstu.2023.104436

7. Doyle, D. J. (2018). Clinical early warning scores: new clinical tools in evolution. The Open Anesthesia Journal, 12(1). http://dx.doi.org/10.2174/2589645801812010026

8. Donovan, A. L., Aldrich, J. M., Gross, A. K., Barchas, D. M., Thornton, K. C., Schell-Chaple, H. M., ... & Lipshutz, A. K. (2018). Interprofessional care and teamwork in the ICU. Critical care medicine, 46(6), 980-990. DOI: 10.1097/CCM.0000000000003067

9. Douw, G., Huisman-de Waal, G., van Zanten, A. R., van der Hoeven, J. G., & Schoonhoven, L. (2016). Nurses''worry'as predictor of deteriorating surgical ward patients: A prospective cohort study of the Dutch-Early-Nurse-Worry-Indicator-Score. International journal of nursing studies, 59, 134-140. https://doi.org/10.1016/j.ijnurstu.2016.04.006

10. Evans, L., Rhodes, A., Alhazzani, W., Antonelli, M., Coopersmith, C. M., French, C., ... & Levy, M. (2021). Surviving sepsis campaign: international guidelines for management of sepsis and septic shock 2021. Critical care medicine, 49(11), e1063-e1143. DOI: 10.1097/CCM.0000000000005337

11. Fernando, S. M., Tran, A., Taljaard, M., Cheng, W., Rochwerg, B., Seely, A. J., & Perry, J. J. (2018). Prognostic accuracy of the quick sequential organ failure assessment for mortality in patients with suspected infection: a systematic review and meta-analysis. Annals of internal medicine, 168(4), 266-275. https://doi.org/10.7326/M17-2820

12. Ginestra, J. C., Giannini, H. M., Schweickert, W. D., Meadows, L., Lynch, M. J., Pavan, K., ... & Umscheid, C. A. (2019). Clinician perception of a machine learning–based early warning system designed to predict severe sepsis and septic shock. Critical care medicine, 47 (11), 1477-1484. DOI: 10.1097/CCM.0000000000003803

13. Hammond, K. R. (2000). Human judgment and social policy: Irreducible uncertainty, inevitable error, unavoidable injustice. Oxford University Press.

14. Jones, D. A., DeVita, M. A., & Bellomo, R. (2011). Rapid-response teams. New England Journal of Medicine, 365(2), 139-146. DOI: 10.1056/NEJMra0910926

15. Khera, R., Simon, M. A., & Ross, J. S. (2023). Automation bias and assistive AI: risk of harm from AI-driven clinical decision support. Jama, 330(23), 2255-2257. doi:10.1001/jama.2023.22557

16. Levy, M. M., Evans, L. E., & Rhodes, A. (2018). The surviving sepsis campaign bundle: 2018 update. Intensive care medicine, 44(6), 925-928. https://doi.org/10.1007/s00134-018-5085-0

17. Nielsen, P. B., Langkjær, C. S., Schultz, M., Kodal, A. M., Pedersen, N. E., Petersen, J. A., ... & Iversen, K. K. (2022). Clinical assessment as a part of an early warning score—a Danish cluster-randomised, multicentre study of an individual early warning score. The Lancet Digital Health, 4(7), e497-e506. https://doi.org/10.1016/S2589-7500(22)00067-X

18. Patterson, M. D., Militello, L. G., Bunger, A., Taylor, R. G., Wheeler, D. S., Klein, G., & Geis, G. L. (2016). Leveraging the critical decision method to develop simulation-based training for early recognition of sepsis. Journal of Cognitive Engineering and Decision Making, 10(1), 36-56. https://doi.org/10.1177/1555343416629520

19. Paul, N., Buse, E. R., Knauthe, A. C., Nothacker, M., Weiss, B., & Spies, C. D. (2023). Effect of ICU care bundles on long-term patient-relevant outcomes: a scoping review. BMJ open, 13(2), e070962. https://doi.org/10.1136/bmjopen-2022-070962

20. Prytherch, D. R., Smith, G. B., Schmidt, P. E., & Featherstone, P. I. (2010). ViEWS—towards a national early warning score for detecting adult inpatient deterioration. Resuscitation, 81(8), 932-937. https://doi.org/10.1016/j.resuscitation.2010.04.014

21. Rhodes, A., Evans, L. E., Alhazzani, W., Levy, M. M., Antonelli, M., Ferrer, R., ... & Dellinger, R. P. (2017). Surviving sepsis campaign: international guidelines for management of sepsis and septic shock: 2016. Intensive care medicine, 43(3), 304-377. https://doi.org/10.1007/s00134-017-4683-6

22. Robb, E., Jarman, B., Suntharalingam, G., Higgens, C., Tennant, R., & Elcock, K. (2010). Using care bundles to reduce in-hospital mortality: quantitative survey. Bmj, 340. https://doi.org/10.1136/bmj.c1234

23. Rudd, K. E., Johnson, S. C., Agesa, K. M., Shackelford, K. A., Tsoi, D., Kievlan, D. R., ... & Naghavi, M. (2020). Global, regional, and national sepsis incidence and mortality, 1990–2017: analysis for the Global Burden of Disease Study. The Lancet, 395(10219), 200-211. https://doi.org/10.1016/S0140-6736(19)32989-7

24. Schlak, A., Aiken, L., Chittams, J., Poghosyan, L., & McHugh, M. (2021, June). The Relationship between Nurse Burnout and Patient Outcomes in US Hospitals. In 2021 Annual Research Meeting. AcademyHealth.

