Leveraging FHIR to create a patient-centric electronic health record

Titus Schleyer, DMD, PhD
Doug Martin, MD
Burke Mamlin, MD
The why

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

Omni Homestead, VA, © T. Schleyer, 2016
Where does information not flow like water?

- between healthcare systems
- within healthcare systems
- between care settings (e.g. ED ⇔ primary care)
- … pretty much everywhere 😞
Our use case

help patients create a unified, current medication list from multiple lists spread across several health IT systems
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: Pillbox
  – indications: openFDA
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 IHIE 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

- 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 do you do with the result (e.g. w/r/t limited write capacity in FHIR)?
Thanks to

- all 17 Connectathon teams
- Regenstrief Institute/Indiana Health Information Exchange: Bryden Basaran, Chris Beesley, Josh Castagno, Jack Evans, Cindi Hart, Suranga Kasthurirathne, Brian Lawson, Meghan Mack, Jamee Malan, David Taylor, Ken Spry, Jeff Warvel
Thank you! Questions, comments?
This talk: