How do we achieve interoperable healthcare information systems?

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
S&I Initiatives: Establishing the Building Blocks of Health Information Exchange

Vocabulary & Code Sets
How should values be coded so that they are universally understood?

Content Structure
How should the message be formatted so that it is computable?

Transport
How does the message move from A to B?

Security
How do we ensure that messages are secure and private?

Services
How do health information exchange participants find each other?

The Nationwide Health Information Network will specify how these building blocks can be assembled together to form Solutions that address health interoperability issues.
An Example Patient Scenario

- A primary care doctor orders a lab test and gets the test back from the lab. She schedules the patient to be seen in the office to discuss the results.

- Based on the results of the test, the primary care doctor decides to send the patient to a subspecialist. She sends a summary of care record to the subspecialist electronically with a summary of the most recent visit.

- When the patient sees the subspecialist, it becomes apparent that there is a missing test that was done at a different hospital that would be helpful in taking care of the patient. Rather than repeating the test, the doctor queries the outside hospital for the lab test that she needs.
What will this transaction require?

The physician ordered an outpatient lab test on a patient, and the lab sends the information to your office. The patient is here to discuss the results.

- **Vocabulary & Code Sets**: How should values be coded so that they are universally understood?
- **Content Structure**: How should the message be formatted so that it is computable?
- **Transport**: How does the message move from A to B?
- **Security**: How do we ensure that messages are secure and private?
- **Services**: How do health information exchange participants find each other?

**Vocabulary & Code Sets**
- LOINC: to code lab results & observations

**Content Structure**
- HL7 2.5.1: to format the lab result so EHRs can incorporate it

**Transport**
- Direct: to securely send the lab result from the lab to the EHR

**Security**
- X.509: to ensure it is safely transmitted to the intended recipient

**Services**
- DNS+LDAP: to find the recipient’s X.509 certificate
S&I Framework: Strategy Overview

(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.

Strategic Drivers
- Health Outcome Policy Priorities

Tactical Drivers
- Health IT Focus Area / MU Alignment

Standards Challenges
- S&I Initiatives

Clinical Use Cases
- Use Cases, User Stories, UCR Elements

Technical Standards
- Standards, Data Models, Vocabularies

Infrastructure
- WWW, Wiki, Templates, Browser, etc.

Drives Value & Direction

Lowers Costs by Enabling Reuse
(1) We are actively involved in the programs themselves (e.g., through the Direct Project Boot Camp);
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Note that, for simplicity, some layers of the Portfolio Strategy stack have been omitted.
S&I Framework Approach: Create a collaborative, coordinated incremental standards process...

- **guided** by ONC, with input from Federal Advisory Committees,
- **enabled** and led by the an **open** community of industry participants
- who are **engaged** in solving **real world** problems

Value created through this approach:

- **Solves** real-world issues to enable health information exchange
- **Creates** leverage for ONC and other initiative sponsors by harnessing the expertise and passion of the community to solve problems
- **Empowers** the community to create the best solutions for interoperability and standards adoption
S&I Framework enables a reusable platform

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Portfolio</th>
<th>Platform</th>
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</thead>
<tbody>
<tr>
<td>E.g., Direct Project</td>
<td>S&amp;I Initiatives</td>
<td>Reusable Artifacts, Tools, Processes and Infrastructure</td>
</tr>
<tr>
<td>Focused on single challenge</td>
<td>Well-defined challenges</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Asset</th>
<th>Audience / Beneficiaries</th>
<th>Value Created</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artifacts</td>
<td>• ONC, SDOs, and S&amp;I Community</td>
<td>• Reusable components for new Use Cases, Standards, Pilots, etc.</td>
</tr>
<tr>
<td>Collaboration Tools (e.g., wiki)</td>
<td>• Existing and prospective participants</td>
<td>• Tools for initiative execution, sharing, and collaboration</td>
</tr>
<tr>
<td>Artifact Browser</td>
<td>• Analysts</td>
<td>• Repository of initiative artifacts that enables access, traceability, guidance and tooling to enable implementation and development</td>
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<tr>
<td></td>
<td>• Implementers</td>
<td></td>
</tr>
<tr>
<td>Initiative Coordination Handbook</td>
<td>• New S&amp;I Coordinators</td>
<td>• Guidelines for running initiatives, focused on:</td>
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<tr>
<td></td>
<td>• Participants and observers aiming to understand S&amp;I at deeper level</td>
<td>• Tactical elements, e.g., how to run workgroups</td>
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<tr>
<td></td>
<td>• Organizations aiming to leverage or replicate the S&amp;I Framework</td>
<td>• Strategic elements, e.g., how the S&amp;I Framework process creates a neutral environment for collaboration</td>
</tr>
<tr>
<td>Relationships &amp; Goodwill</td>
<td>• ONC, SDOs, Federal Agencies</td>
<td>• Relationships and goodwill developed through collaboration with broader community</td>
</tr>
<tr>
<td>WWW, Pilots Site, etc</td>
<td>• Public: community members, outside/interested parties, government agencies, etc.</td>
<td>• Information on the mission, process, participants, and output that can inform understanding and usage of the platform and deliverables</td>
</tr>
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Application of S&I Framework process to standards challenges

Shaded Area = Good Alignment with S&I Framework Process

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How do we operationalize standards analysis and harmonization?
Examples

Degree of Consensus

High

Mod

Low

Availability of Empirically-Validated Standards

Low

Mod

High

Track and encourage SDOs, Agencies, Coalitions, Community-Driven Pilots

federated provider directories

Delegate to HITSC WG or Power Team

immunization reporting

Enable Public Comments

FBCA cross-certification

Recommend as Priority for S&I Framework

distributed queries

lab orders

lab results

care transitions
How do we support S&I initiatives?

- **Self-Service**
  - Use of the S&I wiki
  - Use of paid-for WebEx and meeting recording facilities, if available
  - Periodic touch points with S&I Framework Coordination Team

- **Limited Support**
  - Self-Service Resources +
  - Facilitator to guide meetings and report back to S&I Framework Coordination Team

- **Strategic Support**
  - Hybrid Resources +
  - Targeted investment in specific components in line with ONC/partner objectives

- **Full Support**
  - Strategic Resources +
  - Full resources to complete deliverables in timely manner

Alignment with ONC Priorities (i.e., Value Created)
- High
- Mod
- Low

Unique Impact of S&I Framework (i.e., Degree of Platform Reuse)
- Low
- Mod
- High