25. Score, R. E. W. (2017). 2: Standardising the assessment of acute-illness severity in the NHS. Updated Report of a Working Party; Royal College of Physicians: London, UK.

26. Scruth, E., & Spooner, A. (2023). Quality and safety. Critical Care Nursing, 84, 47.

27. Seymour, C. W., Liu, V. X., Iwashyna, T. J., Brunkhorst, F. M., Rea, T. D., Scherag, A., ... & Angus, D. C. (2016). Assessment of clinical criteria for sepsis: for the third international consensus definitions for sepsis and septic shock (Sepsis-3). Jama, 315(8), 762-774. doi:10.1001/jama.2016.0288

28. Silcock, D. J., Corfield, A. R., Gowens, P. A., & Rooney, K. D. (2015). Validation of the National Early Warning Score in the prehospital setting. Resuscitation, 89, 31-35. https://doi.org/10.1016/j.resuscitation.2014.12.029

29. Singer, M., Deutschman, C. S., Seymour, C. W., Shankar-Hari, M., Annane, D., Bauer, M., ... & Angus, D. C. (2016). The third international consensus definitions for sepsis and septic shock (Sepsis-3). Jama, 315(8), 801-810. doi:10.1001/jama.2016.0287

30. Tanner, C. A. (2006). Thinking like a nurse: A research-based model of clinical judgment in nursing. Journal of nursing education, 45(6), 204-211. https://doi.org/10.3928/01484834-20060601-04

31. Thomas, C. M., Bertram, E., & Johnson, D. (2009). The SBAR communication technique: teaching nursing students professional communication skills. Nurse educator, 34(4), 176-180. DOI: 10.1097/NNE.0b013e3181aaba54

32. Usman, O. A., Usman, A. A., & Ward, M. A. (2019). Comparison of SIRS, qSOFA, and NEWS for the early identification of sepsis in the Emergency Department. The American journal of emergency medicine, 37(8), 1490-1497. https://doi.org/10.1016/j.ajem.2018.10.058

33. Winters, B. D., Weaver, S. J., Pfoh, E. R., Yang, T., Pham, J. C., & Dy, S. M. (2013). Rapid-response systems as a patient safety strategy: a systematic review. Annals of internal medicine, 158(5_Part_2), 417-425. https://doi.org/10.7326/0003-4819-158-5-201303051-00009

34. Wood, C., Chaboyer, W., & Carr, P. (2019). How do nurses use early warning scoring systems to detect and act on patient deterioration to ensure patient safety? A scoping review. International journal of nursing studies, 94, 166-178. https://doi.org/10.1016/j.ijnurstu.2019.03.012

الحارس بجانب السرير: تقييم نقدي لدور الممرض في الكشف المبكر عن السبتيميا بناءً على فعالية البروتوكولات والحدس السريري

الملخص

الخلفية: تُعد السبتيميا أولوية صحية عامة عالمية تتوقف نتائج المرضى فيها بشكل متزايد على الكشف المبكر. الممرضون، كونهم مقدمي الرعاية الصحية الأكثر انتظامًا في التواصل مع المرضى، هم حراس الكشف الرئيسيون في هذا المسعى. التحدي الحديث يكمن في تحقيق التوازن المناسب بين دمج بروتوكولات الفحص الموحدة والعامل اللافت للنظر وهو الحكم السريري للتمريض.

الطرق: تجمع هذه المراجعة بيانات من 2014 إلى 2024 لتحليل دور الممرض في التعرف المبكر على السبتيميا. وتقوم بتقييم نقدي لفعالية أدوات الفحص الموحدة مثل NEWS و qSOFA عبر بيئات متنوعة، والتفاعل بين الرعاية القائمة على البروتوكولات والحدس السريري.

النتائج: تشير الأدلة إلى أن أدوات مثل NEWS توفر شبكة أمان حساسة وحاسمة، ولكنها قد تكون غير محددة وتسبب إرهاق التنبيه. على النقيض، فإن qSOFA ، على الرغم من دقتها، تفتقر إلى الحساسية وقد تؤدي إلى تفويت التشخيص. تتجاوز وظيفة الممرض الحسابات إلى تفسير الاتجاهات، مما يؤدي إلى استجابة سريعة وتنسيق الرعاية. الملاحظة الأساسية هي أن لا استراتيجية واحدة، سواء كانت الالتزام الصارم بالبروتوكولات أو الحكم السريري غير المدعوم، كافية. الكشف الأمثل يكون من خلال نموذج تآزري حيث تُنظم الأدوات القائمة على الأدلة وتدعم التفكير المنطقي والبديهي للممرض، خاصة في الحالات المعقدة في الفئات غير النمطية.

الاستنتاج: إن الدفاع الأمثل عن السبتيميا هو ممرض مدعوم بالتفكير النقدي، مدعوم بتكنولوجيا ذكية وبيئة من الأمان النفسي. يجب أن تركز الجهود المستقبلية على التعليم، تطوير التكنولوجيا المركزة على الإنسان، والبحث في التقنيات الواعية بالسياق من الجيل التالي.

الكلمات المفتاحية: السبتيميا، التشخيص المبكر، تقييم التمريض، اتخاذ القرار السريري، سلامة المريض، البروتوكولات السريرية.