
The Office of the National Coordinator for
Health Information Technology



S&I Framework

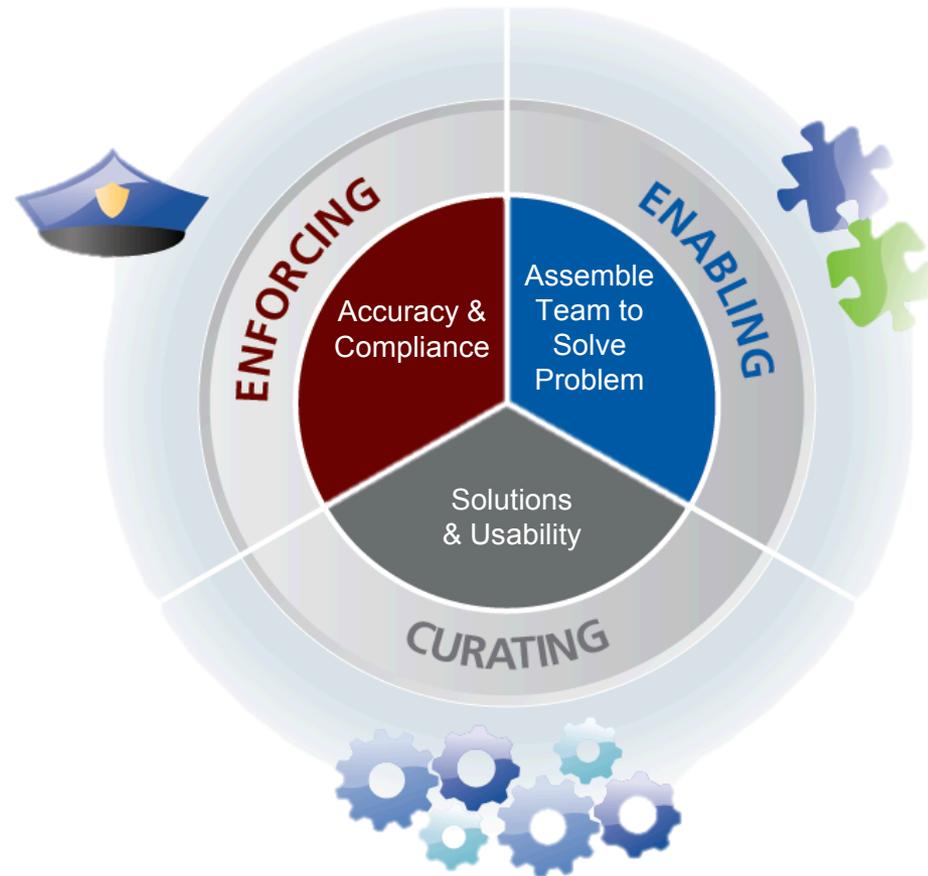
Recap of Consensus Findings
for HIT Standards Committee

September 28, 2011

How do we achieve interoperable healthcare information systems?

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- **Enable stakeholders** to come up with simple, shared solutions to common information exchange challenges
 - **Curate a portfolio** of standards, services, and policies that accelerate information exchange
 - **Enforce compliance** with validated information exchange standards, services and policies to assure interoperability between validated systems

Separate tasks, but one harmonious effort



Why the S&I Framework?

- For certain problem domains, Meaningful Use specifies multiple or ambiguous standards
- HITSC has recommended that a parsimonious set of standards be chosen to enable the exchange of health information with consistency and accuracy
- S&I Framework **enables** a broad, open, transparent community* of stakeholders to help guide the development of realistic, implementable solutions that will fulfill these recommendations
- S&I Framework **supports the HITSC** to accelerate the identification, piloting and use of standards for MU



* As of 15 Aug 2011, ~300 people representing ~200 organizations had committed to the S&I Framework

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- Recommended Meaningful Use Stage 2 objectives driving the need for convergence and more specificity in the MU1 and foreseen MU2 standards (e.g., summary of care, lab test results as structured data)
 - Release of PCAST Recommendations focused on a “universal exchange language” and an infrastructure allowing physicians and patients to assemble a patient’s data across institutional boundaries
 - Presentation of twelve (12) potential S&I initiatives by HITSC for feedback in a December 2010 FACA Blog Post. After discussions at the December HITSC meeting and in response to FACA blog comments, ToC and LRI were launched in January 2011
 - Evolution of Provider Directories analysis and recommendations from January through June 2011 HITSC meetings, including linkage to the S&I Framework at the 2/16 session

1. Although not perfect, does it represent the best we have so far?
2. Does it point us in the right direction?
3. Is it the next step in an incremental approach to refining the standards and implementation guides?
4. Does it support our policy objectives?
5. Can we update it as needed through the SDO community?
6. Is this a "path of least regret"?



