FEDERAL HEALTH ARCHITECTURE PROGRAM

Introduction to the Standards Lifecycle and HITSP Harmonization Process

TIGER Webinar

FHA
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U.S. Department of Health and Human Services
Office of the National Coordinator for
Health Information Technology

Course Objectives

By the completion of this session, participants will be able to:

- Articulate the President's strategic framework
- Identify the organizations involved in executing the President's vision
- Describe the Standards Lifecycle and the HITSP Harmonization Framework
- Identify at least one way to get involved in the interoperability effort

Roadmap

- Vision
- The Standards Lifecycle
- HITSP Standards Harmonization Framework – Cycle One
- HITSP Standards Harmonization Framework – Cycle Two
- Closing Remarks/Next Steps

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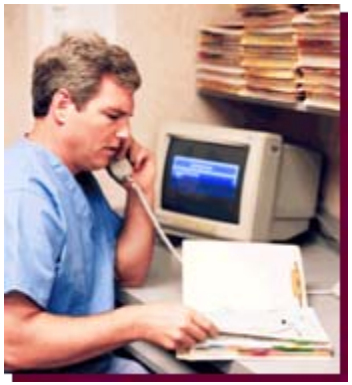
Vision

Health Information Anywhere Anytime



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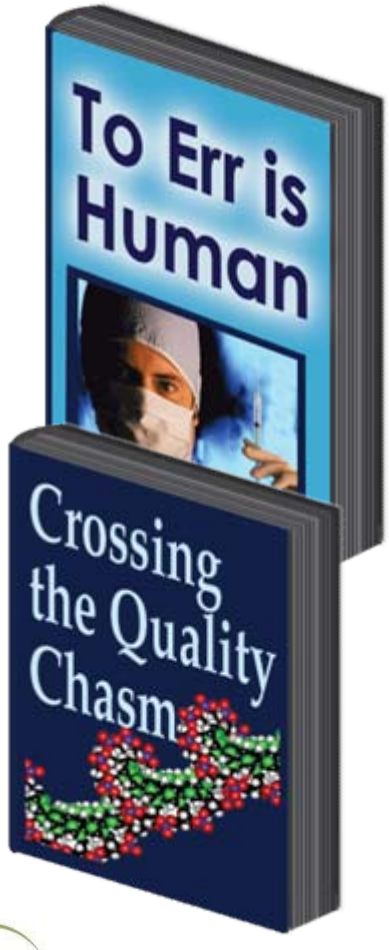
Context for Change



- **Major reports raise concerns about the safety and quality of our Health Care System**
- **Managed Care paradigm fails and is replaced by consumer-driven health care with greater cost sharing by consumers**
- **Medicare spending crisis looms**
- **Health IT is seen as engine of quality**

Strategic Framework

- **Goal 1 – Inform Clinical Practice**
  - Incentivize adoption of Electronic Health Records (EHR)
  - Promote EHR usability in rural and underserved areas
  - Reduce risk of EHR investment
- **Goal 2 – Interconnect Clinicians**
  - Foster regional cooperation
  - Develop a national health information network
  - Coordinate federal health information systems
- **Goal 3 – Personalize Care**
  - Encourage use of personal health records (PHR)
  - Enhanced informed consumer choice
  - Promote the use of tele-health systems
- **Goal 4 – Improve the Health of the Population**
  - Unify public health surveillance architectures
  - Streamline quality and health status monitoring
  - Accelerate research and dissemination of evidence into practice

Historical Timeline

November 2004 – RFI Issued
National Coordinator seeks public comment on Nationwide Information Network

October 2004 – BHIE
Bidirectional Health Information Exchange gives rise to bi-directional health information exchange between VA & DoD

July 2004 – HHS Health IT Summit
Issues *Framework for Strategic Action*
Establishes public-private partnership

April 2004 – Exec Order 13335
Announces President's Vision of EHR by 2014
Establishes National Coordinator for Health IT

Sept 2005 – AHIC Established
American Health Information Community (AHIC) is chartered to make recommendations to the Secretary of HHS on how to accelerate the development and adoption of health IT

August 2005 –
HHS establishes the Office of the National Coordinator for Health Information Technology (ONC)

March 2005 –
Health IT Leadership Panel determined that federal government should act as catalyst

December 2006 –
Secretary of HHS accepts AHIC recommendations on Interoperability Specifications

October 2006 –
Health Information Technology Standards Panel (HITSP) recommends to AHIC that Interoperability Specifications are ready for implementation testing

August 2006 –
Executive Order promoting quality and efficient health care in health care programs administered or sponsored by the federal government

September 2007 –
AHIC announces next set of priorities for cycle three use case development

July 2007 –
ONC Publishes Use Cases:
•Medication Mgmt
•Quality
•Consumer Access

January 2007 –
AHIC announces next set of use cases for cycle two of development

2004 | 2005 | 2006 | 2007

Why is this Important?

Health IT standards impacts:

- Policy decision makers
- Investment planning decisions
- Health IT implementations
- Health IT system architects
- Health IT developers

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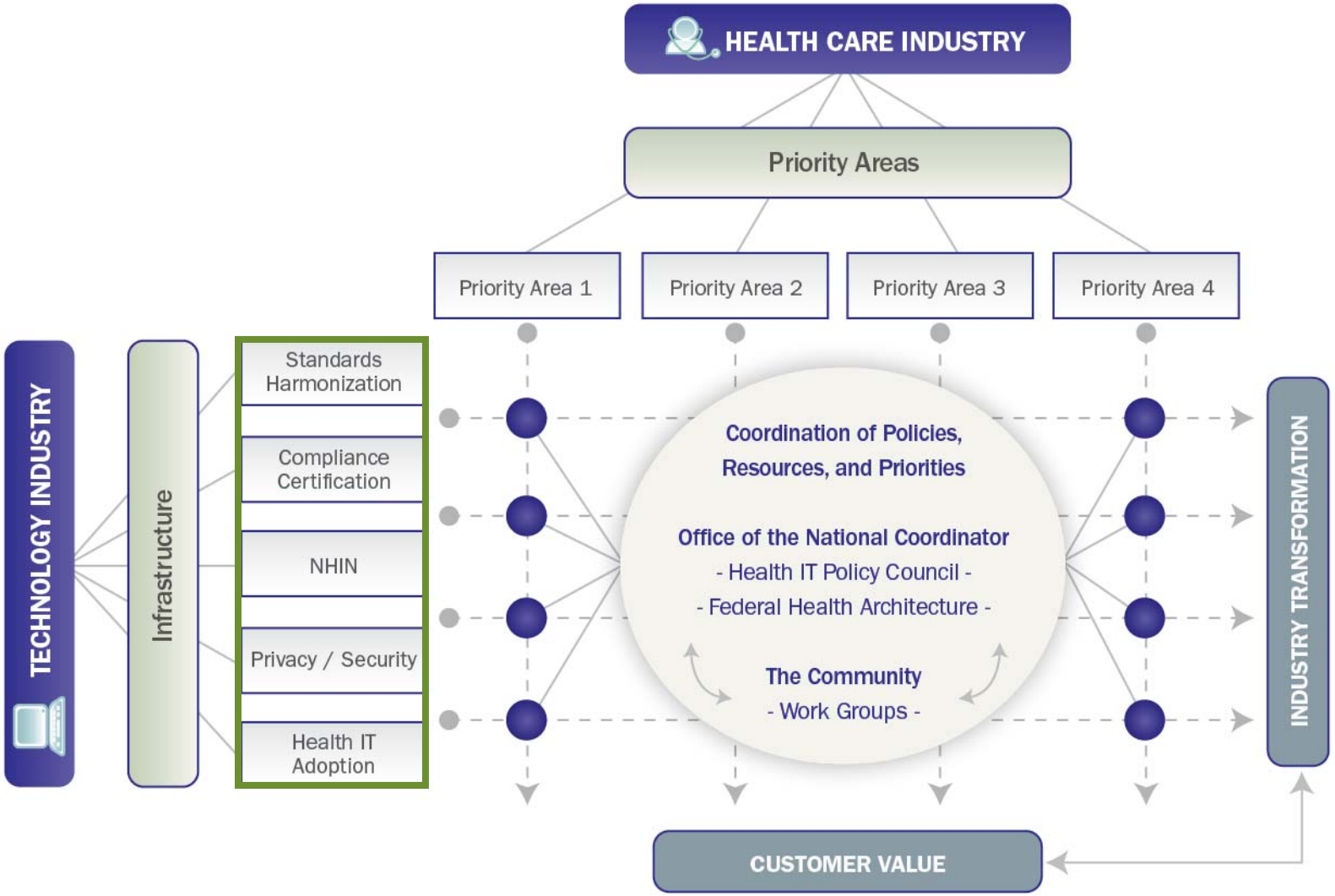
The Problem

"..to link all health records through an interoperable system that protects privacy as it connects patients, providers and payers, resulting in fewer medical mistakes, less hassle, lower costs and better health."

-HHS Secretary Mike Leavitt

Public - Private Collaboration



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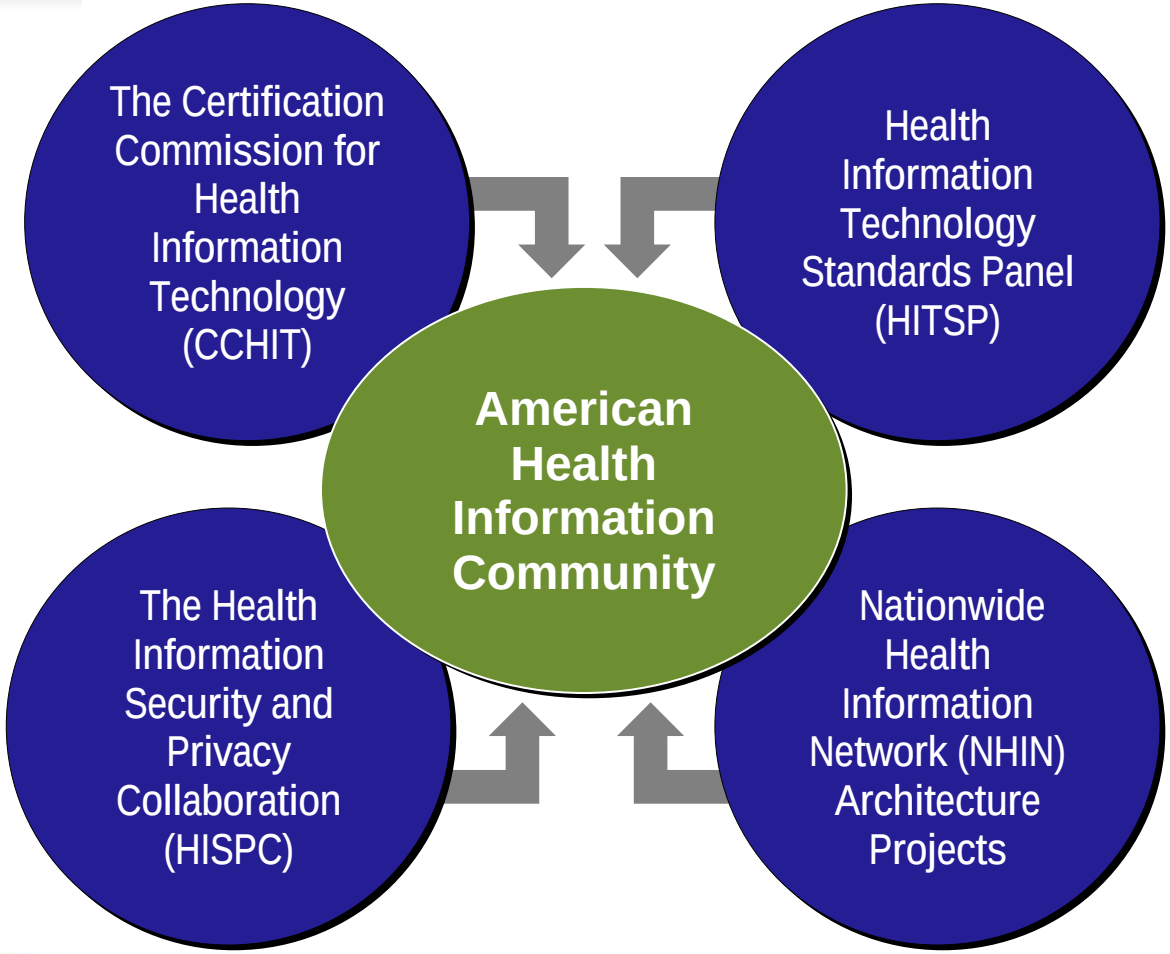
Providing Input to the Community



The Community is a federally-chartered commission that provides input and recommendations to HHS on how to make health records digital and interoperable and ensures that the privacy and security of those records are protected in a market-led way.

