

REDHot OMOP

Facilitating Semantic Interoperability in REDCap with FHIR and the OMOP CDM

PRESENTER:  
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INTRO:

When generating case report forms, researchers inevitably augment the data with some clinical knowledge. Then, when researchers seek to review various sources of information for a retrospective observational research study, the main concerns are:

- “How do we get the information from the case reports into the data model?”
- “How do we address a lack of standardization in the collection and processing the data collected in reports from disparate sources?”

REDHot OMOP is a SMART on FHIR application that could leverage the benefits of FHIR and OMOP to provide a pipeline for data standardized toward improving translational and observational research endeavors.

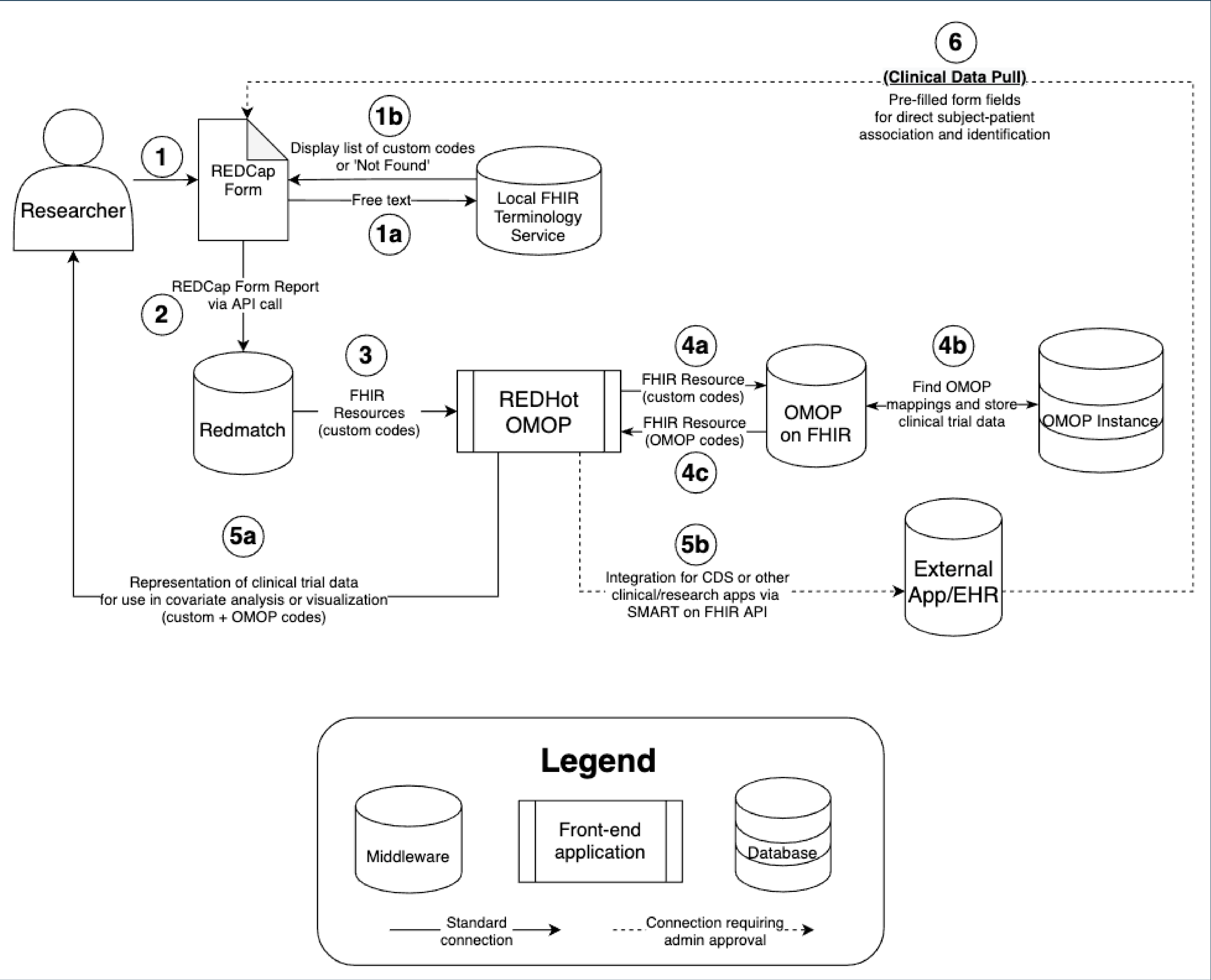
METHODS

1. User enters data into a REDCap Form
  - a. Free text is handled to find any user-defined codeable concepts
  - b. All possible local codes are returned
2. Form Report is sent to Redmatch to convert findings into FHIR Resources
3. Resources sent to REDHot OMOP UI
4. Concept Mapping
  - a. Send resource in local terminology
  - b. Store data and map codes
  - c. Send resource with OMOP codes
5. Data Distribution from app
  - a. Visualization/analysis
  - b. Clinical Decision Support
6. Pre-fill fields with relevant data via REDCap CDP (\*supplemental step\*)

CONCLUSIONS

- REDHot OMOP could support interoperable data exchange bidirectionally between observational research and clinical practice with the potential to foster more robust learning health systems and accelerate existing clinical research practices.

REDHot OMOP Architecture



Example workflow of data as researchers complete REDCap forms

NEXT STEPS:

- Develop SMART on FHIR interface
- Test on servers with dummy OMOP instances
- Evaluate within the context of new FHIR & REDCap and FHIR & OHDSI collaborations

Scan here to read the full abstract



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