

LETTER TO THE EDITOR

New technologies are on our side: Designing AI-Based Protocols for Emergency Departments

Reza Abdollahi *

Nursing and Midwifery School, Patient Safety Research Center, Clinical Research Institute, Urmia University of Medical Sciences, Urmia, Iran.

*Corresponding author: Reza Abdollahi; Email: rezaabdollahi97@yahoo.com

1. To the editor-in-chief

As a nurse in a bustling emergency department (ED), I've seen firsthand the chaos and intensity that define our daily work. The constant influx of patients, each with unique needs, creates a high-pressure environment where every second counts (1). Over the past year, our hospital began integrating artificial intelligence (AI)-based protocols into our workflow, and I've witnessed how this technology is reshaping the way we deliver care. It's been a transformative experience, one that's brought both promise and challenges, but ultimately, it's made me hopeful for the future of emergency care.

When we first introduced AI-based triage systems, I was skeptical. Could a machine really understand the nuances of a patient's condition the way we do? But as I began using the system, I saw its potential. The AI pulls from vast amounts of historical data to predict patient outcomes and suggest triage levels (2). For instance, when a patient arrives with chest pain, the system analyzes their vital signs, medical history, and symptoms in seconds, recommending whether they need immediate attention or can wait safely. One night, a patient came in with vague symptoms fatigue and mild shortness of breath. The AI flagged a high risk for sepsis based on subtle patterns in their vitals and history, prompting us to act quickly. That patient was stabilized because of the early intervention, and I realized how AI could catch things we might miss in the heat of the moment.

The AI doesn't just help with triage. It's also changed how we approach treatment planning. I remember a young woman with a complex medical history who arrived with severe abdominal pain. The AI system cross-referenced her genetic markers and past records to suggest a tailored treatment plan, which helped us avoid medications that could have caused complications. It felt like having an extra set of eyes, guiding us to make faster, more precise decisions. But I've learned that AI isn't a replacement for our expertise it's a tool. There are moments when my intuition, honed over years of experience, leads me to question the AI's suggestions. In those

cases, I discuss with the team, and we make the final call together. It's a partnership, not a takeover. The technology itself is impressive but demanding. The AI relies on powerful software and hardware to process massive amounts of data in real time (3). At first, I found it overwhelming to navigate the system while juggling patient care. But after training sessions, I got the hang of it. The system is designed to learn continuously, improving its predictions as we input new patient data. Still, we've had to be vigilant about ensuring the data is accurate and unbiased. I've seen how small errors in data entry can throw off the AI's recommendations, so we double-check everything.

What's been most eye-opening is the ethical side of AI. Early on, we noticed that some recommendations seemed off for certain patient groups. It turned out the initial dataset wasn't diverse enough, which could have led to biased care. Our team worked with the developers to address this, incorporating more representative data and adding checks to catch potential biases. We also had to think about patient privacy making sure their data is secure while still feeding the AI what it needs to function. During our continuing medical education (CME) sessions, we've had deep discussions about these ethical challenges, and it's helped me feel more confident in using AI responsibly. As a nurse, I've always believed that human connection is at the heart of what we do. AI doesn't change that it enhances it. Taking on some of the analytical burden, it frees me to focus on comforting a scared patient or reassuring a worried family. The AI-based protocols have streamlined our workflow, reduced wait times, and helped us prioritize care more effectively. But they've also reminded me how vital our judgment and empathy are. We're not just following algorithms; we're using them to make our care more precise, equitable, and responsive.

Looking back, I'm amazed at how far we've come. Designing and implementing these AI protocols wasn't easy; it took collaboration between nurses, doctors, tech experts, and ethicists. But seeing the impact of patients getting faster care, staff feeling less overwhelmed, and outcomes improving makes it all worth it. AI isn't perfect, and we're still learning how to integrate it fully, but it's become a powerful ally in our ED. I'm excited to see where this journey takes us next, as we continue to balance technology with the human touch that defines nursing.

2. Declarations

2.1. Acknowledgment

None.

2.2. Conflict of interest

None.

2.3. Funding

None.

References

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