12-12-2021

Evaluating an Epic Implementation of a CDSS PICU Sedation Protocol

Ann Fruhling
University of Nebraska at Omaha, afruhling@unomaha.edu

Jeanette Rose
University of Nebraska at Omaha, jenimrose@gmail.com

Christopher Maloney
cmaloney@childrensomaha.org

TREO
Technology, Research, Education, Opinion

Evaluating an Epic Implementation of a CDSS PICU Sedation Protocol

A. Fruhling, afruhling@unomaha.edu; J. Rose, jenimrose@gmail.com; C. Maloney, cmaloney@childrensomaha.org

Intensive Care Unit patient sedation management is very complex and critical to patient care. Electronic standardized pediatric sedation protocols can positively impact the coordination and continuity of care. Electronic protocols are often implemented within the EHR for efficiency and to reduce order variation. Adherence to protocols vary greatly depending on the type of protocol. The protocols best adhered to are those that are easier to implement, support the clinician into being compliant, and have a visible positive impact [1].

Recently, a standardized protocol for the care of pediatric patients needing sedation was revised at a freestanding children's hospital. The sedation protocol is ordered through the Epic electronic health record system (e.g. orderset). This revised protocol required the Clinical Decision Support System (CDSS) processes and electronic documentation of the patient assessments interface be upgraded in the Epic EHR.

Our examination study analyzed the effectiveness, satisfaction and usage of the new electronic sedation protocol decision support application. Specifically, we evaluated how well the clinicians' workflows and the integration of the protocol in the Epic information system aligned. We adopted the overarching TURF Framework [2] to guide our study design. We employed qualitative data gathering methods: interviews and focus groups. Subject matter experts and super users of the sedation protocol aided in the development of the interview questions specific to the PICU domain. Thirty-nine subjects participated in the study.

From our analysis we identified opportunities to improve usability and user satisfaction in several areas: implementing an Epic champion to answer questions on how to efficiently interact with the CDSS, add notifications in the Epic system to remember to document, provide built-in bolus documentation, create a medicine calculator, implement a sedation management tab, and adding data analytics to review results. We recognize that our study is not generalizable because it only examined the PICU at one children's hospital; however, it provides insights on ways to enhance the implementation of a CDSS sedation protocol.

References

[1] F. A. Drews, J. Wallace, J. Benuzillo, B. Markewitz, and M. Samore, Protocol adherence in the intensive care unit, Human Factors and Ergonomics in Manufacturing & Service Industries, 22(1), pp. 21– 31, 2012.

[2] J. Zhang and M. F. Walji, TURF: toward a unified framework of EHR usability, Journal of biomedical informatics, 44(6), pp. 1056–1067, 2011.