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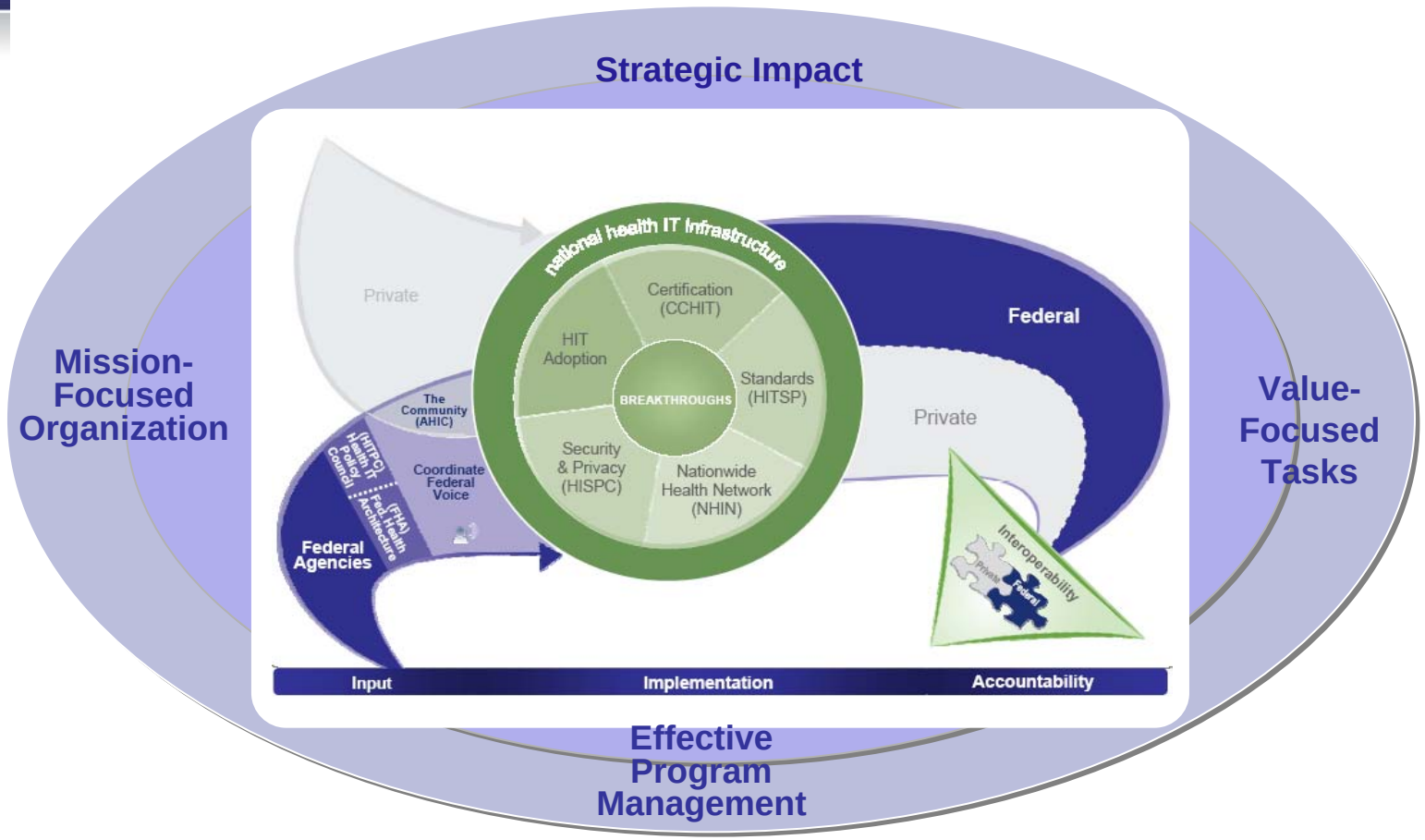
Federal Health Architecture Vision



A federal health IT environment that is interoperable with the private sector and supports the National Plan enabling better care, increased efficiency, and improved population health.

Roadmap

- Vision
- The Standards Lifecycle
- HITSP Standards Harmonization Framework – Cycle One
- HITSP Standards Harmonization Framework – Cycle Two
- Closing Remarks/Next Steps

Definitions

- **Use Case** – a document that describes how organizations interact with the involved system to achieve a goal.

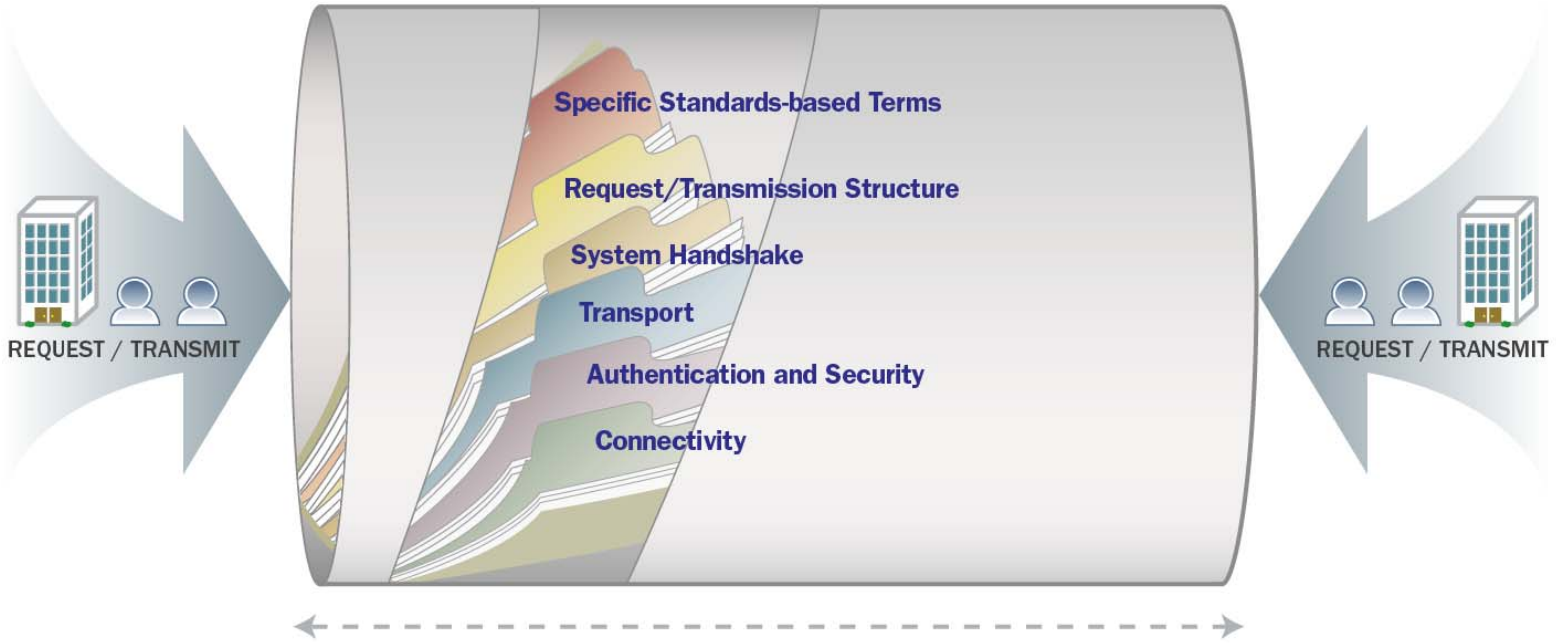
- **HITSP Interoperability Specification** – a document that defines how two or more systems exchange standard data content in a standard manner

Standards Issues

Most standards issues fall into four general categories:

- Gaps
- Overlap
- Adoption
- Specificity

What is an Interoperability Specification?



Health Care Standards

- **Specifications**
- **Implementation Guides**
- **Code Sets**
- **Terminologies**

