

FHIR Update and Challenges

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Chair of the Board HSPC

Chair of the Board FHIR Foundation

December
2009

- Strategic Health IT Advanced Research Projects (SHARP) - David Blumenthal
 - SMART – Substitutable medical objects (Boston Children’s Hospital)
 - SHARPn – Secondary Use of data (Mayo Clinic)

May 2011

- HL7 WG Meeting Orlando
 - Fast Healthcare Interoperability Resources (FHIR) – (HL7 v4?)
 - Clinical Information Modeling Initiative (CIMI)
 - Improve the interoperability of healthcare systems through shared implementable clinical information models.

Grahame Grieve April 2011

Our end user is someone who makes this stuff work. ...

But what is this end-user looking for? We kind of made a gambit **statement that we *could* define a world in which point to point mapping wouldn't be required.** I think we showed that:

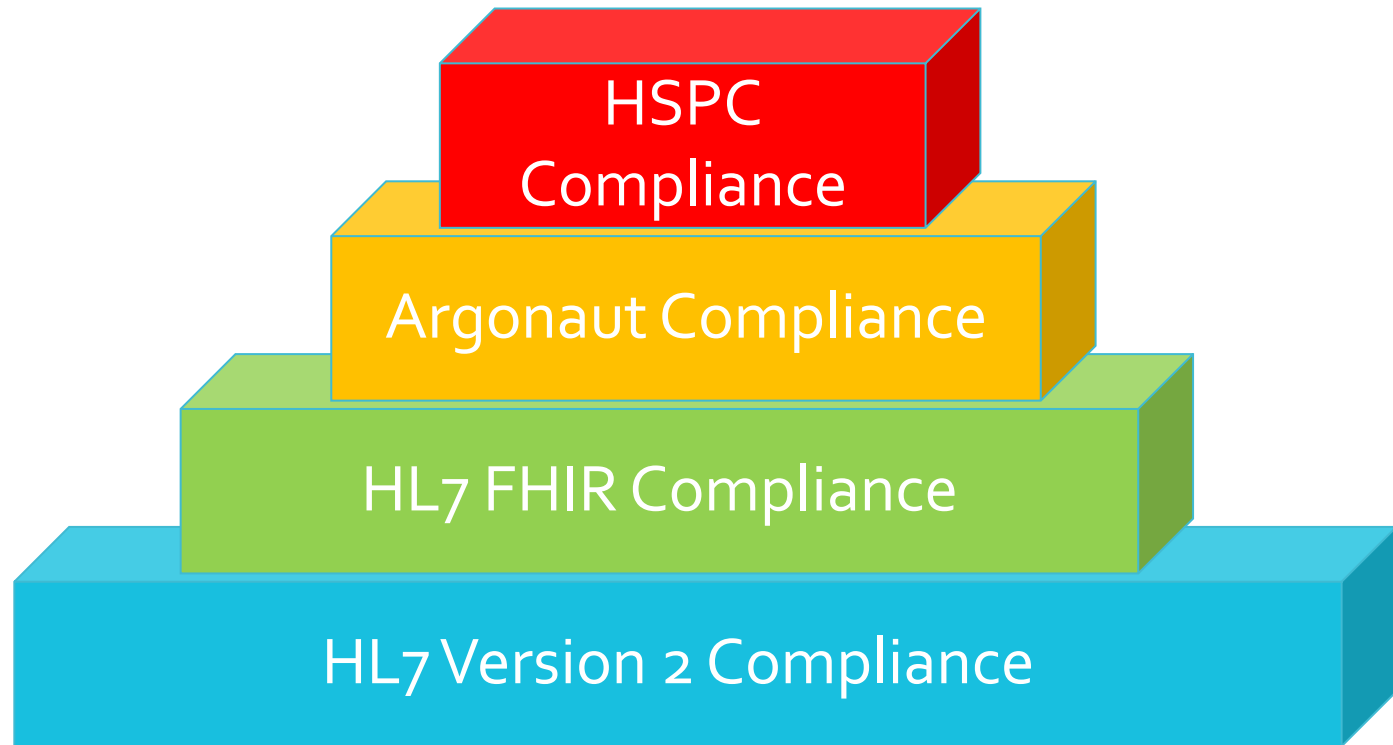
(a) that's not possible - all uses of V3 I've seen, ... have use case specific processing

(b) Users are increasingly telling us that they don't care. The price of this consistent semantics is higher than they'd pay *even if* we solved the consistent semantics problem. Instead, they want ad-hoc wire forms that are close to their domain use cases. And what they want from HL7 is a meta framework that's easy to adapt to this use, while ensuring that the point-to-point stuff isn't *too* hard.

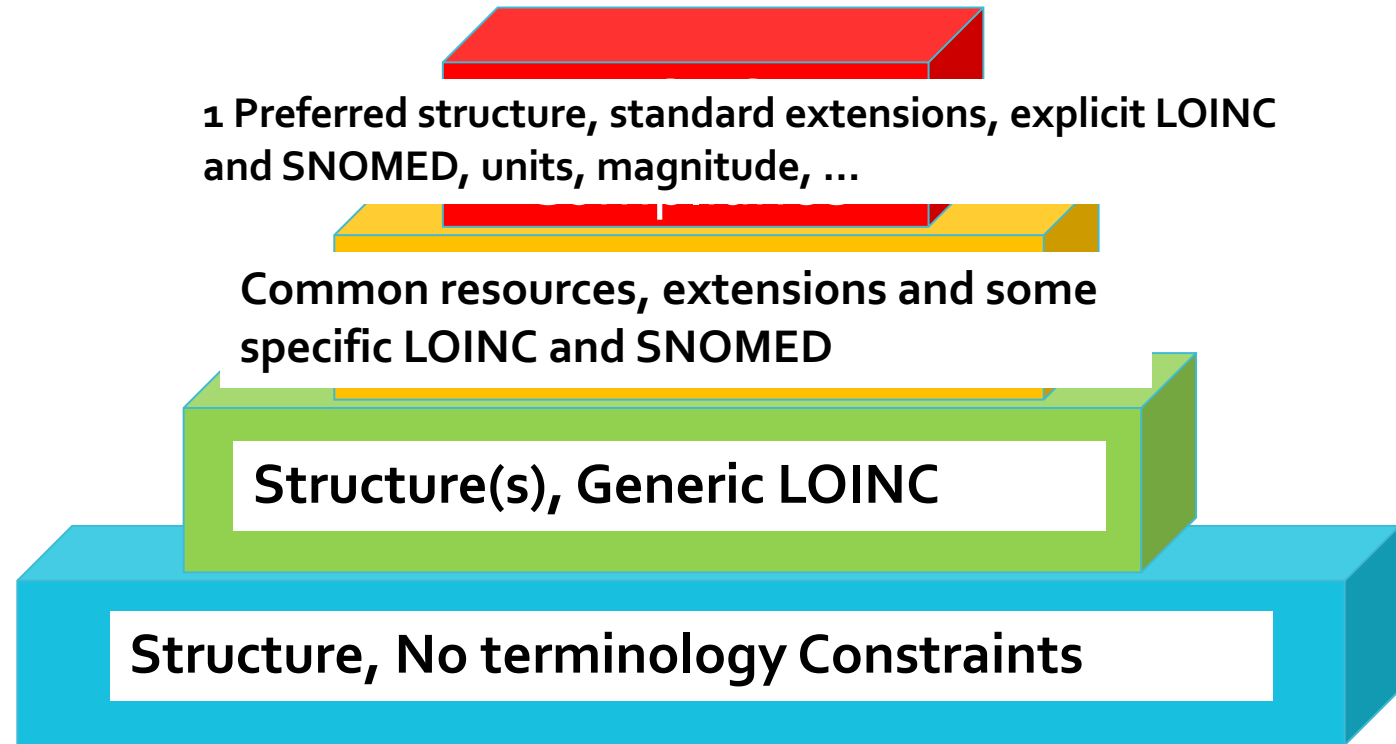
So. Is that right? Does it ring bells for anyone else?

