

# **A Framework for Incorporating Patient Preferences to Deliver Participatory Medicine via Interdisciplinary Healthcare Teams**

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# Overview

- Background
- Method
- Conceptual framework
- Case study
- Discussion

# Background

- We are seeing more care delivery by interdisciplinary healthcare teams (IHTs)
- A big challenge of care delivery via an IHT is integrating the various workflows and information flows of the different IHT members (Kuziemyky et al., 2011)
- Clinical workflows often focus on individual providers and do not scale up well to support IHTs (Unertl et al., 2012, Ozkaynak et al., 2013)

# Background cont.

- Participatory medicine refers to the equal participation of patients and/or their family members and clinical IHT members in decisions about care delivery
- Similar challenges in supporting patient workflow have been experienced (Ozkaynak et al., 2013)
- Health information systems (HISs) are well suited to support participatory medicine but existing HISs, however, often focus on individual workflows (Dorr et al., 2007)

# Background cont.

- “healthicant,” activities require active elicitation of patient preferences (Sherer, 2014)
- We need more formal approaches for developing distributed models of IHTs that support the dynamic integration an IHT including patient preferences

# Method

- Develop a framework for participatory medicine that integrates different IHT members and workflows including the incorporation of patient preferences about care delivery options
- Two phase modeling approach – conceptual framework and domain ontology