Standard

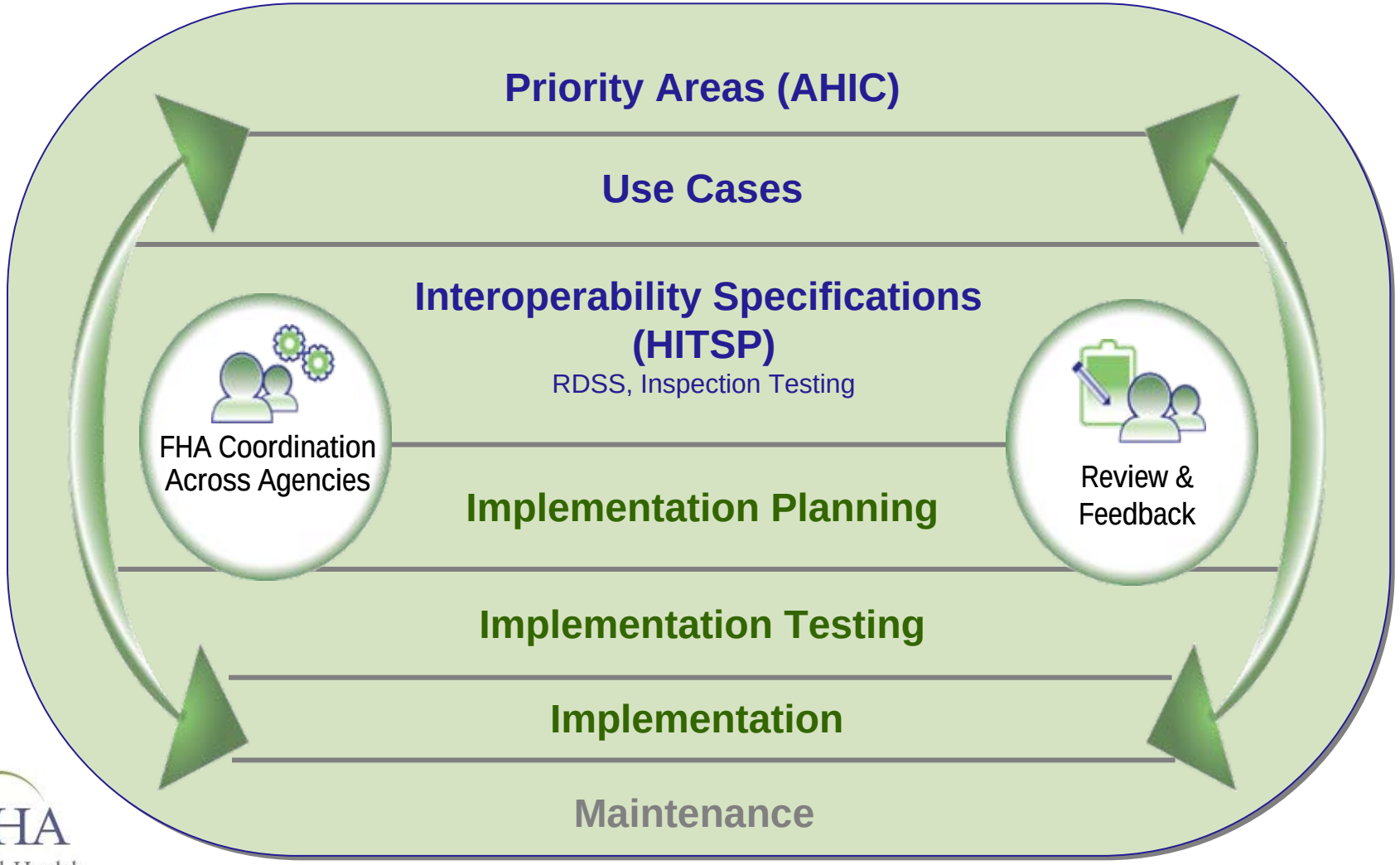
HITSP

Interoperability Spec

Standard

Transaction Package	Send Lab Results
Transaction	Patient Demographics Query
Component	Lab Report Message
Composite Standard	IHE XDS, IHE PIX
Base Standard	SNOMED-CT, LOINC
Business Actor	Clinician, Healthcare Delivery Organization
Technical Actor	Document Repository, Form Manager

National Health IT Agenda Standards Lifecycle



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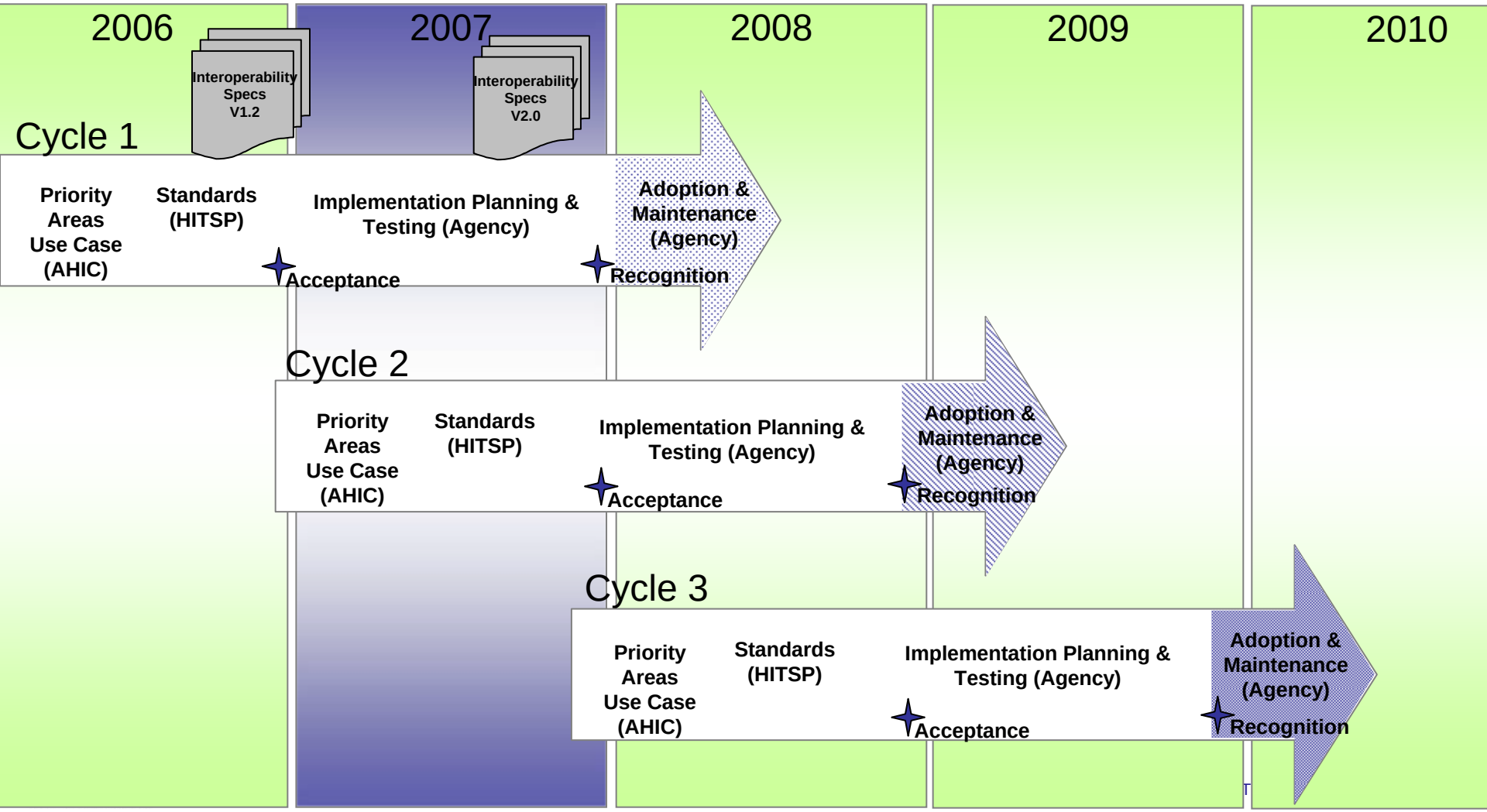
Standards Roadmap



AHIC Priority Areas/ ONC Use Cases

- AHIC formed workgroups that identify priority areas and provide input to ONC
- ONC develops and delivers use cases to HITSP
  - In 2006, 3 Use Cases
  - In 2007, 4 Use Cases
  - In 2008, 6 Use Cases will be delivered

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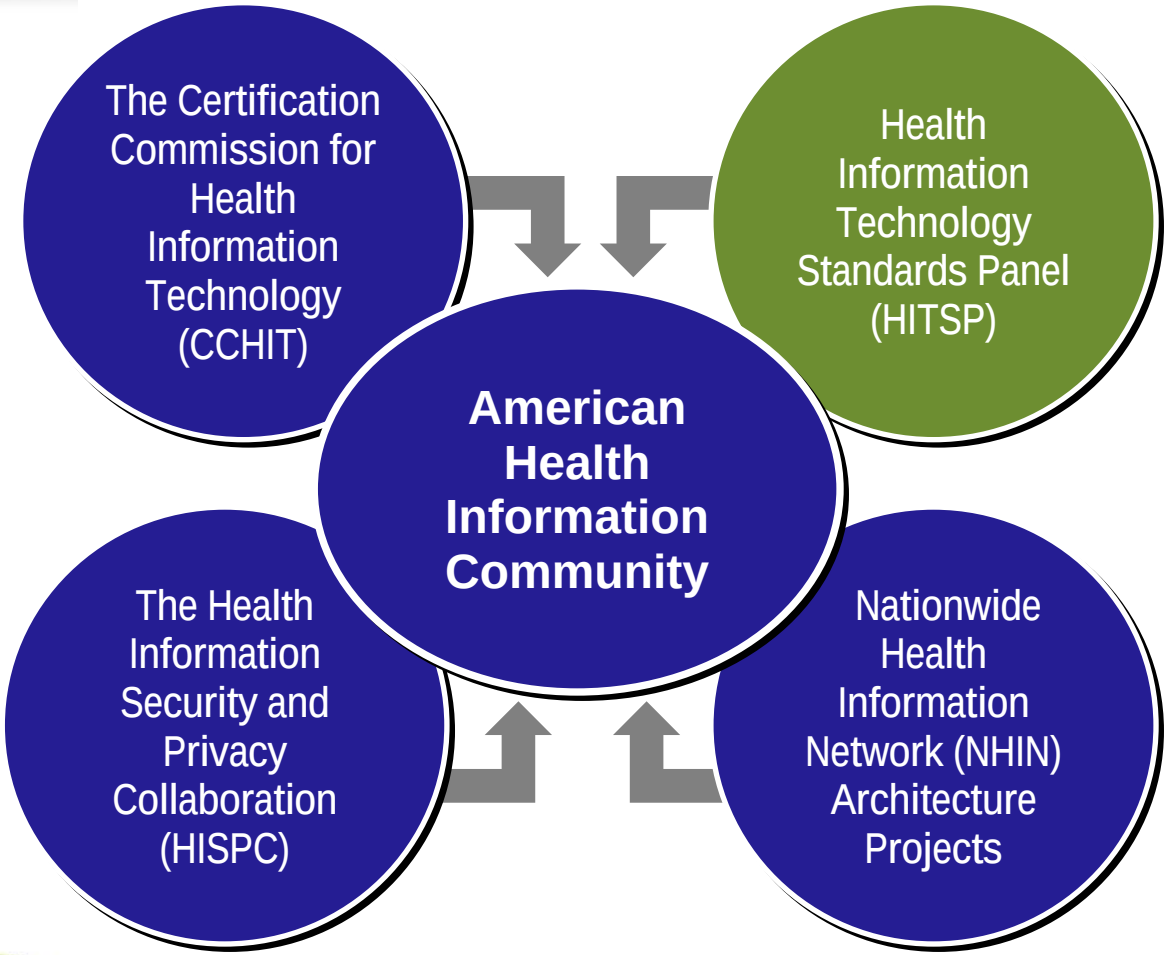
Who is HITSP?