S&I Framework Complements Other Standards Initiatives

INTEROPERABILITY STACK

Vocabulary & Code Sets

Clinical Quality WG & Vocab Task Force

Content Structure

Surveillance IG Power Team

Transport & Security

NwHIN Power Team

Access Services

STANDARDS & SPECIFICATIONS

ePrescribing of Discharge Meds Power Team

Transitions of Care

Lab Results Interface

Provider Directories – Query for Electronic Information (yellow pages)

Patient Matching Power Team

Metadata Analysis Power Team

NWHIN Modular Specifications

Certificate Interoperability

Provider Directories – Certificate Discovery for Direct

- NOTES : (1) We are actively involved in the programs themselves (e.g., through the Direct Project Boot Camp)
 (2) We attend, participate and occasionally facilitate their CoPs (e.g., the REC FI-HIE CoP, the State HIE Provider Directory and Lab CoPs, etc);
 (3) We bring the CoPs to the table when S&I initiatives need input that will affect them, etc.

Modular Specification Project

NwHIN Direct Specifications

Applicability Statement for Secure Health Transport

XDR and XDM for Direct Messaging

NwHIN Exchange Specifications

Service Specs

Patient Discovery, Query for Documents, Retrieve Documents

Administrative Distribution

Document Submission

Foundational Specs

Authorization Framework

Messaging Platform

Mod Spec Process

SME Input

Public Feedback

Internal Feedback

Development Sprints

Artifacts Produced:

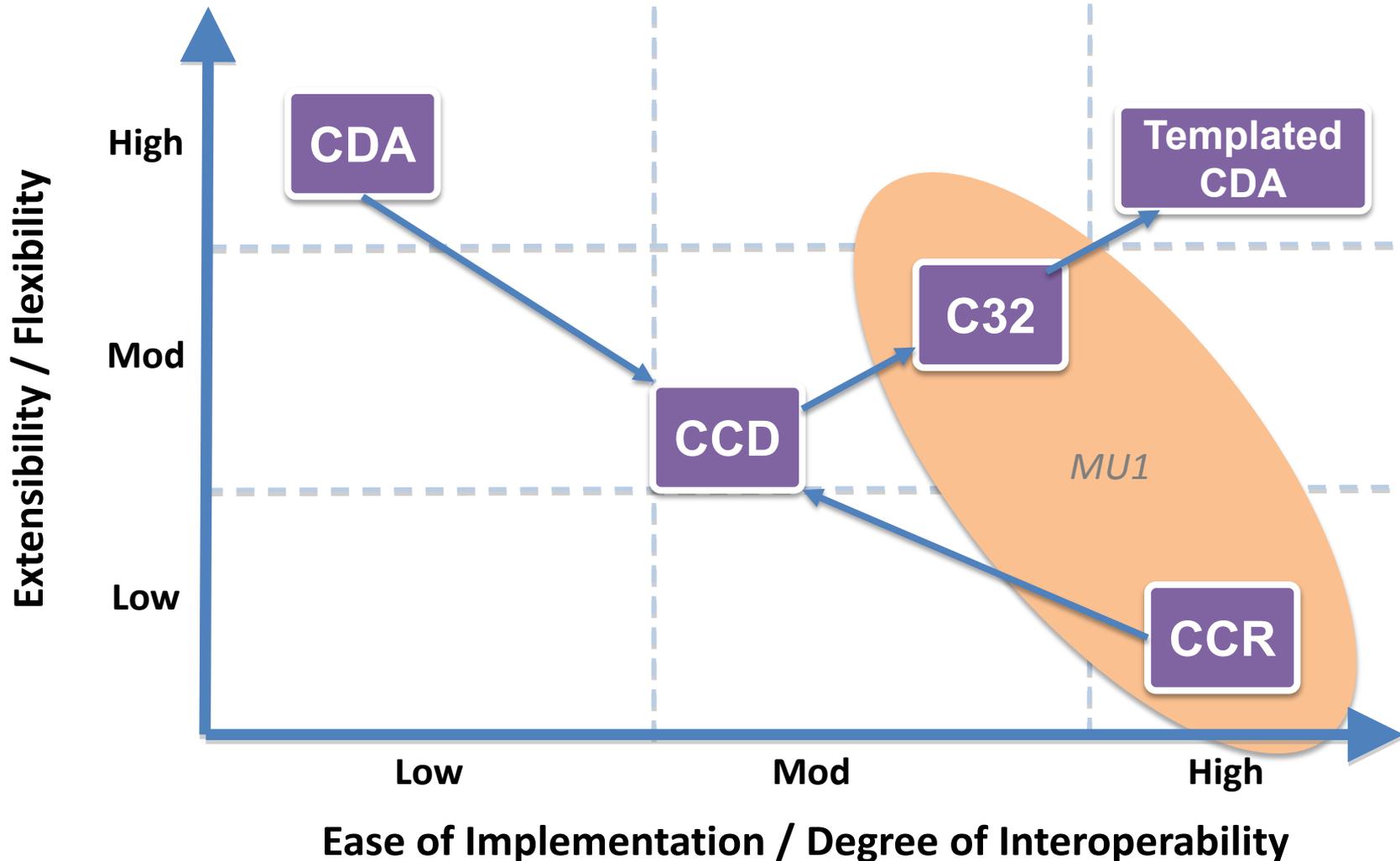
- Specification
- Reference Implementation
- Product Neutral Test Cases