Am I saying that we shouldn't try for plug-and-play?

Interoperability Pyramid



Interoperability Pyramid



Aug 2013

Healthcare Services Platform Consortium

Mission

Improve health by creating a vibrant, open ecosystem of interoperable applications, content, and services

Vision

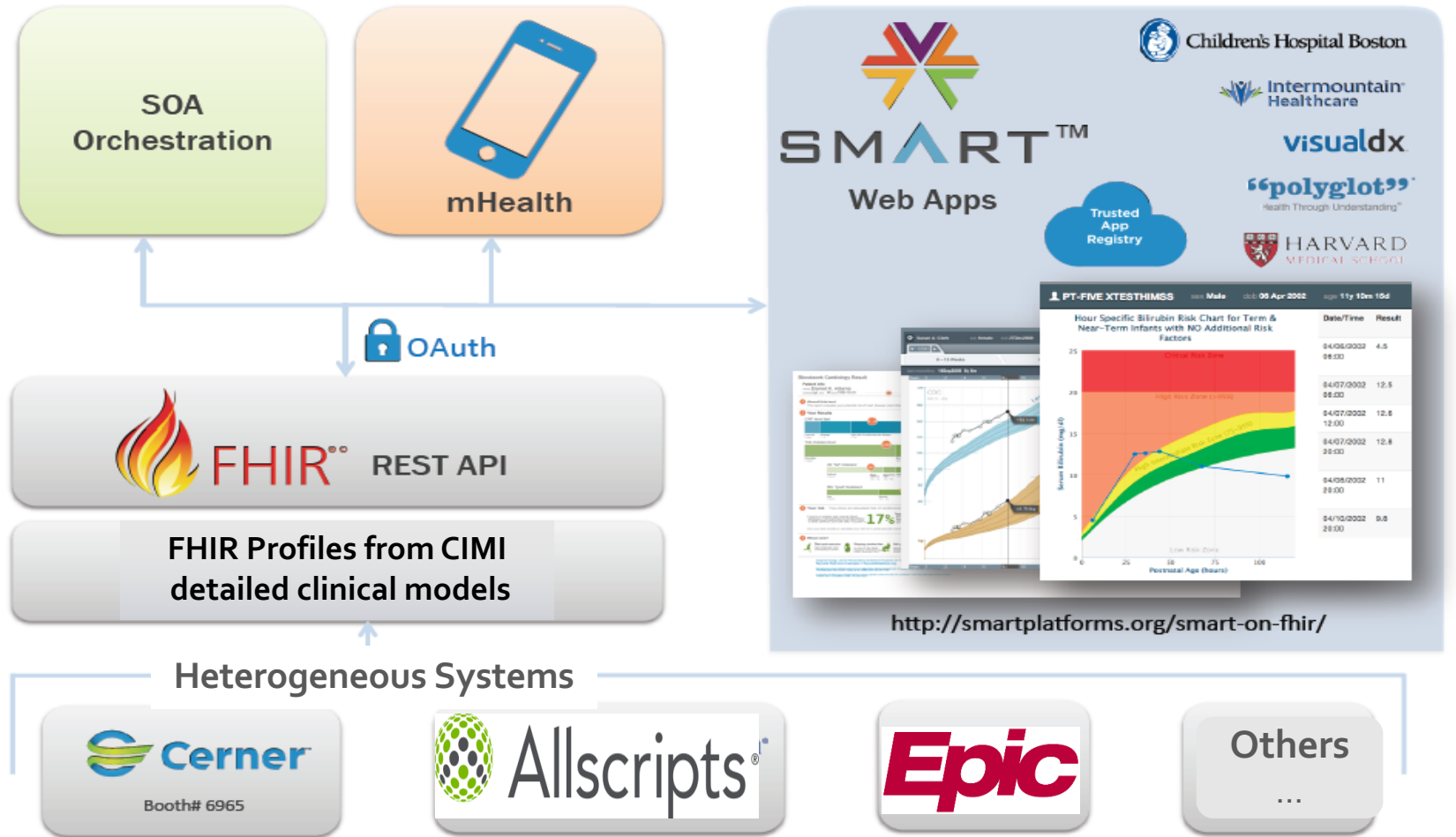
Be a provider-led organization accelerating the delivery of a platform that supports innovative healthcare applications for the improvement of health and healthcare.