HITSP includes greater than 250 different member organizations and is administered by a Board of Directors

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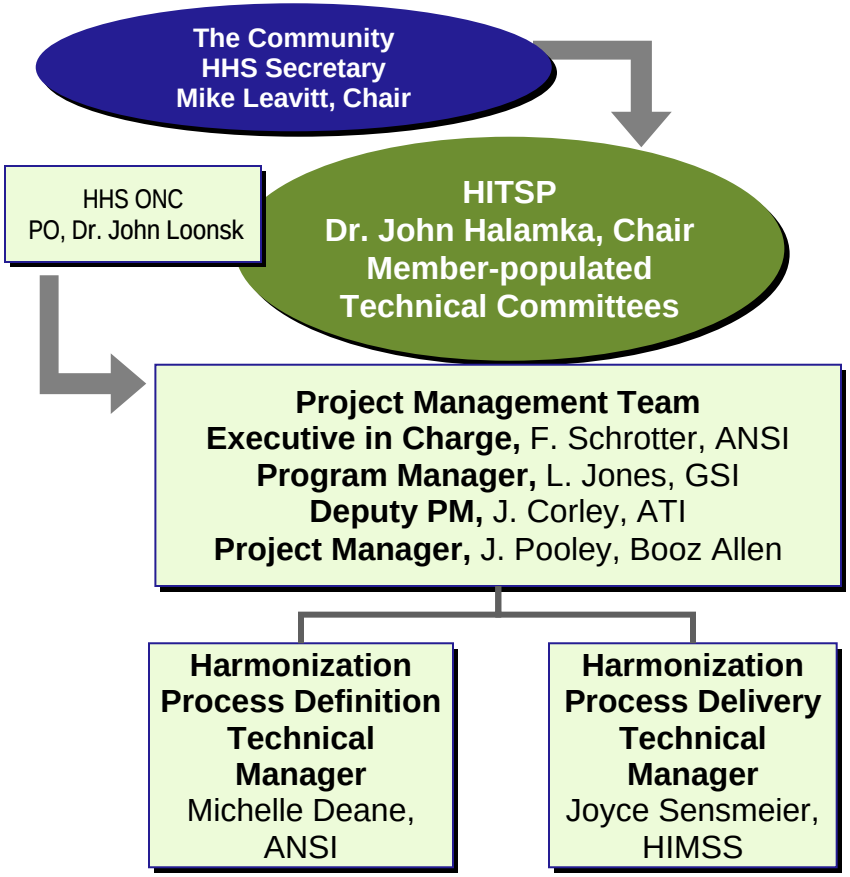
The HITSP Team



Tasks include:

1. Develop comprehensive Work Plan
2. Conduct a project start-up meeting
3. Deliver recommended use cases
4. Participate in related meetings and activities, including AHIC meetings
5. Conduct a gap analysis
6. **Conduct standards selection, evaluations, and testing**
7. **Define a harmonization approach**
8. **Develop Interoperability Specifications**
9. Develop and evaluate a Business Plan for the self-sustaining processes
10. Submit monthly reports (ongoing)
11. Assist with communications (ongoing)

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AHIC Priority Areas/Use Cases

The Community formed workgroups that focused on four breakthrough areas and delivered three use cases to HITSP

- **Biosurveillance**
- **Consumer Empowerment**
- **Electronic Health Record**
- **Chronic Care**

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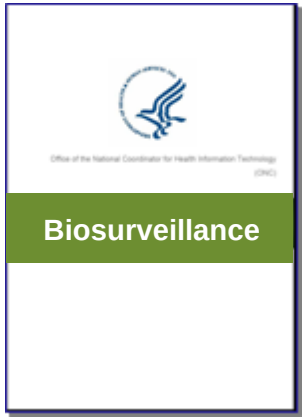
Use Case Scope

Biosurveillance

- Transmits essential ambulatory care and emergency department visit, utilization, and lab results data
- Occurs between electronically enabled health care delivery and public health systems with less than one day lag time.



Use Case Scope

Consumer Empowerment

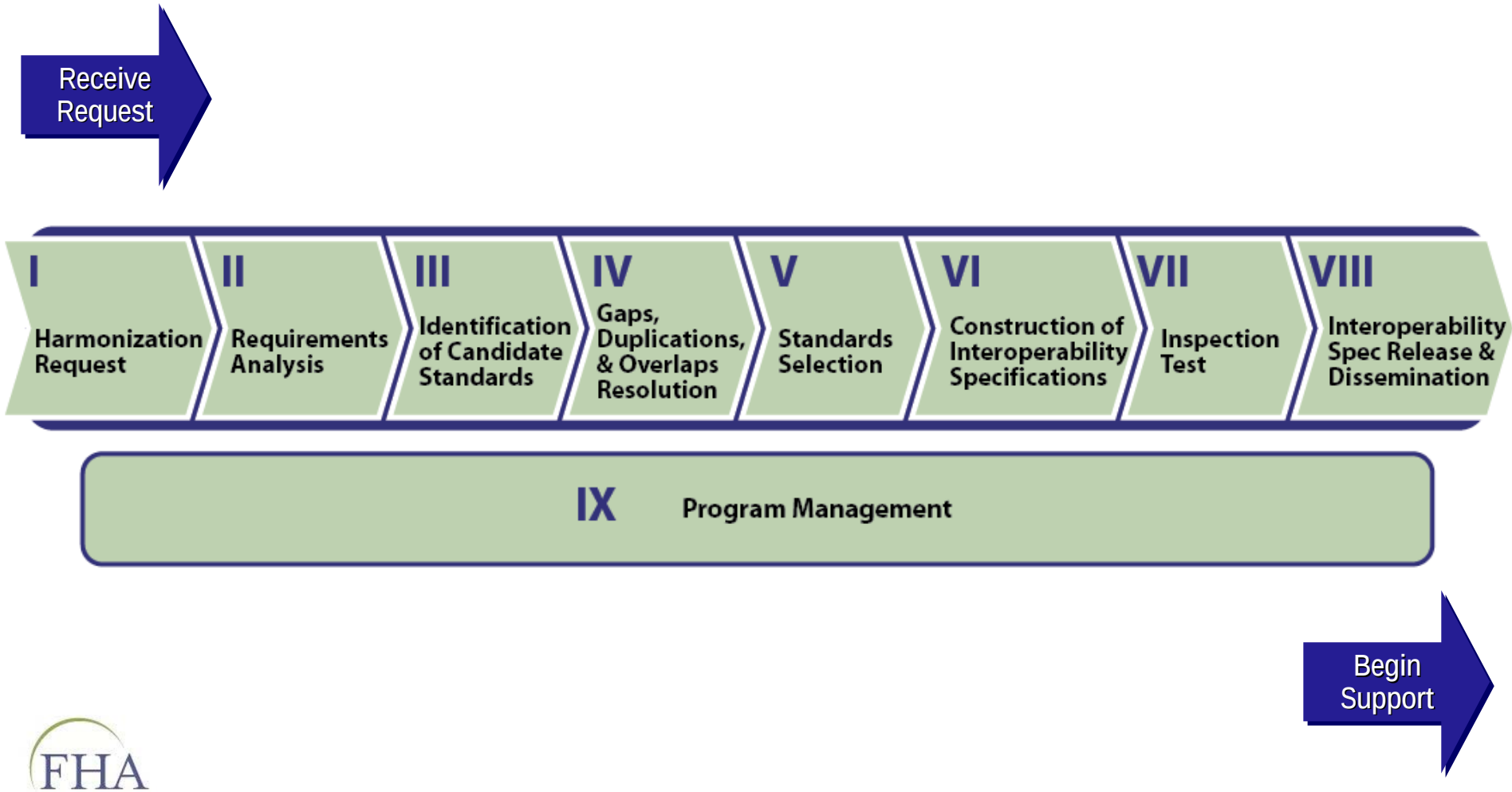
- Deploys a pre-populated, consumer-directed and secure electronic registration summary
- Includes registration data and medication history

Use Case Scope

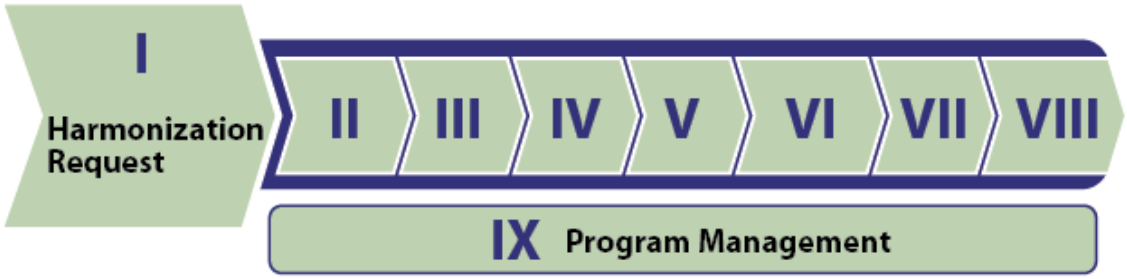
Electronic Health Record

- Allows ordering and non-ordering clinicians electronic access to
  lab results
- Allows authorized clinicians access to historical or other lab results for clinical care

The HITSP Harmonization Process



The HITSP Harmonization Process



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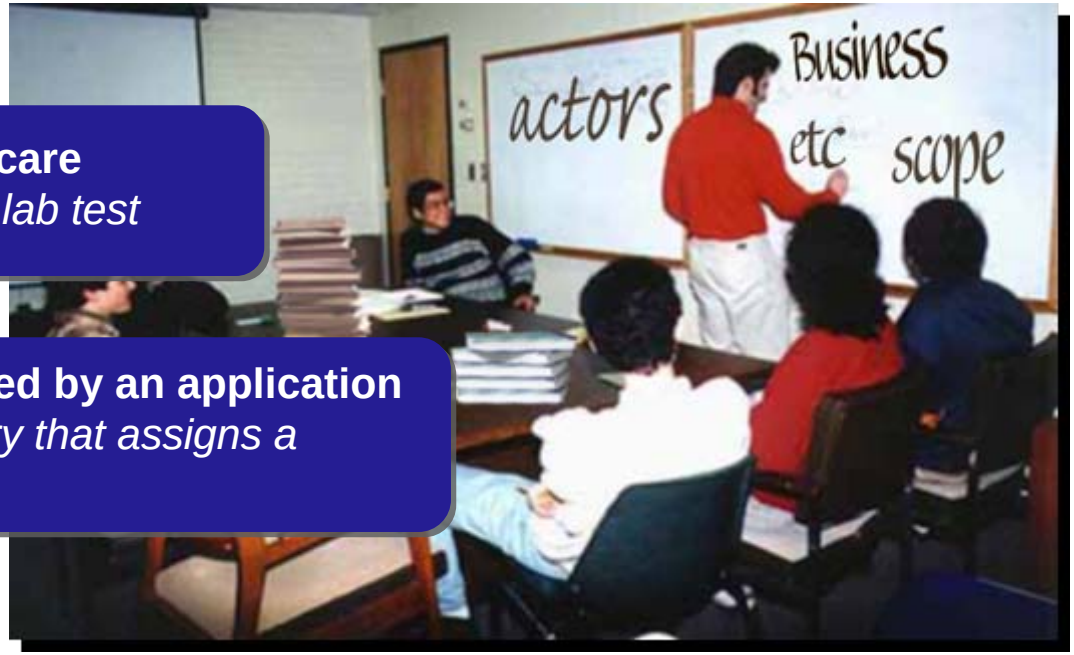
The HITSP Harmonization Process

Business Actor = Provider of care
Example: physician ordering lab test

Technical Actor = role assumed by an application
Example: document repository that assigns a uniform resource identifier



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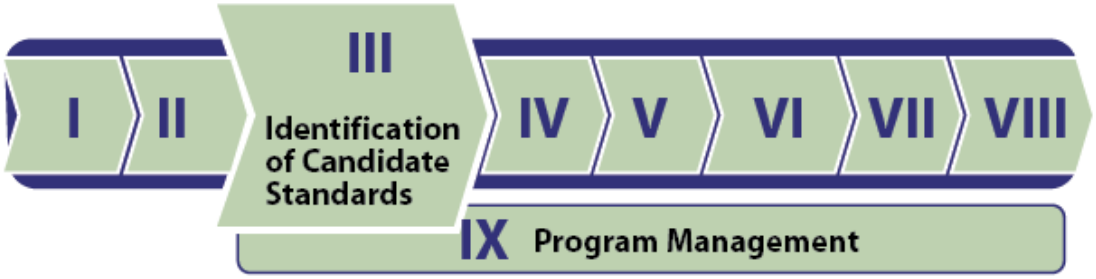
The HITSP Harmonization Process



A standard specifies a well-defined approach that supports a business process and:

- ✓ is ***agreed upon*** by a group of experts
- ✓ is publicly ***vetted***
- ✓ provides rules, ***guidelines,*** or characteristics
- ✓ helps to ensure that materials, products, processes, and services are ***fit for their intended purpose***
- ✓ is ***available*** in an accessible format
- ✓ is subject to an ongoing ***review and revision process***

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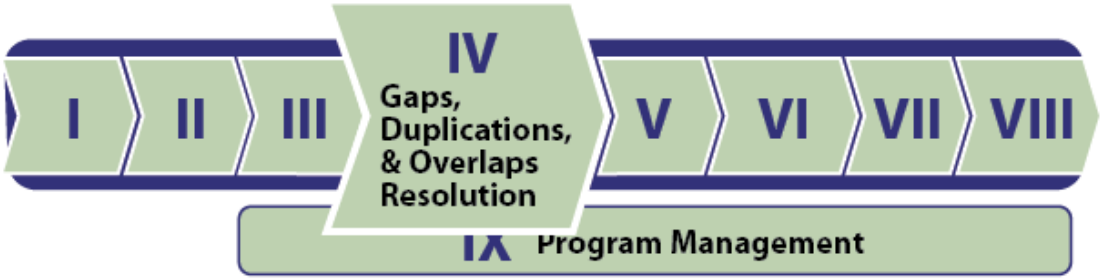
The HITSP Harmonization Process



Harmonization is required when a proliferation of standards prevents progress rather than enables it.

