Efficient Population of Structured Data Forms Using Syntactic Constraints and Intermediate Text

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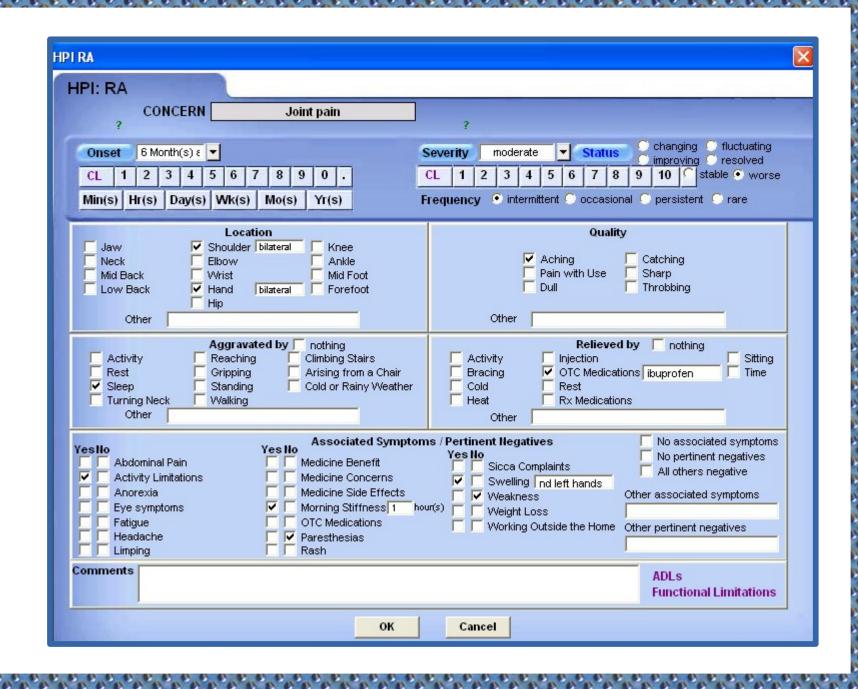University of Illinois
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• Filling Forms

- Major Frustration of EHR/EMR?

- *Mayo Clinic Proceedings* July 2016:

  "Clerical burden and burnout in US physicians"

- GUI 2d layout mixes concerns:
  1. display of data
  2. acquisition of data

• Information Flow

- Elements found / decided out-of-order / Sometimes different pages & screens

- Doctors should not have to wait / Do not like to wait

- Source of error / Incomplete documentation

• Mouse Movement & Selection

- CCF SemanticDB outcomes reporting Bottleneck

- Mouse-to-Keyboard-to-Mouse is for Novices

- Minimized mouse movement, resized targets

- Scribes / Docs are experts, need Expert Modes

• Auto-Generated Shortcuts

• Syntactic Matching

- Nothing else matches NNN-NN-NNNN but Social Security Number

- Where there are two dates, MM/DD/YY
  1. Define priority or
  2. Require explicit shorthand

• Conclusions

- Efficient in a real-time documentation setting

- Bridges the gap between natural language extraction and keyboard shortcuts

- Future statistical and database hinting

- EHR vendors should have this kind of R & D