Fall 2013

- SMART-on-FHIR
 - SMART team endorses FHIR rather than continue developing their own api

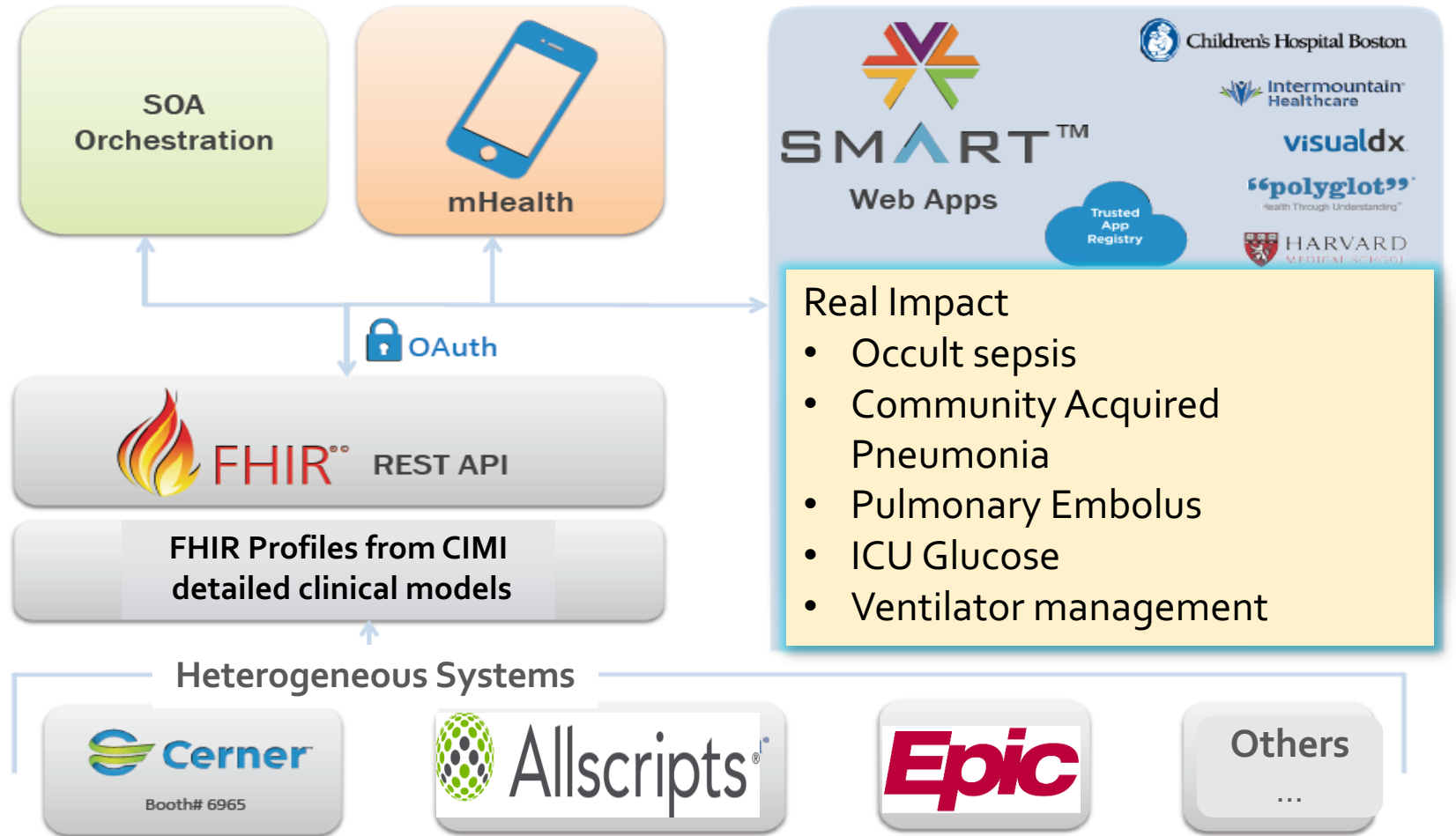
SMART on FHIR Vision

SMART on FHIR[®] – Open Platform Architecture

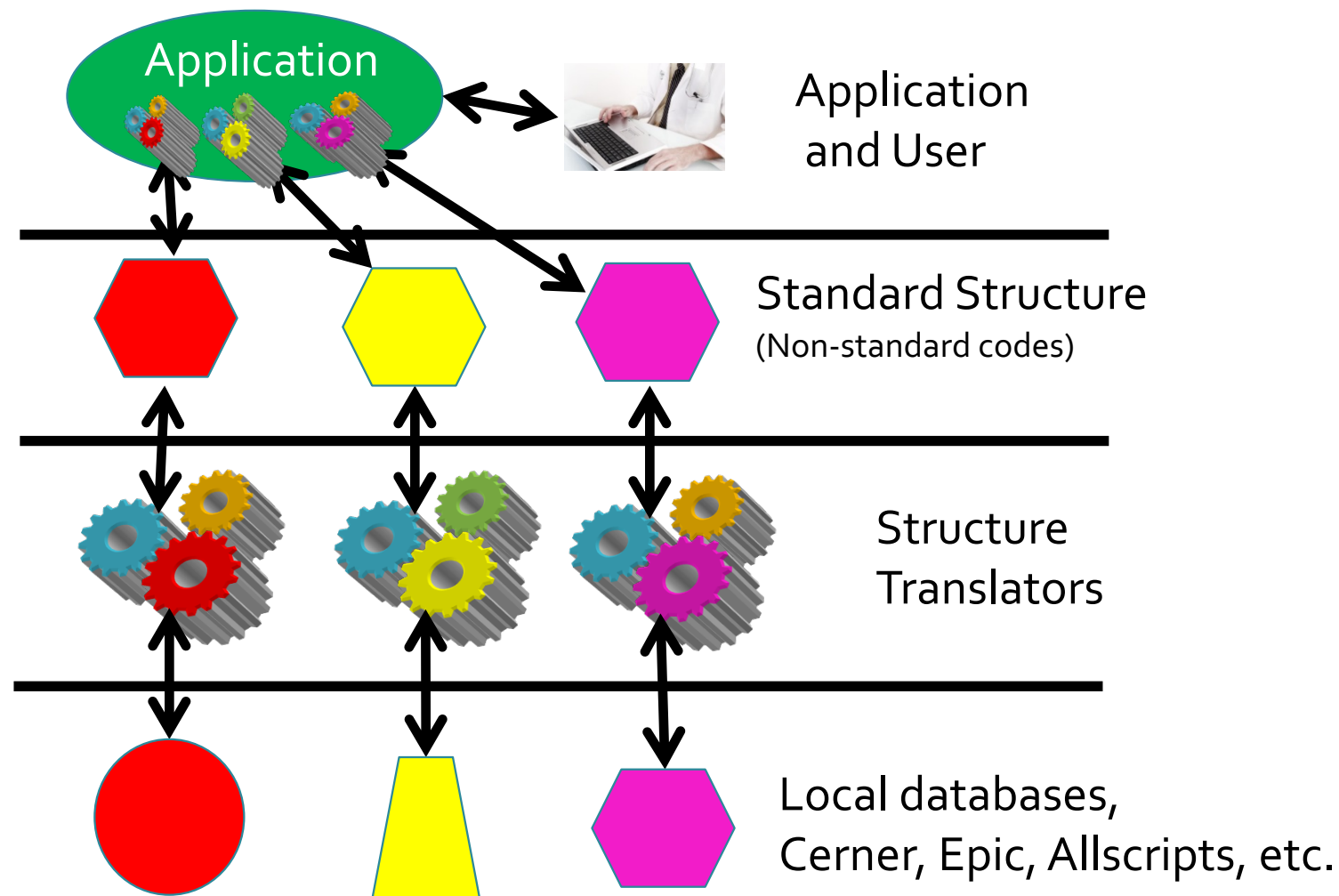