The HITSP Harmonization Process

HL7®

LOINC®

NCPDP

SNOMED CT®

IEEE™

DICOM®

RxNORM

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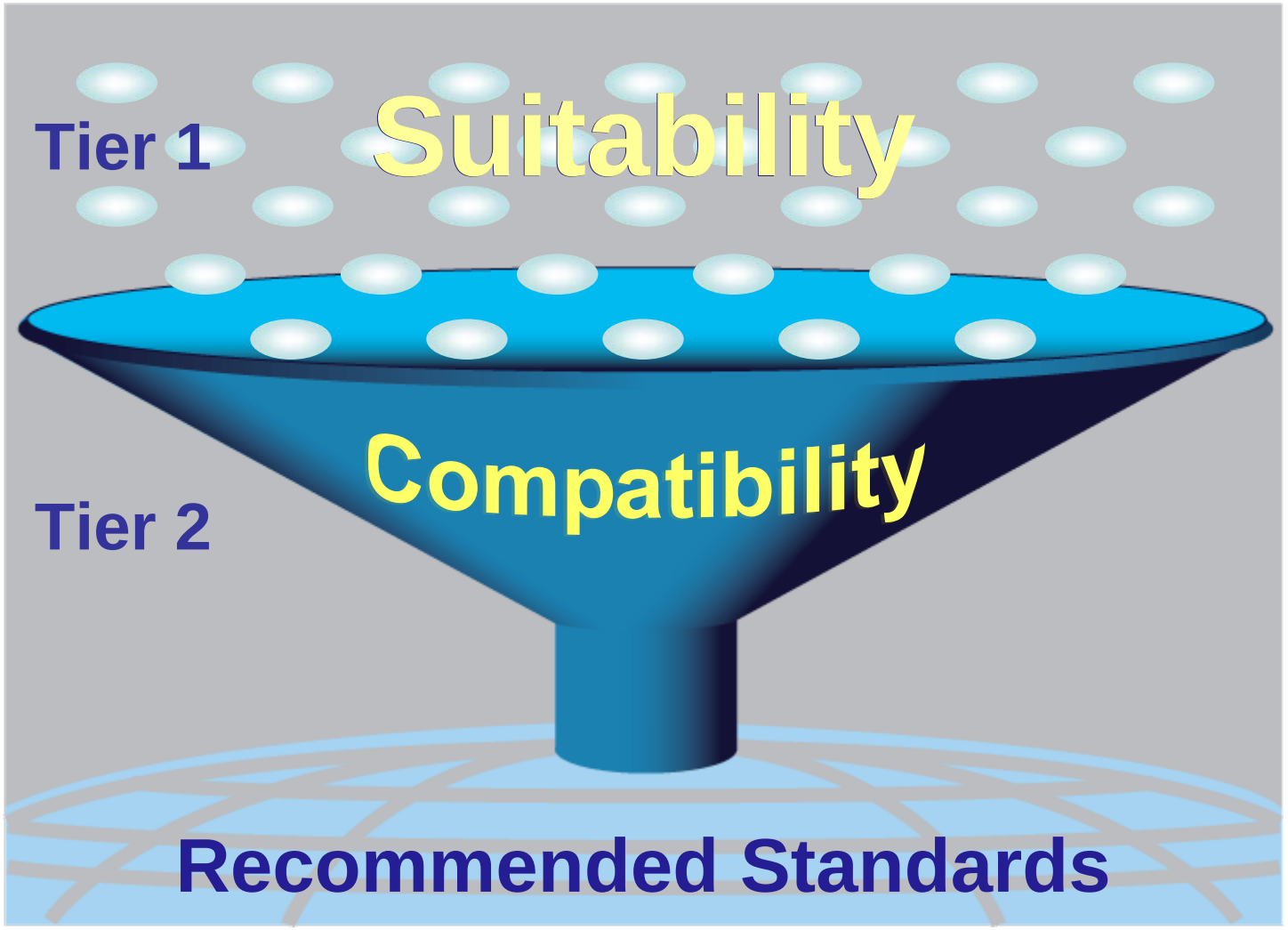
Standards Readiness Criteria



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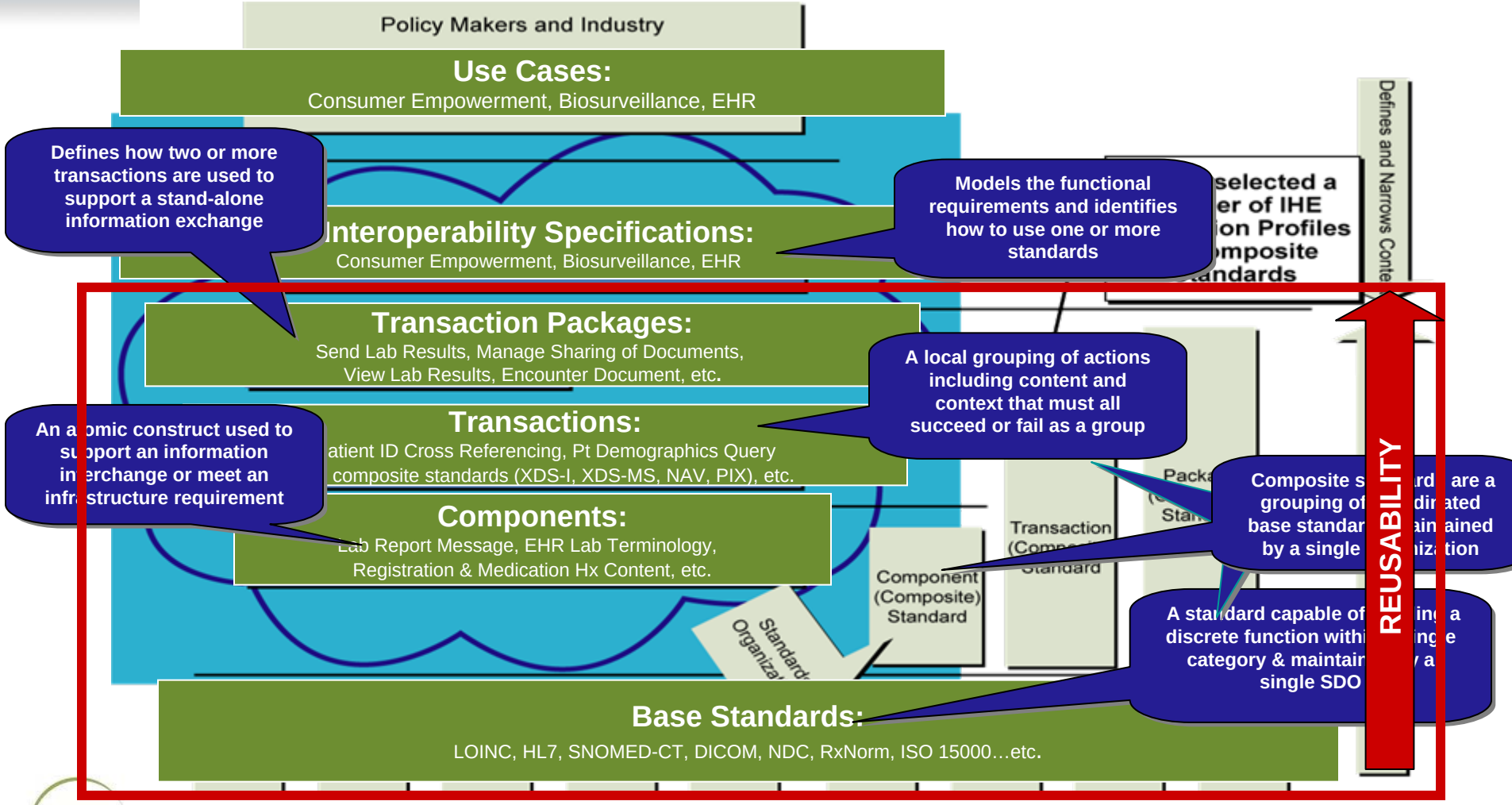
The HITSP Harmonization Process

Constructs:

- Form interoperability specification
- Are built using the HITSP Harmonization Framework

