

The Accuracy of Patient Categorization Using AI Triage Compared to Nurse-Led Triage

Emergency department (ED) triage is the first step of care, where patients are sorted in order of urgent need. Accurate triage decisions are essential for improving patient outcomes and reducing healthcare costs. Triage accuracy refers to how often a triage method correctly identifies a patient's level of urgency. In response to growing healthcare strain, technological innovations have become attractive options for healthcare facilities seeking to optimize care delivery and resource use. Incorporating triage driven by artificial intelligence (AI) may reduce patient wait times, alleviate resource strains, streamline care, and improve cost efficiency. A traditional nurse-led triage relies upon clinical expertise and assessment skills using the Emergency Severity Index, whereas an AI-based triage system uses machine learning to analyze patient data and presenting symptoms to predict their clinical priority. This review investigates how AI-driven triage systems affect triage accuracy when compared to traditional nurse-led triaging among ED patients. It also assesses the potential of AI as a supplemental tool to increase accuracy and consistency across emergency care systems. Nurses may use these findings to critically assess the integration of AI in triage, evaluate its potential to improve clinical decision-making, and advocate for responsible, evidence-based implementation. Evaluating the variable performance of each triage method may guide future integration and inform policy on the role of AI in healthcare.