

Documentation and Tracking of Assets Throughout the Clinical Decision Support Lifecycle

Karen Bavuso, RN, MSN^{1*}; Eileen Yoshida, RPh, MBA¹; Amanda Fairbanks, RN, MSN¹; Dan Bogaty¹; Susan Smith¹; Charles Lagor MD, PhD¹; Doreen M. Colburn RN, MSN⁴; Saverio Maviglia, MD^{1,2,3}; Roberto A. Rocha, MD, PhD^{1,2,3}

¹*Clinical Informatics, Partners eCare, Partners HealthCare System, Boston, MA*

²*Division of General Internal Medicine, Brigham and Women's Hospital, Boston, MA*

³*Harvard Medical School, Boston, MA*

⁴*Accenture Health Practice, Accenture*

Keywords: Knowledge Management, Clinical Decision Support (CDS), CDS Lifecycle

Introduction/Background

At Partners Healthcare the Knowledge Management (KM) team authors Clinical Decision Support (CDS) interventions used in a vendor based enterprise Electronic Health Record (EHR). The CDS interventions consist of various types of CDS and target a variety of intended recipients. The aim of this project was to develop standard processes to manage the different CDS development phases from request to implementation, known as the “CDS lifecycle.” Modeling of a CDS asset management process to accommodate the different lifecycle phases is challenging due to the varied documentation needs for each specific phase.¹ CDS creation follows a consistent development lifecycle, starting with a request and moving to the prioritization, design and implementation phases.² The different phases of the lifecycle have differing documentation needs as well as different participants with complementary roles. Likewise, it is possible for a CDS asset to circle back to a previous lifecycle phase for refinement.

Methods

We implemented a CDS asset management process utilizing an existing asset tracking software tool called JIRA.³ Clinical Informaticians, Knowledge Engineers, and Business Analysts were involved in defining the operational business requirements of the process. Software Engineers were also involved and guided the process design to align with the available functionality and constraints of the software tool.

Results

The process was designed to accommodate the separation of each lifecycle phase and to allow for unique data needs. The design also accounts for the ability to link the distinct assets across each phase, allowing participants to follow the trajectory, statuses, and content details within each phase. The disposition and status of each phase is captured to allow for a consistent and searchable handoff and communication to all participants. Consistency, reusability, and transparency, including dynamic reports and dashboards, were paramount in designing the process, along with ease of use and flexibility of the software tool. We are currently managing over 600 CDS interventions using the process.

Discussion/Conclusion

Designing a process to capture knowledge asset details, tracking, and handoff across each phase of the CDS lifecycle was challenging. We continue to make process and tool enhancements, including more detailed asset dependencies, intervention groupings, and a mechanism to capture enhancement requests. The CDS asset management process has been implemented and is serving its intended purpose. However, the adoption of a generic asset tracking software tool has resulted in some limitations that do not fully align with the optimal design of a knowledge management tool.

References

1. Sitting, D F, et al. The state of the art in clinical knowledge management: an inventory of tools and techniques. *International Journal of Medical Informatics* 2010 Jan;79(1): 44-57.
2. Kannry J, et al. The life cycle of Clinical Decision Support (CDS): CDS theory and practice from request to maintenance. *AMIA Annual Symposium Proceedings* 2012; 2012: 3-4.
3. JIRA (Version 5.2.7) [Software]. (2011). Available from <https://www.atlassian.com/software/jira>