HITSP Framework



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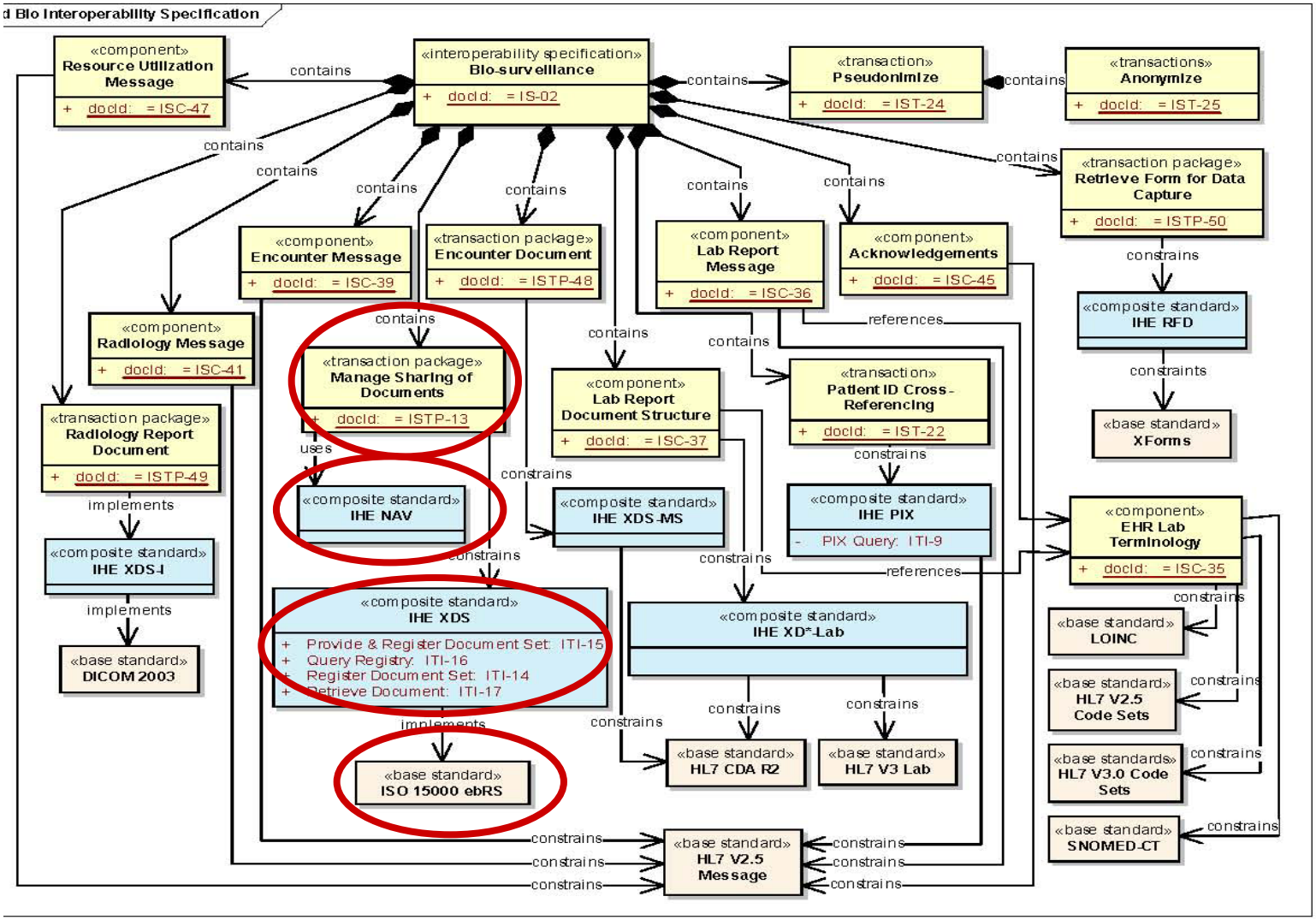
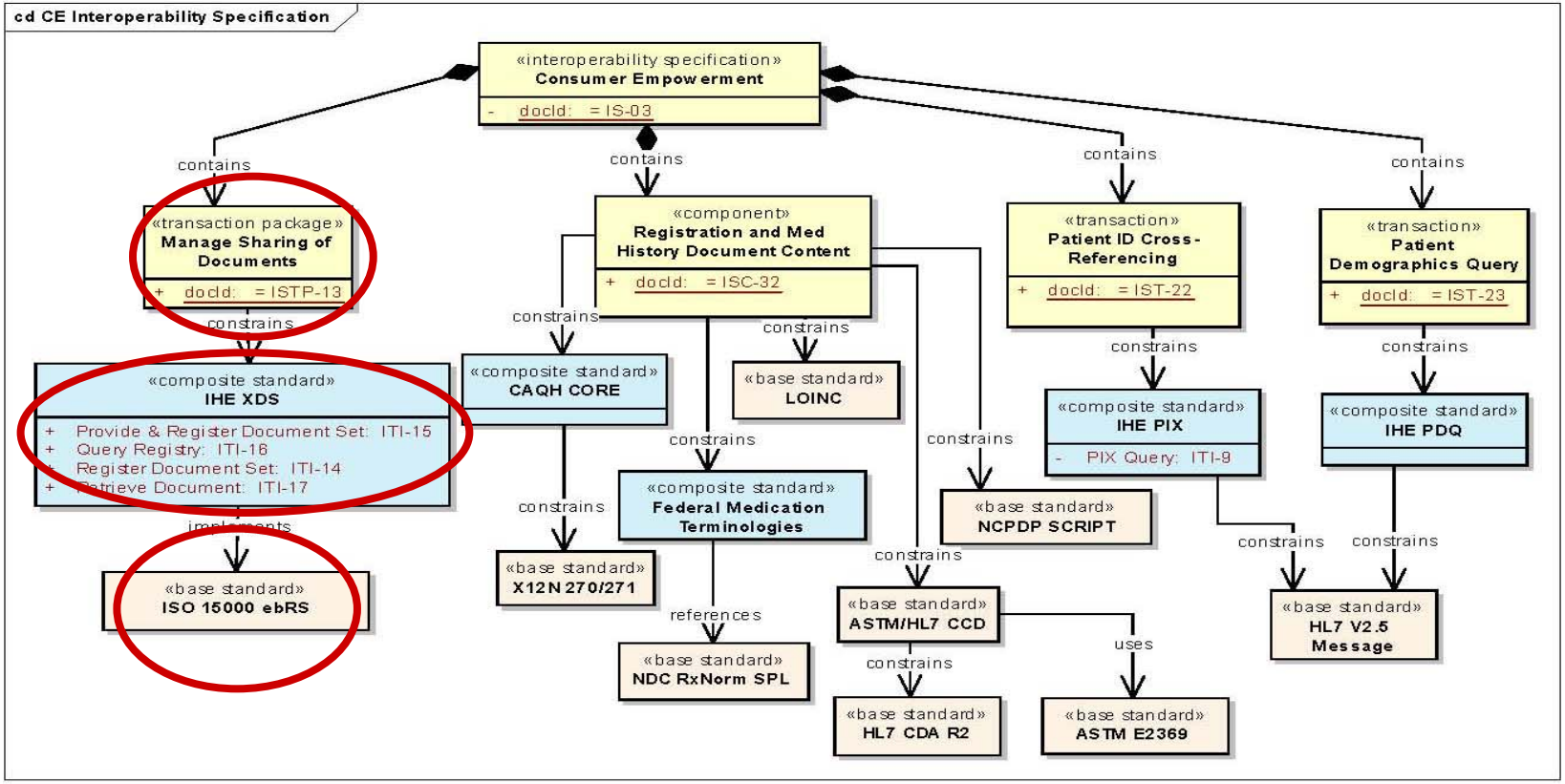
Reusability

