Tasks/Goals	Users	Info Needs	Aspects of Info Users Value to Make a Decision	Barriers

Evaluation of Management Options for Drug-Drug Interactions	General Practitioner (Physician)	● EHR/patient data
		  ○ Patient History
		  ○ Lab Results, Tests
		  ○ Patient Medications
		  ○ Potentially Interacting Drugs
		● Patient Assessment
		  ○ Signs/ Symptoms
		● Prescriber's Knowledge and Experience
		● Knowledgebase
		  ○ DDI Symptoms
		  ○ Mechanism of Interaction
		  ○ Potential Substitutes
		  ○ Indications
		  ○ Evidence
			● Conciseness and Clarity
			● Timeliness
			● Accuracy
			● Grading of Evidence
			  ○ Type of Evidence
			  ○ Study Methods
			● Patient Context/ Relevance
			  ○ Disease States
			  ○ Risk Factors
			● Frequency
			  ○ Populations
			  ○ Demographics
			  ○ Risk Factors
			  ○ Comorbidities
			● Seriousness
			● Clinical Guidelines
			● How Colleagues Addressed Similar Scenarios
				● Incomplete Medication List, Allergies
				● Irrelevant Alerts/ Lack of Evidence/ Not Graded
				● No Recommendations
				● Formulary Restrictions
				● Incomplete Information (e.g., Patient Report)

	Community Pharmacist	● EHR/patient data
		  ○ Patient History
		  ○ Lab Results, Tests
		  ○ Patient Medications
		  ○ Duration of Therapy
		  ○ Potentially Interacting Drugs
		● Pharmacist's Knowledge and Experience
		● Knowledgebase
		  ○ DDI Symptoms
		  ○ Mechanism of Interaction
		  ○ Potential Substitutes
		  ○ Indications
		  ○ Evidence
			● Conciseness
			  ○ Grading of Evidence
			  ○ Type of Evidence
			  ○ Study Methods
			● Accuracy
			● Frequency
			  ○ Populations
			  ○ Demographics
			  ○ Risk Factors
			  ○ Comorbidities
			● Seriousness
			● Patient Context/ Relevance
			  ○ Compliance
			  ○ Disease States
			  ○ Risk Factors
			● Clinical Guidelines
				● Incomplete Medication List, Allergies
				● Delayed Information
				● Irrelevant Alerts/ Lack of Evidence/ Not Graded
				● No Recommendations
				● Incomplete Information (e.g., Patient Compliance)

Tasks/Goals	Users	Info Needs	Aspects of Info Users Value to Make a Decision	Barriers

Screening for a Drug-Drug Interactions	Licensed Practical Nurse	• EHR/patient data
		  ○ Patient History
		  ○ Lab Results, Tests
		  ○ Patient Medications
		  ○ Potentially Interacting Drugs
		• Nurse's Knowledge and Experience
		• Patient Assessment
		  ○ Signs/ Symptoms
		• Knowledgebase
		  ○ Symptoms
		  ○ Potential Substitutes
		  ○ Evidence
			• Conciseness
			• Evidence (to support discussion with physician)
			• Patient Context/ Relevance
			• Recommendations
			• Institutional Protocols
				• Not Empowered to Confront Physician
				• Detecting Symptoms (e.g., nonverbal patients)
				• Irrelevant Alerts/ Lack of Evidence/ Not Graded
				• Incomplete Medication List, Allergies
				• No Recommendations

Treatment Planning (Source: Russ et al., *Health Informatics Journal*. 2010;16(4):287–305)	Physician	• EHR/patient data
		  ○ Patient's Medical History and Allergies
		  ○ Patient's Medications
		  ○ Potentially Interacting Drugs
		• Patient Assessment
		  ○ Signs/ Symptoms
		• Prescriber's Knowledge and Experience
		  ○ Conditions
		  ○ Medication/ Class
		• Knowledgebase
		  ○ Mechanisms
		  ○ Potential Substitutes
			• Conciseness
			• Grading of Evidence
			• Patient Context/ Relevance
			• Timeliness
			• Accuracy
			• Recommendations
			• Clinical Guidelines
				• Lack of Guidelines/ Evidence
				• Incomplete Medication List, Allergies
				• Evidence Not Graded
				• Lack of Recommendations
				• Incomplete Information (e.g., patient report)

Tasks/Goals	Users	Info Needs	Aspects of Info Users Value to Make a Decision	Barriers
Synthesis for Dissemination (source: unpublished manuscript)	Drug Compendium Editorial Board	• Literature 　○ Patient Demographics 　○ Patient-Specific Clinical Characteristics 　○ Temporal Overlap in Drug Administration • Member Knowledge • Knowledgebase 　○ Evidence 　○ Information Quality 　○ Mechanism of Interaction 　○ Biological Plausibility of Interaction 　○ Treatment Comparisons	• Grading of Evidence 　○ Type of Evidence 　○ Source of Evidence 　○ Study Methods • Relevance to DI Question • Study Results in Statistical Form • Result Magnitude • Statistical vs. Clinical Significance • Patient Populations 　○ Disease States 　○ Risk Factors • Frequency 　○ Populations 　○ Demographics 　○ Risk Factors 　○ Comorbidities • Seriousness	• Difficulty of Showing Lack of Association • Lack of Evidence (e.g., RCTs) or Weak Evidence • Access to Newly Published Research • Comprehensiveness vs. Clinically Relevance
	Librarian	• Literature 　○ Drugs 　○ Patient Demographics 　○ Patient-Specific Clinical Characteristics • Librarian Knowledge • Knowledgebase 　○ Mechanism of Interaction 　○ Information Quality	• Evidence Grading • Patient Populations • Summary of Study Results • Result Magnitude • Clinical Relevance	• Lack of Evidence (e.g., RCTs) • Weak Evidence • Information Overload
	Clinical Decision Support Team (Systems Analyst & Content Expert)	• EHR/patient data 　○ Patient Baseline (lab results, tests, etc.) 　○ Patient Medical History 　○ Patient Medications 　○ Patient Symptoms 　○ Family History 　○ Genetics 　○ Historical and Geographical trends of disease occurrence 　○ Published Clinical Data • EHR Standards/Schema • Knowledgebase 　○ Schema 　○ Adverse Drug Events • Algorithm	• Patient Context/ Relevance • Clinical Guidelines • Recommendations • Medicinal Effectiveness • Accuracy • Consistency • Severity • Type of DDI • Specification of Data • Simplicity • Minimizing cognitive load • Efficient interactions	• No Personalized Recommendation • No Patient Improvement • No Personalized Alerts(Alerts should be personalized and identified with EHR) • Data is not been filtered before it was given to physicians