SMART on FHIR Vision

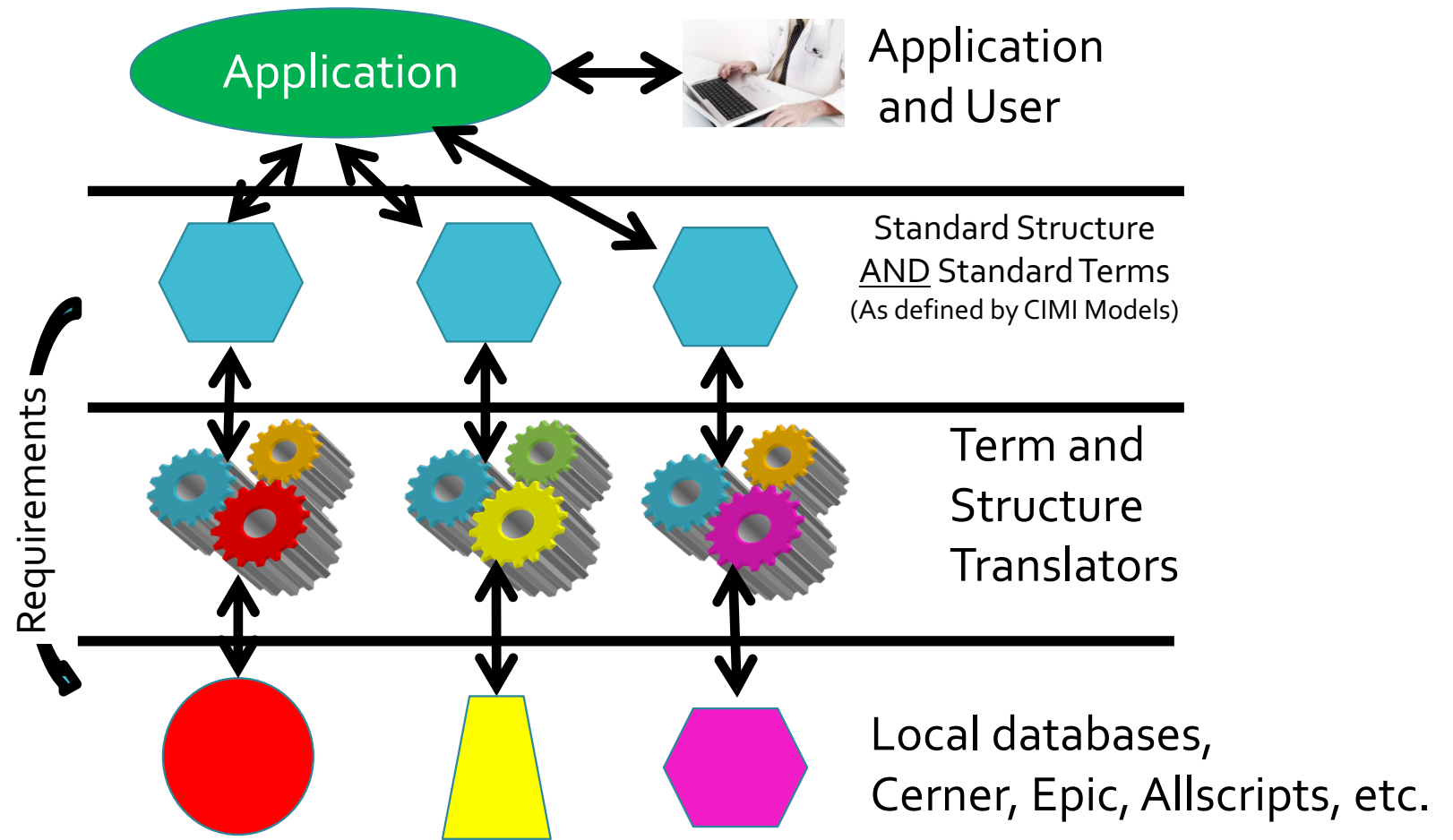
SMART on FHIR[®] – Open Platform Architecture