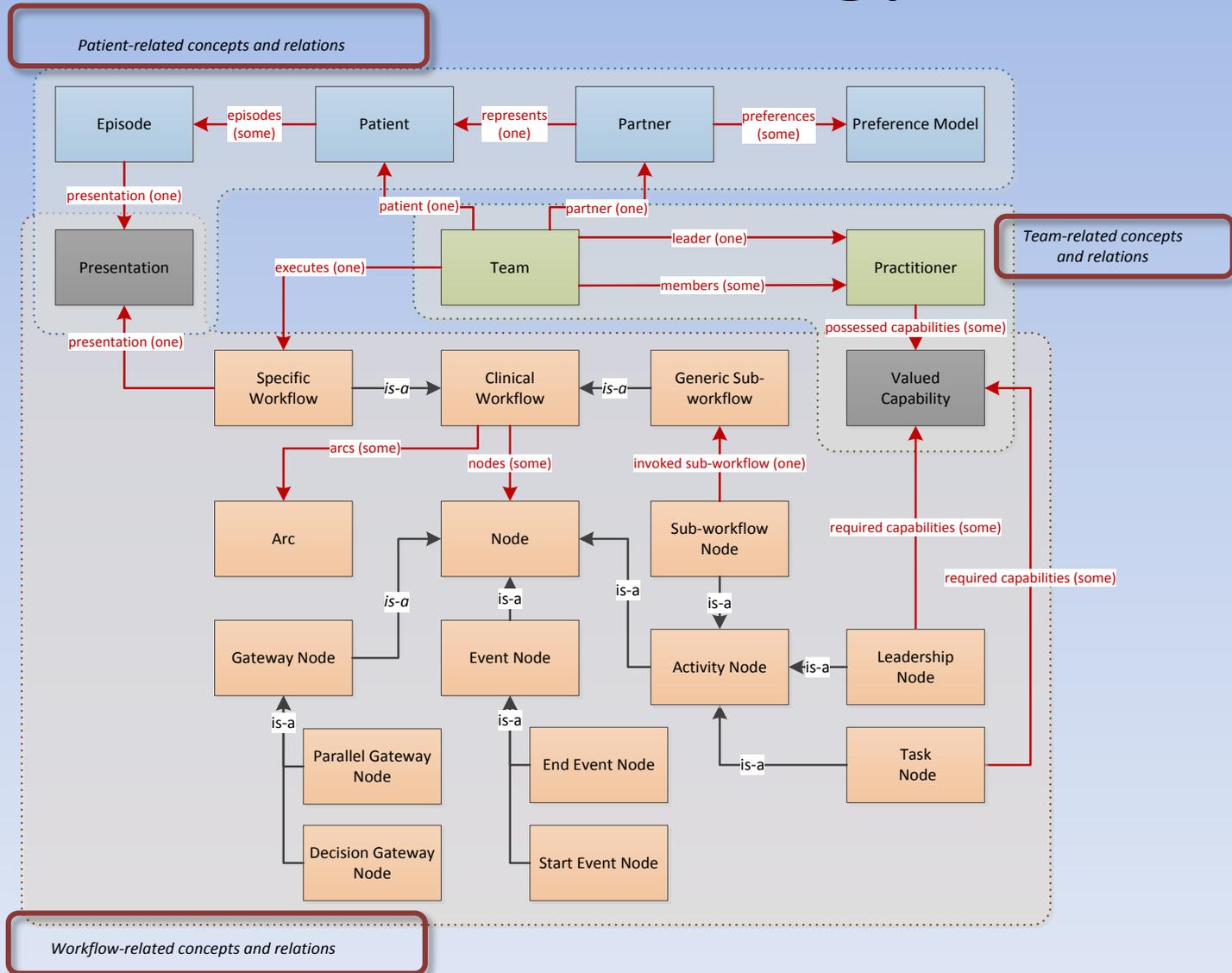
# Conceptual Framework

- A semi-formal (textual) description of important concepts needed for modeling an IHT (e.g., team, patient, preferences, and workflow), relations between them, and strategies to operationalize these concepts
- Assume that an IHT manages a patient according to a presentation-specific workflow
- The team has a *leader* responsible for overseeing the execution of the workflow, for handling exceptional situations and for assigning workflow tasks to appropriate team members

# Domain Ontology

- Domain ontology that formalizes the PM-IHT framework
- Three main parts of the ontology: team, patient and workflow related concepts and relations

# Ontology



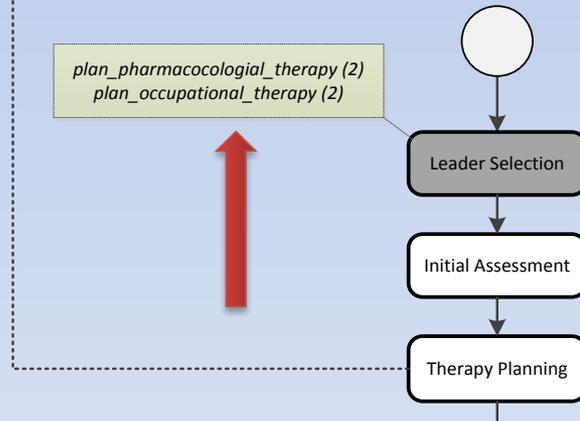
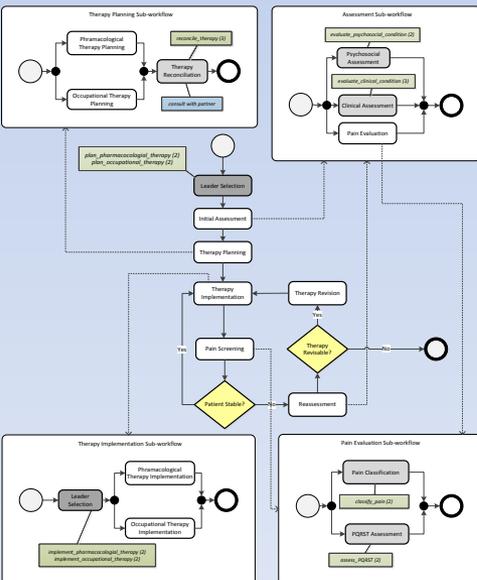
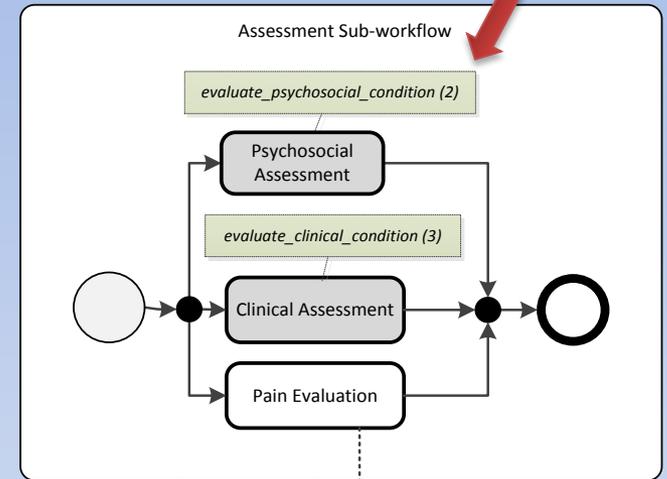
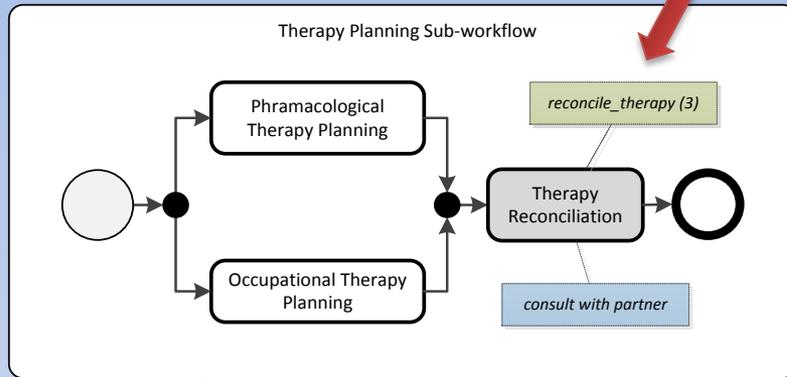
# Incorporating Patient Preferences