Modular Specification: Secure Transport

- Direct Based Secure Transport
 - SMTP and S/MIME
 - XDR and XDM Conversions

- Exchange Based Secure Transport
 - SOAP over HTTP

Transitions of Care (ToC) Initiative: The Next Step in the Evolution



| CDA Data Location | HITSP Data Element Identifier and Name |
|--|--|
| cda:observation[cda:templateId/@root = '2.16.840.1.113883.10.20.1.31'] | Result Event Entry |
| cda:id | 15.01 - Result ID |
| cda:effectiveTime | 15.02 - Result Date/Time |
| cda:code/@code | 15.03 - Result Type |
| cda:statusCode | 15.04 - Result Status |
| cda:value | 15.05 - Result Value |
| cda:interpretationCode/@code | 15.06 - Result Interpretation |
| cda:referenceRange | 15.07 - Result Reference Range |

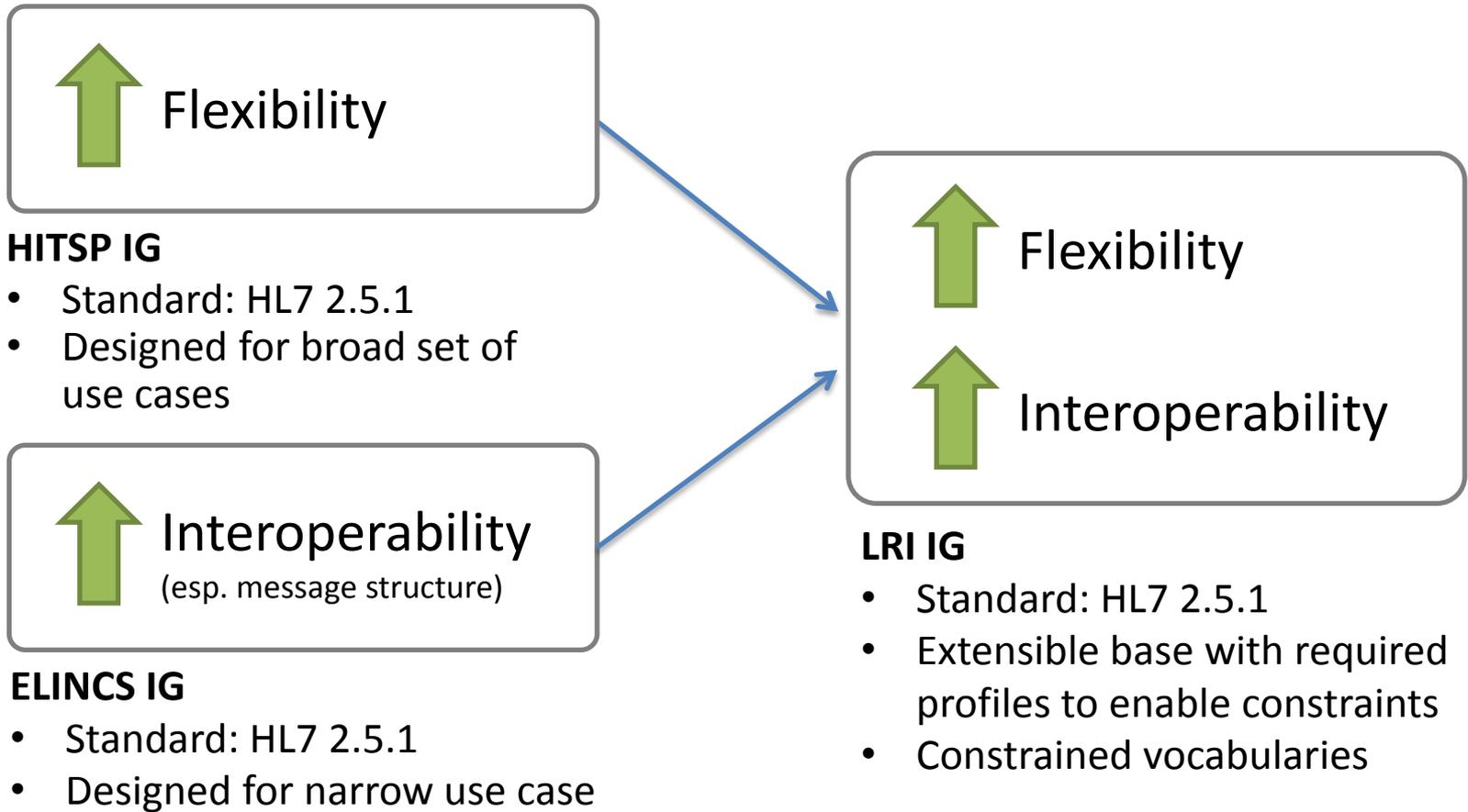
```
<result>
  <resultID>
  <resultDateTime>
  <resultType>
  <resultStatus>
  <resultValue>
  <resultInterpretation>
  <resultReferenceRange>
</result>
```

- Names of sections in the document are things that people find intuitive
 - “LabResults” rather than “templateID = XFY”
- Collection of “templates” and modules that can be put together for a transition of care
- Focus on using Consolidated CDA to generate a commonly-agreed to set of GreenCDA templates that are reusable across multiple care settings

Transitions of Care (ToC) Initiative: Ease of Implementation

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- Initiative community of 150 active participants – broad agreement
 - Existing base of CDA knowledge, expertise and tooling created by vendors who met Meaningful Use Stage 1
 - New, robust tooling, testing, and educational resources being created through S&I community (includes NIST)
 - Pilot process guided by implementation community:
 - ***Clinical Relevance of ToC Clinical Information Model***: Production implementations of CDA-based transfers of care constrained by CIM in Q4 2011, through collaboration with State HIE and Beacon programs
 - ***Accuracy of ToC Consolidated CDA Templates***: Commitment by EHR vendors to pilot and test new templates during Q4 2011
 - ***Simpler Implementation through GreenCDA transforms***: Targeting pilots of “green transforms” for Consolidated CDA in 2012