Partial Interoperability



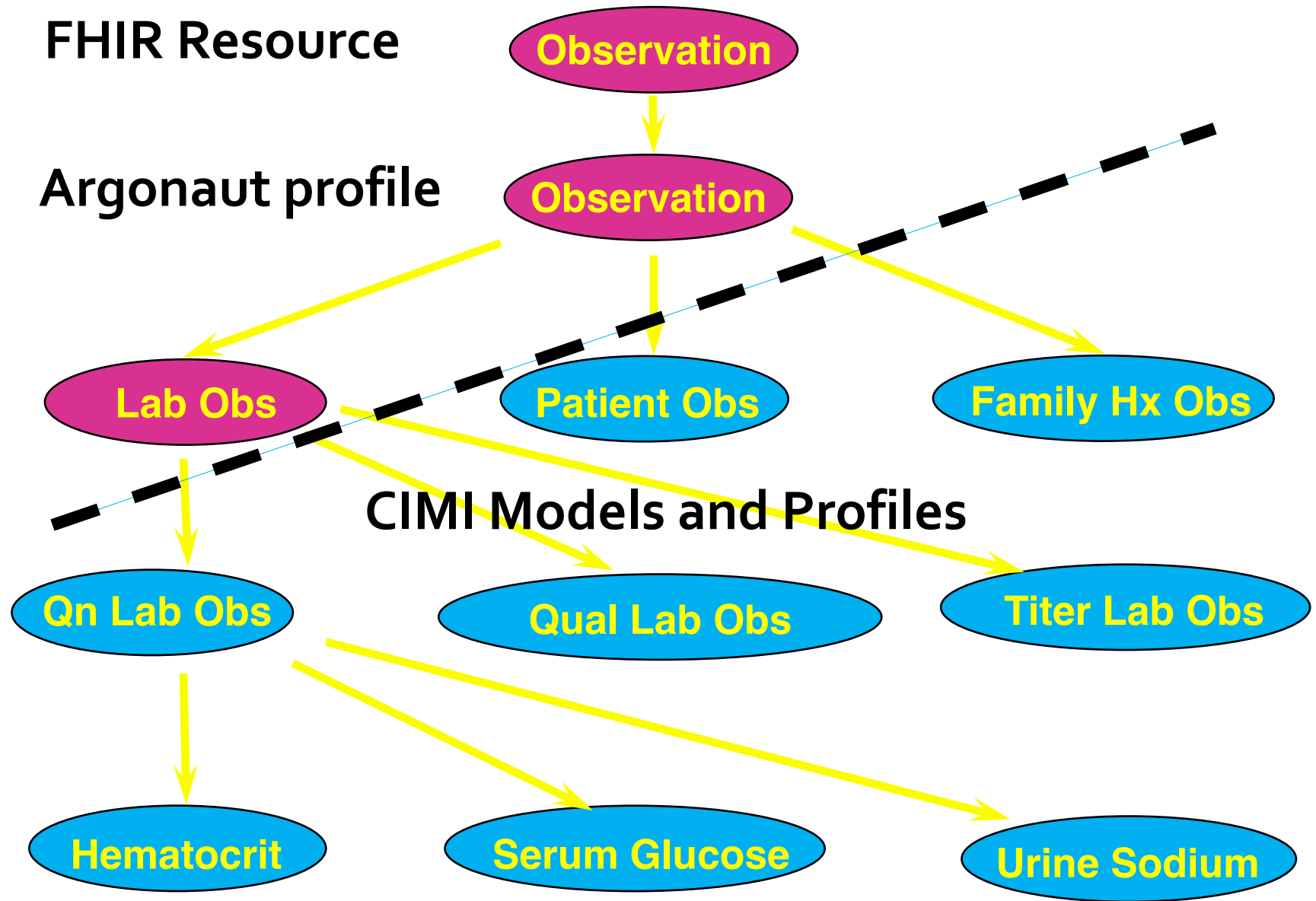
Preferred Strategy – Full Interoperability