A primary goal of HITSP is to develop reusable constructs

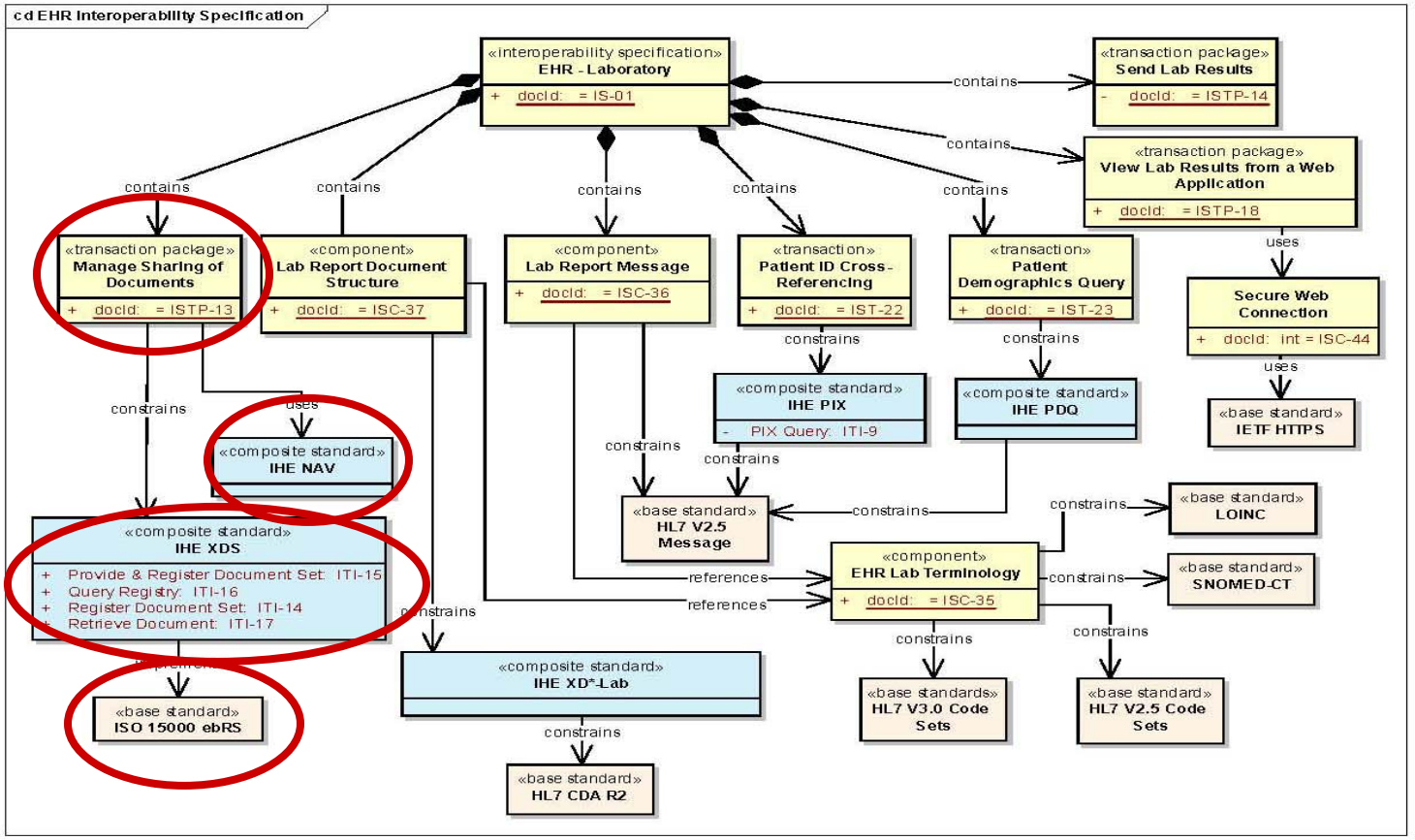
Biosurveillance



Consumer Empowerment

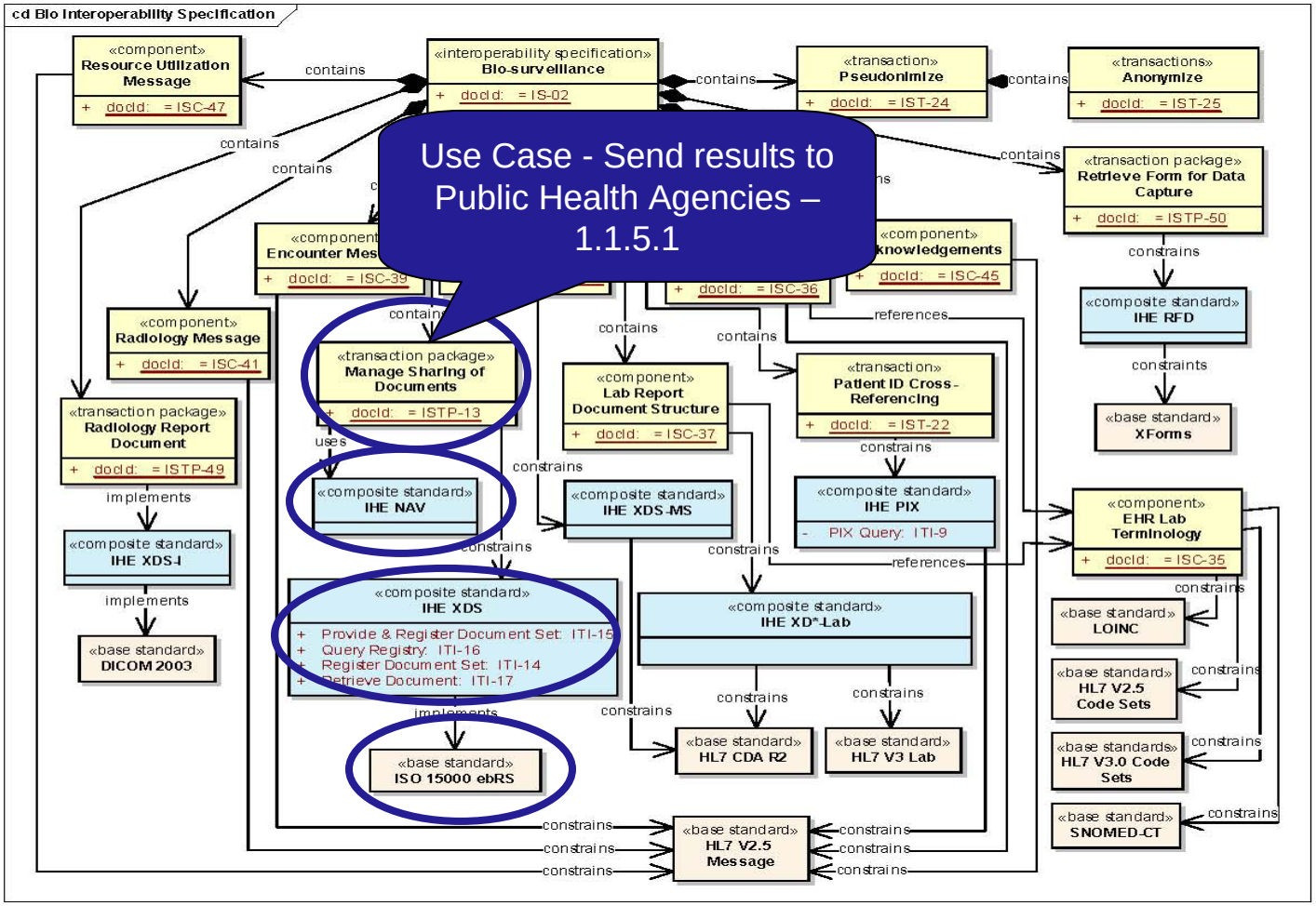


Electronic Health Record



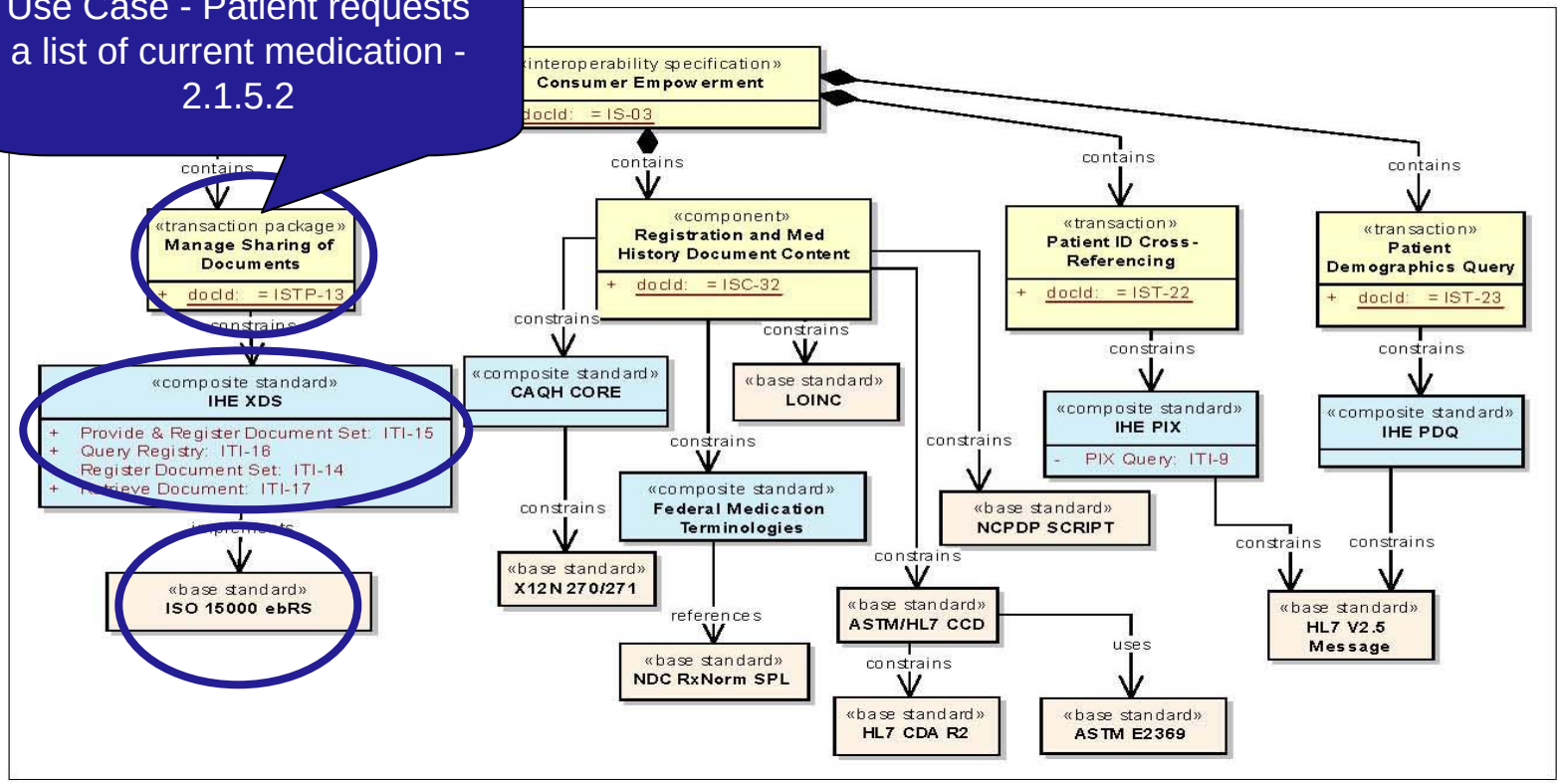
Applying Reusability to the Use Cases

Biosurveillance



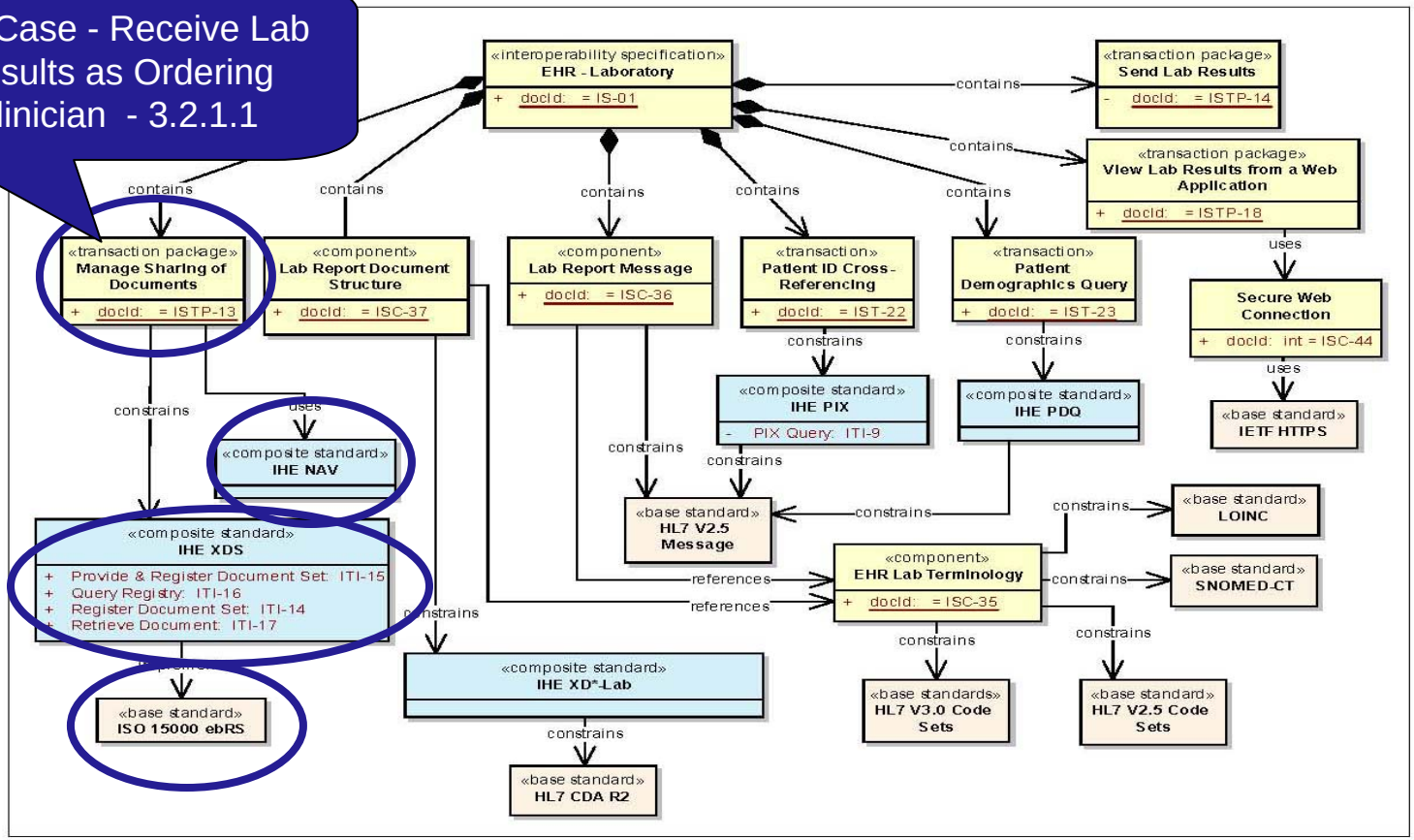
Consumer Empowerment

Use Case - Patient requests a list of current medication - 2.1.5.2



Electronic Health Record

Use Case - Receive Lab Results as Ordering Clinician - 3.2.1.1



The HITSP Harmonization Process

The purpose of the inspection test is to ensure that Interoperability Specifications meet the following objectives:

✓Conforms to Style and Editorial Guidelines	➢ Ensure the integrity of document pieces – that all the cascading documents are present ➢ Validate grammar, spelling, and consistency of terminology ➢ Validate that it follows the style guide for text and graphics
✓Contains Accurate References and Data	➢ Validate that the references to other documents and data sources are valid and that data in tables are accurate
✓Meets Use Case Requirements	➢ Validate that the IS, when implemented, will meet the specific requirements as defined in the use case
✓Is Technically Valid	➢ Check the specification to confirm the presence of: ▪ Clarity ▪ Specificity ▪ Completeness ▪ Internal Consistency ▪ Testability ▪ Ability to implement