Lab Results Interface (LRI) Initiative: Best of Both Worlds



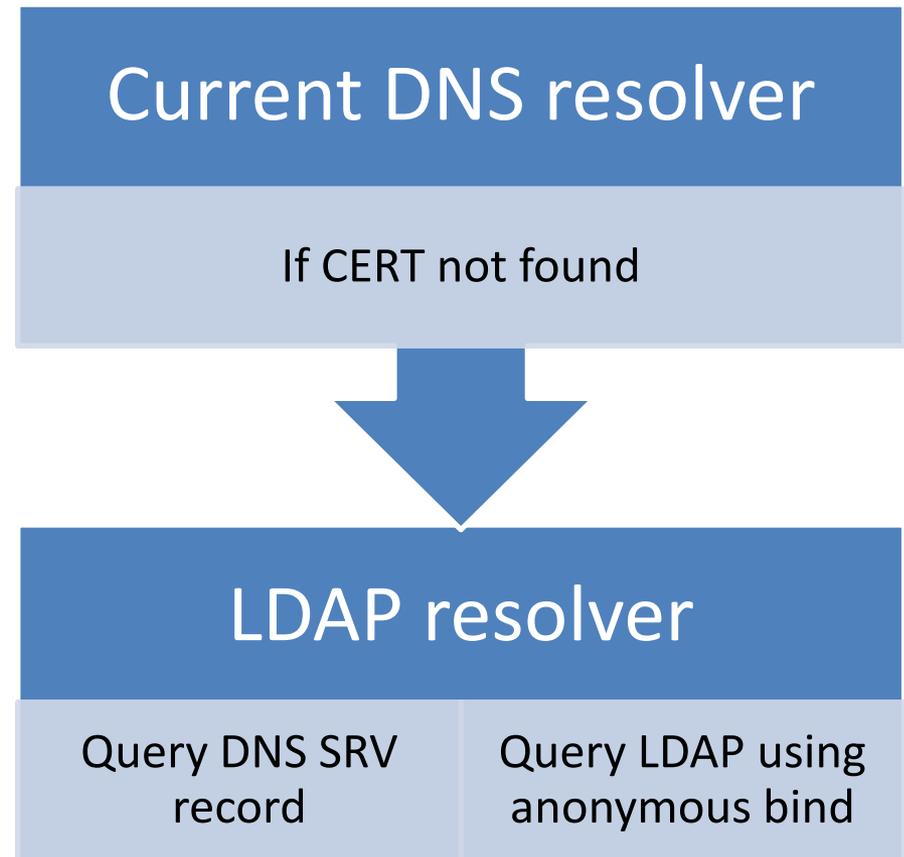
Lab Results Interface (LRI) Initiative: Consensus & Ease of Implementation

- **Consensus by broad and deep community of 90 active participants** that this guide is the right direction for the country
 - Support from proponents of ELINCS and HITSP IGs; clinical laboratories; LIS/EHR vendors; industry associations; government agencies; and numerous other clinical and technical experts
- **Ease of implementation:**
 - Based on standard (HL7 2.5.1) with 200+ current deployments
 - LRI IG reviewed by vendors for clarity and implementer-friendliness
 - HL7 balloting and reconciliation to ensure accuracy and vigor
 - Testing in conjunction with NIST
 - Piloting over Q4 2011 to obtain further feedback on bugs, etc.:
 - Focus on IG and consensus vocabularies (LOINC, SNOMED)
 - Longer-term piloting to evaluate vocabularies/code sets with insufficient empirical evidence today (UCUM, OIDs)

Provider Directories Initiative – Discovery of Digital Certificates Overview

- **Initiative community of 63 active** and 55 interested participants
- **Consensus that DNS for certificate distribution** is an effective part of the solution
- **Consensus that LDAP should be supported as the fail-over mechanism** – broadens availability of Direct Project compatibility by allowing participation of large community of organizations whose implementation of DNS will not support certificate discovery (i.e., no CERT record)

Direct Project Reference Implementation



Discovery of Digital Certificates – Summary of Analysis Underlying Proposed Solution

- DNS: Used as the backbone for Direct Project certificate discovery due to its availability, centralized roots and replication capability
- LDAP: Used for certificate discovery in a significant number of organizations
- DNS+LDAP solution is incremental to existing DNS solution:
 - Ensures ultimate discoverability based on the strength of DNS
 - Ensures broad, unrestricted accessibility to LDAP repositories of certificates
- Next Steps
 - S&I initiative community is updating implementation guidance
 - Direct Project Reference Implementation Workgroup believes the work required is minimal and complementary
 - Two Direct Project communities intend to pilot this solution over Q4 2011

Community suggests that this solution receive due consideration given the value to and interest by implementers – *subject to pilot testing*

Provider Directories Initiative – Query for Electronic Services Overview

- This work stream sought to define the query and response mechanism to a provider directory that one would use to specifically obtain a provider's electronic service information
 - *Electronic Service Information* is the information reasonably necessary to define an electronic destination and its ability to receive and consume a specific type of information, including the destination's electronic address, message framework, payload specification, and required security artifacts
 - Does the organization “speak” DIRECT? Does the organization “speak” Web services or REST?
- The S&I Provider Directories community agreed that standards to support queries to provider directories have limited deployment today
 - Broader experience in the use of these standards will provide opportunities for innovation and allow a market-driven evidence-based approach to standards selection

