Translation of Guideline Knowledge for Decision Support

- Collaborators at Stanford, Harvard and Columbia
- Task: Knowledge engineers individually encode guidelines for vaccine administration and for workup of breast mass
- Test: Submit standardized patients
- Outcome: Different recommendations would be given for the same patient

Patel VL. JAMIA 1998
Challenge of Representing Guideline Knowledge Electronically

Published Guideline

Black Box

Computer-Based Guideline Implementation
Black Box

- Narrative Guideline
- Semi-structured
- Semi-formal
- Formal
Narrative Guideline

Semi-structured

Semi-formal

Formal
Narrative to Semi-Structured Narrative Guideline

GEM Cutter

Semi-structured XML file
Quality & Implementability Appraisals
Semi-Structured to Semi-Formal

Narrative Guideline

Semi-structured

XML file
Quality & Implementability Appraisals

EXTRACTOR Transforms

Semi-formal

Statement logic
Coded decision variables & actions
Action-types
Narrative Guideline

Semi-structured

Semi-formal

Statement logic
Coded decision variables & actions
Action-types
Local workflow & barrier (technical, workflow variance, people, organizational) analysis; local codes; origins/insertions

Formal

Local EHR scripting language; UI choices