June 2014

- JASON Group report (MITRE)
 - Sharing healthcare data should be more like the web
- Argonauts
 - Agora Restaurant
 - Jacob Reider, John Halamka, Aneesh Chopra, Arien Malec, Stan Huff
 - Accelerate FHIR development and use
 - FHIR resource profiles for MU Common Clinical Data Elements

Argonaut profiles and CIMI profiles



Invariant Profile Structure – CIMI Leaf Node Content

2016
CDS Hooks
Josh Mandel
Kevin
Shekleton



2 CDS Cards
(displayed in EHR)

information card

\$200 per month
(patient pays \$30)

suggestion card

Try HCTZ as first-line

Switch to HCTZ

app link card

Managing hypertension?
Launch JNC 8 Rx Pro

1 EHR triggers a
CDS hook

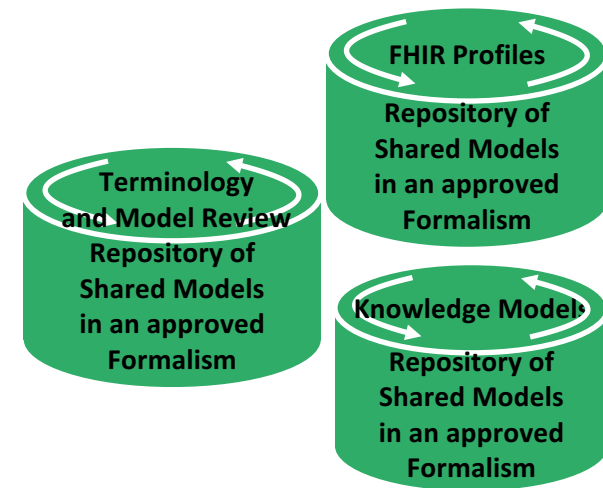
EHR Med Order

Rx Toprol XL
50 mg daily

July 2017
CIIC



- Clinical Information Interoperability Council
- Working specifically with professional organizations
 - American College of Surgeons
 - American College of Obstetricians and Gynecologists
 - American College of Cardiology
 - American Association of Family Physicians
 - Radiology
- Inviting others
 - American Nurses Association
 - Internal medicine
 - Anesthesiologists
 - Emergency Department
 - Etc.



Tasks for Clinical Experts

- What data should be collected? (part of domain analysis)
 - It will be different for different situations
 - Sherlock Holmes, “Data! Data! Data!” he cried impatiently. “I can’t make bricks without clay.”
- How should the data be modelled?
 - Two fields or one (the degree of pre and post coordination)
- What does the data mean?
 - How do we make computable definitions for diabetes mellitus, myocardial infarction, heart failure, chronic renal failure, etc.

Today

- Progress
 - FHIR is well spoken of everywhere, unprecedented support
 - FHIR works
 - FHIR APIs and SMART on FHIR applications are in use in production
 - Huge investment in FHIR development worldwide
 - FHIR is being implemented by EHR and software vendors
- Challenges
 - The base FHIR specification is a huge advance, but it does not provide plug-and-play interoperability
 - Model and Terminology Entropy
 - Need to expend energy to move to semantic interoperability
 - Getting FHIR services from vendors has been slower than expected, especially for write services
 - Vendor requirements for “development partner” agreements
 - CDS Hooks
 - Need more hooks
 - Need to support “headless” (background hooks service)
 - Need general publication and subscription for medical events

Thank you



@HSPConsortium

#HSPCImplementersForum