- Explicit preference model to enable patient preferences to be elicited as part of care delivery
- Leader is responsible for implementing the preferences

# Case study: Palliative Care Pain Management

- Pain management is a significant component of any palliative care management protocol but is very patient specific, particularly treatment protocols
- Starts with assembling a palliative care team according to the framework presented earlier in order to execute the appropriate workflow
- Establish an IHT leader who possesses the capabilities specified in the workflow and then enact the workflow
- Patient preferences then drive the therapy implementation workflow

# Pain Management Workflow



*plan\_pharmacological\_therapy (2)*  
*plan\_occupational\_therapy (2)*



# Workflow and Capabilities

Do **not** do role based assignment

From previous workflow



Practitioner	Possessed valued capabilities
Palliative care physician	access_PQRST (2) classify_pain (2), evaluate_clinical_condition (3) reconcile_therapy (3) plan_pharmacological_therapy (3) plan_occupational_therapy (2)
Clinical nurse specialist	assess_PQRST (3) classify_pain (3) evaluate_clinical_condition (2) evaluate_psychosocial_condition (2) implement_pharmaceutical_therapy (2) implement_occupational_therapy (3)
Nurse practitioner	evaluate_clinical_condition (1) implement_pharmaceutical_therapy (2) implement_occupational_therapy (1)

# Considering Partner's Preferences in Therapy Planning

	Pharmacological	Adjuvant	Non-pharmacological
Therapy 1	Acetaminophen administered orally	Antidepressant medication	Superficial heat & cold method
Therapy 2	NSAID with transdermal administration	Antidepressant medication	Guided imagery
Therapy 3	Cannabinoids by oral mucosal spray	None	None



Complexity		Drowsiness	
Evaluation	Marginal value	Evaluation	Marginal value
low	0.4	minimal	0.6
medium	0.2	moderate	0.2
high	0.0	maximal	0.0



	Complexity	Drowsiness	Overall value
Therapy 1	medium	moderate	0.4
Therapy 2	low	moderate	0.6
Therapy 3	low	minimal	1.0

# Discussion

- There is a shortcoming of studies that illustrate how to operationalize participatory medicine through an IHT
- We developed a framework for IHTs to support participatory medicine that includes patient participation
- The basis of our work is a workflow, practitioners (IHT), patient preferences and assembling the IHT for a specific situation

# Discussion

- Introduce the notion of capabilities and to assign IHT members to tasks as part of the workflow
- A preference model enables the patient or family member to make an informed decision about their preference
- Next step is HIT design based on the framework

# Questions

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