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Editorial

The Usefulness of ChatGPT in the Emergency Department: Enhancing Decision-Making and Patient Care

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La utilidad de ChatGPT en el servicio de urgencias: mejora la toma de decisiones y la atención al paciente

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The use of artificial intelligence (AI) in healthcare has brought transformative changes, particularly in high-pressure environments like the emergency department (ED). One of the most promising AI tools in this area is ChatGPT, a language model developed by OpenAI, which has the potential to enhance clinical decision-making, improve communication with patients, and streamline workflows.

While the ED is often chaotic, requiring rapid, life-saving decisions, the integration of AI tools like ChatGPT could provide much-needed support to healthcare professionals, ultimately improving patient outcomes and reducing the risk of medical errors.

One of the key advantages of ChatGPT in the ED is its ability to assist in diagnostic processes. Emergency

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physicians are often faced with patients presenting with ambiguous symptoms that could point to multiple potential diagnoses. In such cases, time is of the essence, and physicians must rapidly determine the most likely causes of illness while ruling out life-threatening conditions. ChatGPT can process vast amounts of medical data and provide suggestions for differential diagnoses based on patient history, symptoms, and clinical guidelines. For example, when a patient presents with chest pain, ChatGPT can quickly cross-reference symptoms with the latest clinical data to suggest possible causes, such as myocardial infarction, pulmonary embolism, or aortic dissection. This can be particularly valuable when the clinician is dealing with rare conditions or unusual presentations that might not immediately come to mind. By improving diagnostic accuracy, ChatGPT can contribute to faster and more effective treatments, a critical factor in the ED [1].

Furthermore, ChatGPT can assist with providing treatment recommendations that are aligned with the most current evidence-based guidelines. The ED is a fast-paced environment, and while experienced physicians are adept at making decisions under pressure, there is always a risk of missing the most up-to-date treatment protocols, especially when dealing with unfamiliar conditions. ChatGPT can synthesize medical literature and provide suggestions that are rooted in current best practices. For example, in managing a patient with septic shock, the AI could suggest adhering to the *Surviving Sepsis Campaign* guidelines, recommending appropriate fluid resuscitation, vasopressor use, and early antibiotic administration. This ability to integrate the latest research into clinical decision-making can be particularly useful for junior physicians or when dealing with complex cases where multiple treatment options exist. Research by Esteva et al. [2] highlights the potential for AI to enhance the adherence to clinical guidelines, ensuring that care is both effective and up-to-date.

Another critical role that ChatGPT can play in the ED is assisting with medication safety. The emergency setting often requires quick decisions regarding pharmacological interventions, and it is easy for clinicians to overlook potential drug-drug interactions, especially when a patient's medical history is incomplete or unknown. ChatGPT can provide real-time alerts regarding potential interactions, dosage errors, or contraindications. For instance, when prescribing anticoagulants or other high-risk medications, the AI can warn the physician of any possible interactions

with the patient's existing medications or health conditions, thereby minimizing the risk of adverse drug reactions. A study by Obermeyer and Emanuel [3] emphasized the value of AI tools in mitigating medication errors, particularly in environments like the ED, where time constraints are a significant challenge.

In addition to clinical decision support, ChatGPT offers significant potential for improving communication between healthcare providers and patients. The ED is often a stressful environment for patients, many of whom are anxious or confused about their medical conditions and treatment plans. ChatGPT can assist clinicians in explaining diagnoses, treatments, and procedures in a manner that is clear and easy for patients to understand. This is particularly important in emergency settings where patients may struggle to comprehend complex medical jargon or the implications of their treatment options. For example, a patient diagnosed with a pulmonary embolism may find it difficult to understand the condition and its treatment. ChatGPT can help the clinician craft a straightforward explanation, ensuring the patient is well-informed and better able to follow the prescribed treatment plan. Clear communication is crucial for ensuring patient adherence, reducing anxiety, and ultimately improving health outcomes, especially in the chaotic environment of the ED [4].

The multilingual capabilities of ChatGPT also make it a valuable tool in settings where language barriers exist. In emergency departments that serve diverse populations, effective communication between healthcare providers and non-English speaking patients can be challenging. Misunderstandings due to language barriers can lead to delays in care or inappropriate treatment. ChatGPT's ability to translate medical explanations into multiple languages can facilitate better communication, ensuring that all patients receive appropriate and accurate information about their conditions and treatment options. Research has shown that language barriers in healthcare can contribute to disparities in care, and AI tools that support multilingual communication can help mitigate these issues [1].

Moreover, ChatGPT has the potential to reduce the administrative burden on emergency physicians by assisting with medical documentation. One of the most time-consuming tasks in the ED is maintaining accurate and comprehensive medical records, which are essential for continuity of care but often take away valuable time from direct patient interaction. ChatGPT can help by generating clinical notes based on physician input, summarizing patient

histories, and even drafting discharge instructions. Automating parts of the documentation process can allow physicians to focus more on patient care, enhancing both efficiency and job satisfaction. This application is supported by studies showing that AI-driven tools can reduce administrative workloads while maintaining the accuracy of medical documentation [2].

Despite these advantages, it is important to acknowledge the limitations of ChatGPT in the emergency department. The model's outputs are based on the data it has been trained on, and while it can process vast amounts of information, there is always the possibility that it may provide incorrect or outdated recommendations. This risk is particularly concerning in the ED, where decisions often need to be made rapidly, and any delay or error could have serious consequences. Therefore, ChatGPT should not be viewed as a substitute for the clinical judgment of experienced physicians but rather as a supplemental tool that can enhance decision-making when used appropriately. Physicians must always verify the information provided by ChatGPT and ensure it aligns with established clinical guidelines and their professional expertise [4].

Data privacy and security also present challenges when integrating AI tools into the healthcare environment. While ChatGPT does not have direct access to patient data, any system that is used in a clinical setting must comply with regulations governing the protection of patient information, such as the Health Insurance Portability and Accountability Act (HIPAA) in the United States. Ensuring that AI systems are secure and that patient data is handled in a manner that protects confidentiality is crucial to the successful adoption of these tools in the ED [3].

Additionally, there is the potential for bias in AI models like ChatGPT. These models are trained on large datasets that may reflect existing biases in healthcare, such as disparities in treatment based on race, gender, or socioeconomic status. If these biases are not addressed, there is a risk that AI tools

could perpetuate inequalities in care, particularly in the diverse patient populations often seen in emergency departments. Ongoing efforts to improve the fairness and inclusivity of AI models will be essential to ensure that all patients benefit from their use [2].

In conclusion, ChatGPT offers considerable potential to improve the efficiency and quality of care in the emergency department. From aiding in diagnostics and providing evidence-based treatment recommendations to enhancing patient communication and reducing administrative tasks, this AI tool can be a valuable asset in the fast-paced world of emergency medicine. However, its use must be carefully managed, with attention to accuracy, data privacy, and bias. By complementing the expertise of healthcare professionals, ChatGPT can help transform the delivery of emergency care, ultimately leading to better outcomes for patients.

1. CONFLICT OF INTERESTS

The authors have no conflict of interest to declare. The authors declared that this study has received no financial support.

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