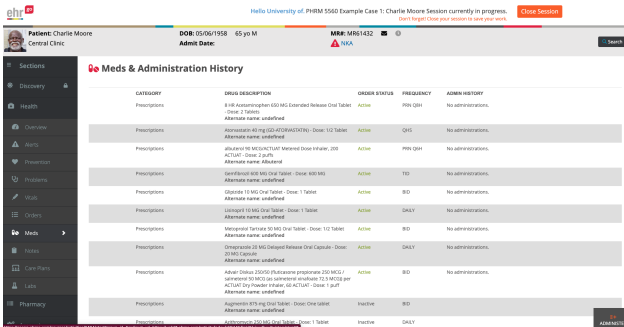


Students' Experience of a Technology Designed to Support Learning how to Detect MRP's

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Background

- Due to students' initial experience of overwhelm and disorientation, a digital tool was developed (based on expert procedures) to scaffold the identification of medication-related problems in complex health records.



Objective and Methods

- We evaluated the perceived benefits and limitations of the new medication-related problem detection tool (MRPDT) in a P2 clinical practice course— (n=79) students.
- The System Usability Survey and Instructional Materials Motivation Survey were used to evaluate usability and motivational design, and a qualitative questionnaire was used to explore students' overall learning experience. Descriptive statistics and content analysis were applied.

Reference: Klein GA. Sources of Power: How People Make Decisions. MIT Press; 1998.

System Usability Survey (SUS) Results*

Item Level and Aggregate SUS Scores				
Item	Mean	Min	Max	SD
I think that I would like to use the MRPDT frequently	3.29	1.00	5.00	1.16
I found the MRPDT unnecessarily complex	2.47	1.00	5.00	1.19
I thought the MRPDT was easy to use	3.86	1.00	5.00	0.92
I feel like I need the support of someone to be able to use the MRPDT	2.05	1.00	5.00	1.16
I found the various functions in the MRPDT were well integrated	3.80	1.00	5.00	0.93
I thought there was too much inconsistency in the MRPDT	2.34	1.00	5.00	1.18
I imagine that most people would learn how the MRPDT functions very quickly	3.96	2.00	5.00	0.85
I found the MRPDT very awkward to use	2.49	1.00	5.00	1.21
I felt very confident using the MRPDT.	3.90	1.00	5.00	0.89
I needed to learn a lot of things about how the MRPDT worked before I could get going with it	2.70	1.00	5.00	1.22
SUS Aggregate Score	66.89	12.5	100	18.31

*Notes: SUS is a 5 pt likert scale. Ideally odd items trend upward while even items trend downward. Aggregate score is converted to a 100 point scale.

Discussion/Implications

- Whereas expert pharmacists are able to quickly spot MRP's based on years of case knowledge, novice pharmacy students struggle with limited prior experience, making it extremely challenging to interpret information within a complex patient's health record¹.
- This initial evaluation of an MRPDT has demonstrated a path towards supporting novices with a motivationally appealing design (above the midpoint for all subscales of the IMMS) that mediates their sensemaking efforts and helps them internalize a systematic process for analyzing patient charts.
- The evaluation also identified areas for improvement such as better usability (SUS score of 66.89 was slightly below benchmark of 68), particularly through integrating components that currently create friction for students' work-up process.

Motivational Design Survey (IMMS) Results*

IMMS Subscale Scores		
Item	Mean	SD
Attention Subscale	3.64	1.19
Relevance Subscale	3.92	1.07
Confidence Subscale	3.94	1.09
Satisfaction Subscale	3.48	1.25

*Note: The Instructional Materials Motivational Survey (IMMS) is a 5 pt likert scale designed to measure four aspects of motivation related to instructional materials: Attention; Relevance; Confidence; and Satisfaction.

Learning Experience Questionnaire Results

Students' Experience of the MRPDT	
Theme	Example Quotes
Benefit-The MRPDT Mediates Sensemaking Efforts	"I liked how it reminded me of what to look for. It almost served as a checklist to make sure I was ruling out everything."
Benefit-The MRPDT Orients a Systematic Discovery Process	"The MRPDT encouraged a systematic and concise approach to evaluating patient information that will be invaluable in the future."
Benefit-The MRPDT Supports Internalizing a Systematic Process	"I think when I look at patient cases now, my brain automatically thinks about those subject points to where I wouldn't need to look at them again."
Limitation-Aspects of the MRPDT UX Design Create Friction for Analyzing Patient Information	"I didn't like that I had to switch back and forth between tabs in my browser as well as type on a Microsoft Word document to complete the workups. It was too much going on."
Limitation-Preference for Case-Specific Rather than General Process for Case Analysis	"Make the tool more tailored to each patient case." "Maybe the tool should be more geared to the specific case."