

Leveraging FHIR to create a patient-centric electronic health record

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The why



Omni Homestead, VA, © T. Schleyer, 2016

Health information
should flow like water ...
... fast, slow, around
obstacles ...
... but, ultimately,
unimpeded.

Where does information not flow like water?



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- between healthcare systems
- within healthcare systems
- between care settings (eg ED ↔ primary care)
- ... pretty much everywhere ☹️

Our use case

The screenshot shows a mobile application interface for a medication entry. At the top, the status bar indicates 'iPhone 6s - iPhone 6s / iOS 9.3 (13E230)', 'Carrier', and the time '6:54 PM'. Below the status bar is a browser-like address bar with 'localhost' and a refresh icon. The main content area has a title 'Plavix 75 mg Tablet'. Below the title is an image of two red, oval-shaped tablets, one marked '75' and the other 'CD'. Under the image, the text reads 'Take once daily with water'. This is followed by 'Last prescribed: Sat, April 23, 2016 5:49 pm' and 'Used to: prevent heart attacks and strokes in persons after recent heart attacks, strokes or blood circulation disease. Also used with aspirin to treat new/worsening chest pain.' Below this is a section titled 'I am taking this med as prescribed:' with three buttons: 'Yes', 'No', and 'Not sure'. The 'No' button is highlighted. Underneath is the question 'Why don't you take this med?' followed by four checkboxes: 'makes me sick', 'old prescription', 'too expensive', and 'other'. At the bottom of the form are three buttons: 'Previous', 'Next', and 'Review'. The very bottom of the screen shows a standard iOS navigation bar with back, forward, and other icons.

help patients create a unified, current medication list from multiple lists spread across several health IT systems

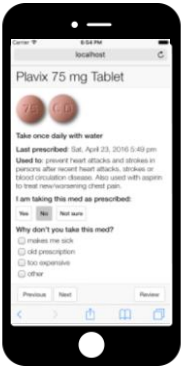
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Demo time!

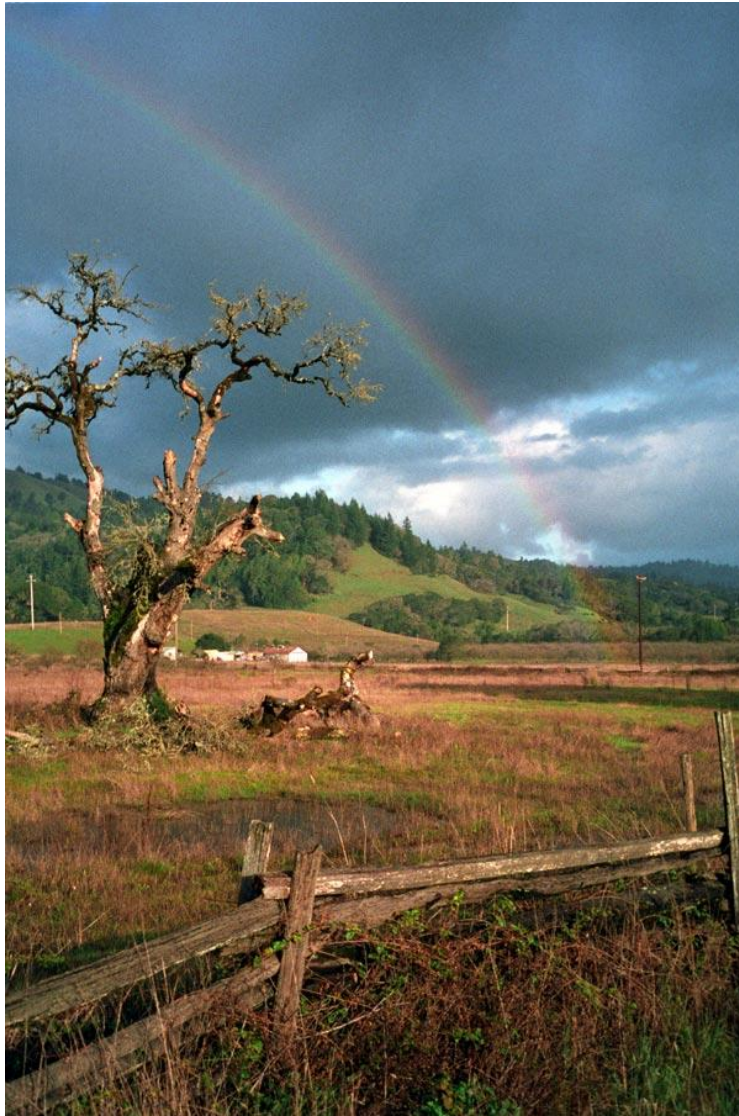


<https://github.com/bmamlin/org.regenstrief.fhirmedlistweb>

Technical details



- AngularJS application 
- out of scope: login, patient search
- Data sources:
 - medications: 2  FHIR[®] instances
 - medication images: 
 - indications: 



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FHIR on the Indiana Network for Patient Care (INPC)

Indiana Network for Patient Care

- largest and oldest health information exchange in US
- 12+ million patients
- 6+ billion observations
- traditional modes of data exchange
 - HL7 V2 messages
 - CCDs
 - PDFs
- granular data exchange challenging

FHIR on the INPC

- FHIR access layer on top of IHE data repository
- permits
 - standardized way to request and receive clinical data
 - fine-grained data access (ask for only what you need)
- accessible to any FHIR-based application

Challenges



Grand Tetons © T. Schleyer, 2016

- authentication (who you are)
- authorization (what you can do)
- FHIR a moving target
- content standardization (profiles will help)
- scalability (to be determined)

Considerations

- What are your data sources and how “FHIR-enabled” are they?
- How do you connect various records about the same patient?
- What you do with the result (e.g. w/r/t limited write capacity in FHIR)?

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A serene sunset scene over a vast body of water. The sun is a bright, glowing orb positioned just above the horizon, its light reflecting as a brilliant, vertical column of gold on the calm water's surface. The sky is filled with soft, wispy clouds, some of which are illuminated from below by the sun, creating a warm, orange and yellow glow. In the foreground, a long, dark, narrow landmass, possibly a sandbar or a small island, stretches horizontally across the lower portion of the frame, its silhouette contrasting with the lighter water. The overall atmosphere is peaceful and contemplative.

Thank you! Questions, comments?



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This talk:

