10-28-2023

Revisiting Medical Errors: Collaborative Errors

Shuchita Mishra
Northeastern University, mishra.shu@northeastern.edu

Yang Lee
Northeastern University, y.lee@northeastern.edu

Haijing Hao
Bentley University, hhao@bentley.edu

Jennifer Xu
Bentley University, jxu@bentley.edu

Revisiting Medical Errors: Collaborative Errors

Completed Research Paper

Shuchita Mishra
Northeastern University
mishra.shu@northeastern.edu

Yang Lee
Northeastern University
y.lee@northeastern.edu

Haijing Hao
Bentley University
hhao@bentley.edu

Jennifer Xu
Bentley University
jxu@bentley.edu

ABSTRACT

Medical error is a label used to refer to preventable adverse events in the healthcare setting. Errors in medical practice and service can occur at various timepoints and contexts, driven by both human and non-human factors. As healthcare continuously evolves, particularly against the backdrop of a digital landscape, it has become even more of a necessity to conduct a comprehensive examination of the causes and potential solutions for the wide array of medical errors that can occur. Conventionally, medical errors have been studied from the clinical perspective to prevent and remedy errors such as diagnostic errors, medication errors, surgical errors, and errors in medical protocol. The digitalization of healthcare practice provides new opportunities to conduct longitudinal analysis, but also presents challenges relatively new to medical error research, but familiar in the world of data quality, including data that is siloed across different timepoints and entities. As the field moves towards prevention-focused care practice, we anticipate that longitudinal data about managed care bundled by patients will become more available.

This study conducts an exploratory literature review of the factors contributing to medical errors, emphasizing the interdisciplinary nature and collaborative mode in defining and mitigating errors. The medical and healthcare literature discusses the medical practice and service within a visit, test, surgery, and transfer extensively. The error research literature identifies human errors, such as, slips and mistakes, and others from individual episodes. Other literature focuses on specific types, causes, and contexts of medical errors, such as culture, leadership, training, and systems. Many empirical medical error studies are available for certain service or project period. Other studies focus on transfers of patients. We also reviewed literature on non-medical errors, such as, nuclear plants and airlines. We reviewed many organizational process literatures that discusses errors stem from knowledge sharing and boundary shifting. We also reviewed data quality literature that embeds various contexts in quality of data. We aim to review and synthesize the literature across disciplines for studying the medical errors based on a patient over time, cross multiple services, visits, and transfers in order to account for the interdisciplinary phenomenon of medical errors and collaborative errors.

Based on this review, we propose a longitudinal framework and concepts to understand collaborative medical errors based on patients' experience over time. We present several propositions on how specialized collaborative efforts might contribute to creating and solving medical errors. In addition, this review also explores the role of automation, technology, role-based communication, and evidence-based approaches in mitigating errors. This research significantly contributes to the field by challenging traditional perspectives on medical errors, expanding the scope of error analysis, and offering practical strategies for error reduction. It underscores the critical role of interdisciplinary collaboration in healthcare and provides a solid foundation for future studies in the pursuit of safer and higher-quality patient care.

Keywords
medical errors, interdisciplinary collaboration, knowledge-sharing, transfer of care, patient-centered care