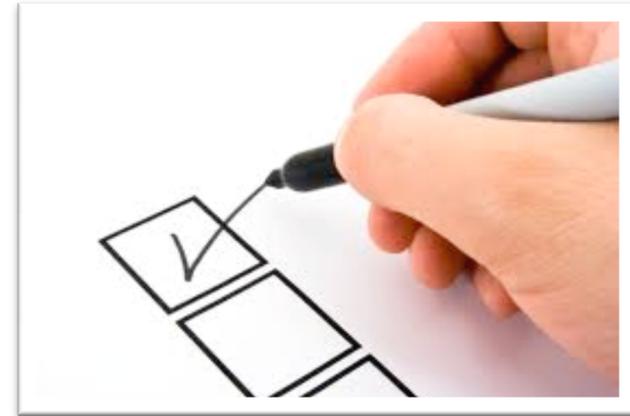
Community concluded that *no standard* should be recommended until additional real-world experience can be gained and evaluated

Query for Electronic Services – Data set for “yellow pages”

- In lieu of a validated consensus standard, this S&I initiative is taking interim steps to standards selection:
 - Identified the minimum data set for query (and response) for electronic service information from provider directories
 - Mapping this data set to existing standards (e.g., IHE HPD and X12N 274) for which there is advocacy within the community
- These steps will help vendors to implement solutions today with less risk, prove the viability of alternatives, and facilitate innovation
- Empirical evidence from real-world deployments will enable future evaluation* and standards selection

* there is no formal “standards evaluation” within the current scope of the initiative

- **Transitions of Care**
 - Significant convergence around Consolidated CDA templates
 - Recommendations: use *Implementation Guide for CDA Release 2.0 Consolidated CDA Templates* standard currently in ballot reconciliation in HL7
- **Lab Results Interface**
 - Broad agreement on usage of new LRI IG and required vocabularies
 - Recommendations: use *HL7 Version 2.5.1 Implementation Guide: Laboratory Results Interface*, currently in HL7 ballot process, with required vocabularies (LOINC, SNOMED)
 - Encourage and monitor pilots of optional vocabularies, including UCUM, OIDs and SNOMED CT (for specimen info), for future inclusion in implementation guidance
- **Provider Directories**
 - Consensus that a DNS-with-failover-to-LDAP solution allows a greater number of implementers to effectively enable certificate discovery and management.
 - Suggest pilots as next step
 - Agreement that standards to query provider directories need broader real-world usage





Appendix: Other S&I Framework Initiatives

Status: Current objectives completed

Key Findings:

- There is a gap in Federal PKI policy to address identity validation for organizations requesting server certificates
- ONC is working with GSA and with community interest groups to ensure that an appropriate policy is developed
- The initiative also outlined options for ONC to provide support to the industry

Suggested Actions for HIT Standards Committee:

- Monitor progress of GSA development of policies for organizational certificates
- Confirm that interim certificate practices align with anticipated FBCA policies
- Review transition plan for migration to FBCA organizational certificates
- Monitor development of a Health Bridge

Status: Launched on September 6, 2011

Objective:

- Establish standards and protocols for distributed population queries

Current Activities:

- Charter call for consensus
- Workgroups underway, focusing on:
 - Clinical: User stories
 - Technical: Abstract Model and applicable standards
 - Business: Requirements for privacy, security, data use
- Policy sandbox proposed to HIT Policy Committee and Tiger Team

Status: To be launched on October 5, 2011

Objective:

- Enable the implementation and management of disclosure within an electronic health information exchange environment so that individually identifiable health information may be appropriately shared

Current Activities:

- Call for participation/soft launch (9/19)
- Outreach to potential stakeholders (ongoing)
- Formal launch with outreach webinar (10/5)

Status: To be launched at the S&I Face-to-Face on October 18, 2011

Objective:

- Intends to pilot a new mechanism for providers to submit medical documentation to Medicare Review Contractors

Current Activities:

- Call for participation/soft launch (9/26)
- Outreach to potential stakeholders (ongoing)
- Formal launch (10/18, 9:30am)



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For more information on S&I Framework activities and
detailed consensus findings, please visit:

<http://wiki.siframework.org>