Institution-Wide Implementation of A Custom-Developed Inpatient Rounding List System: Preliminary Outcomes

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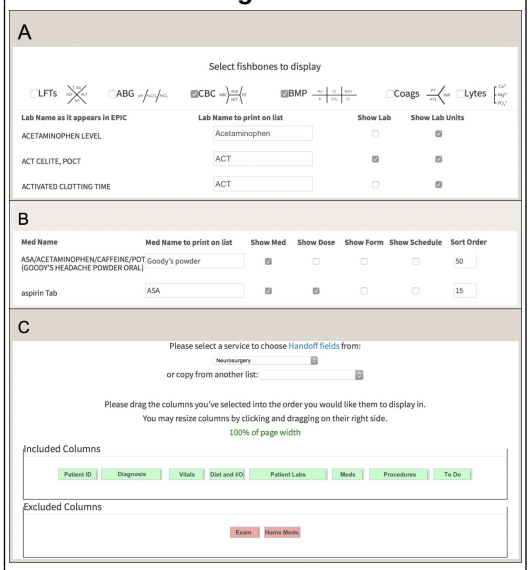
Introduction

Inpatient rounding lists are a critical component of patient care and yet creating them requires time-consuming chart review, is prone to inaccuracy, and often contributes to provider dissatisfaction. We aimed to build a highly-customizable (Figure 1) inpatient rounding list application that integrates with Epic™, our electronic health record system, with the goal of decreasing manual chart review time, improving provider satisfaction, and increasing the accuracy of inpatient lists.

Methods

We developed custom a list-generating system within our Neurosurgery department. Due to its subjective success, we expanded its capabilities and released it throughout our institution. Our Wake Health Inpatient Rounding List (WHIRL) system was first tested with a group of beta users who completed baseline and follow-up surveys to assess impacts on workflow, satisfaction and list accuracy. After full implementation in August 2017, we monitored server data to track the total number of users, active users per day, lists generated per day, and number of unique patients accessed across the health system.

Figure 1



Screenshots of some of the list customization options in WHIRL. A) Lab and B) Medication customization options. C) Column selection and resizing options. Other customization screens not pictured include hospital units, room numbers, procedures, studies, flowsheet rows, and layout options. Users can also customize layout/formatting and add/remove other data elements such as patient height and weight or the name of the Attending provider.

Table 1

Preliminary Survey Data			
Measure	**Without WHIRL***	**With WHIRL***	***p* value**
Chart review time (mins)	60 [60, 90]	30 [20, 60]	<0.01
Satisfaction with list (1 = Unsatisfied, 100 = Satisfied)	30 [17, 60]	80 [65, 87]	<0.01
Burden of preparing for rounds (1 = Easy, 100 = Difficult)	70 [65, 78]	50 [20, 65]	<0.01
% of time perceived inaccuracies on list	25 [10, 75]	15 [5, 30]	0.05

Preliminary data comparing survey data from before and after the implementation of our rounding list system. n= 23. *results reported as Median [IQR].

Table 2

Weekday WHIRL Usage Data	
Active users per day	109 [105, 118]
Lists generated per day	240 [213, 264]
Patients accessed via WHIRL per day	685 [641, 726]
Percentage of total WFBMC inpatients accessed via WHIRL per day	84% [79, 91]

Usage data for Oct-Dec 2017 with holidays excluded. Results reported as Median [IQR].

Results

Of 61 beta users, 23 (38%) completed baseline and follow-up surveys (Table 1). WHIRL usage increased from 50 to over 800 users within 1 month of implementation. Weekday (non-holiday) WHIRL server usage data from October to December 2017 is presented in Table 2. Notably, these numbers have all increased over the past several months and usage volume reflects a large percentage of the Medical Center's inpatient services.

Conclusions

Our EHR-integrated WHIRL application has succeeded in automating the creation of daily rounding lists for a majority of inpatient providers in our medical center. In doing so, it has demonstrated efficacy in saving clinicians time, decreasing rounding list errors, and improving provider satisfaction. If the reduction in chart review time experienced by our beta users is consistent across our current active users, WHIRL will be responsible for saving over 1500 hours of chart review time per month at our institution. Moving forward, we are currently collecting follow-up surveys from our non-beta users as well as objective data from EHR usage logs. We plan on deploying WHIRL at two additional pilot sites as part of a multi-center evaluation of its efficacy.

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe issues leading to inaccuracies and inefficiencies in current rounding list implementations 2) describe the importance of an accurate rounding list in preventing medication errors 3) Discuss the factors which led to preliminary success of our rounding list system