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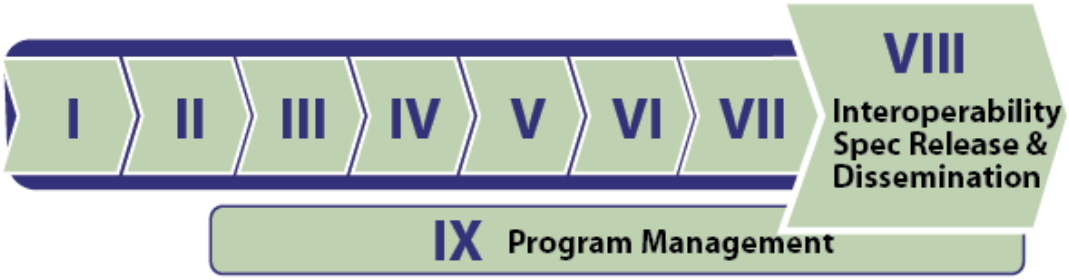
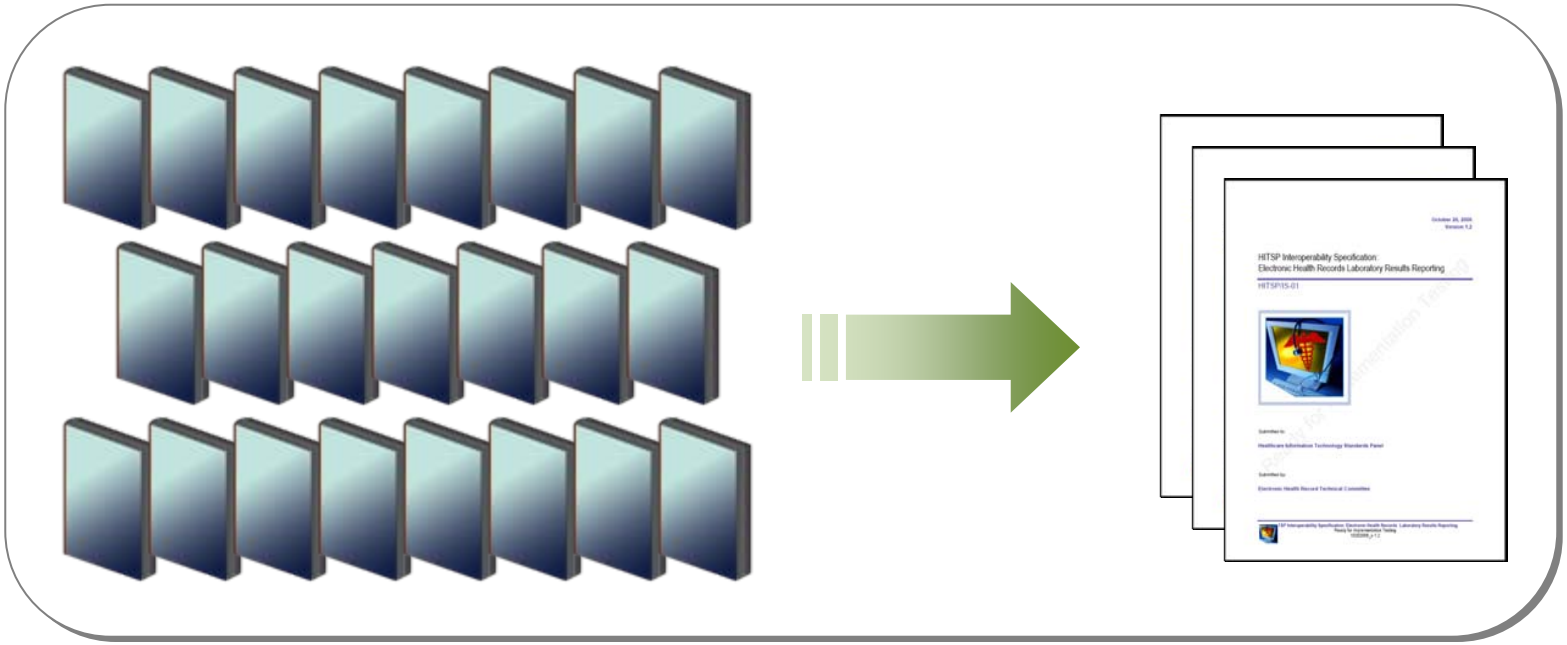
The HITSP Harmonization Process



HITSP Accomplishments to Date

- Thousands of volunteer hours expended
- Three Interoperability Specifications
- Numerous constructs referenced by multiple interoperability specifications



Current HITSP Document Inventory

			Used By						
Type	**ID**	**Document Name**	**IS01**	**IS02**	**IS03**	**IS04**	**IS05**	**IS06**	**TN900**
IS	01	Electronic Health Records Laboratory Results Reporting	X						
IS	02	Biosurveillance		X					
IS	03	Consumer Empowerment			X				
IS	04	Emergency Responder EHR				X			
IS	05	Consumer Sharing on Portable Media					X		
IS	06	Quality						X	
TP	13	Manage Sharing of Documents	X	X	X	X	X	X	X
TP	14	Send Lab Result Message	X						
T	15	Collect and Communicate Audit Trail	X	X	X	X	X	X	X
T	16	Consistent Time	X	X	X	X	X	X	X
T	17	Secured Communication Channel	X	X	X	X	X	X	X
T	18	View Laboratory Results from a Web Application	X						
C	19	Entity Identity Assertion	X	X	X	X	X	X	X
TP	20	Access Control	X	X	X	X	X	X	X
TP	21	Query for Existing Data						X	
TP	22	Patient ID Cross-Referencing	X	X	X	X	X	X	
T	23	Patient Demographics Query	X		X	X	X	X	
T	24	Biosurveillance Pseudonymize		X				X	
C	25	Anonymize		X				X	
C	26	Non-Repudiation	X	X	X	X	X	X	X
C	27	PHR Information to On-Site ER Care Providers Document				X			
C	28	Emergency Care Summary Document				X			
T	29	Notification of Document Availability	X	X					
TP	30	Manage Consent Directives	X	X	X	X		X	X
TP	31	Cross Enterprise Document Reliable Interchange						X	
C	32	Reg and Med History Document			X	X	X	X	
T	33	Media-based Interchange					X		
C	34	Patient Level Quality Data Message						X	
C	35	EHR Lab Terminology	X	X					
C	36	Lab Result Message	X	X					
C	37	Lab Report Document	X	X					
C	38	Patient Level Quality Data Document						X	
C	39	Encounter Message		X					
C	41	Radiology Results Message		X					
C	44	Secure Web Connection	X						
C	45	Acknowledgements	X	X					
C	47	Resource Utilization Message		X					
C	48	Encounter Document		X					
TP	49	Sharing Radiology Results		X					
TP	50	Retrieve Form for Data Capture		X					
TN	900	Security and Privacy Infrastructure Support							X

Legend

IS: Interoperability Specification

TP: Transaction Package

T: Transaction

C: Component

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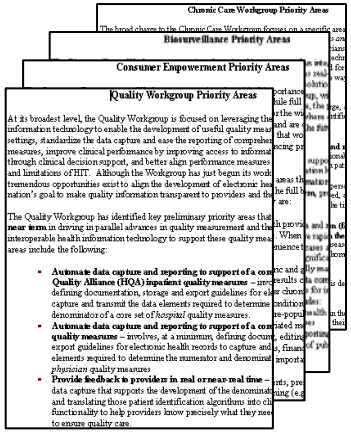
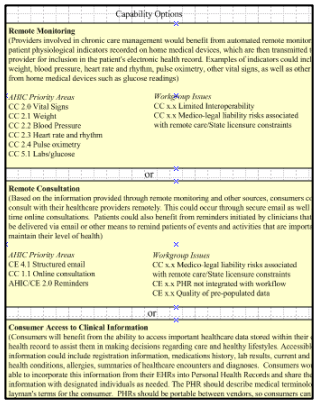
AHIC Priorities and Analysis Activities To-date

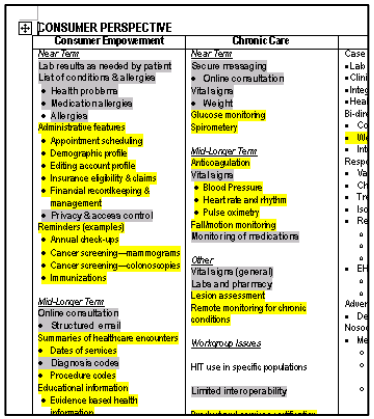


AHIC workgroup recommendations for priorities and issues

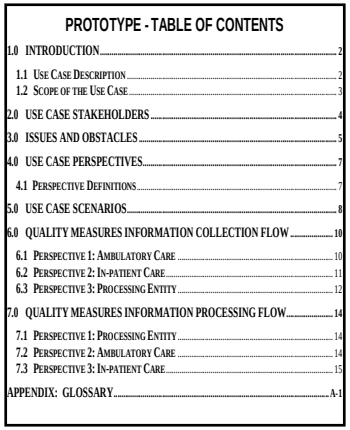


Use case options for AHIC prioritization

AHIC Priorities



Work group areas were clustered for cross-workgroup coordination and synergy



Prototype Use Cases

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AHIC Priorities/ONC Use Cases

Consumer

Consumer Empowerment

Existing Use Cases

- Registration and Medication History
- Consumer Access to Clinical Information

2008 Use Cases

- *Remote consultation*
- *Remote monitoring*

Provider

Care Delivery

Existing Use Cases

- EHR – Labs
- Emergency Responder EHR
- Medication Management

2008 Use Case

- *Transfer of care*
- *Personalized healthcare*

Population

Population Health

Existing Use Cases

- Biosurveillance
- Quality

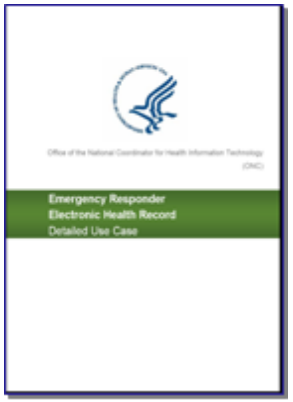
2008 Use Case

- *Response management*
- *Public health case reporting*

2009 and Beyond

Numerous priority areas being considered

2007 - Use Case Scope – Emergency Responder Electronic Health Record



Focuses on the deployment of standardized, widely available and secure solutions for accessing current and historical health data by those involved in the response to an emergency situation

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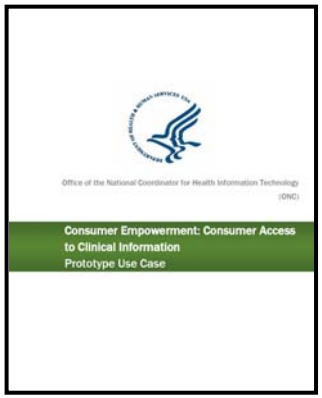
2007 Use Case Scope – Consumer Access to Clinical Information



Consumers would benefit from the ability to access important healthcare data stored within their EHRs to assist them in making decisions regarding care and healthy lifestyles.

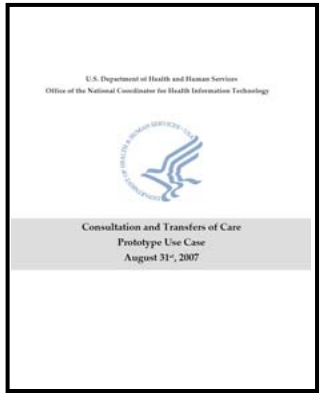
2007 Use Case Scope – Medication Management

Both consumers and providers would benefit from electronic prescribing of medications, which would include transmittal of prescriptions to pharmacies by clinicians.

2007 Use Case Scope – Quality

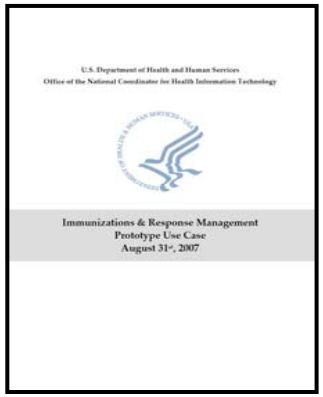
Providers would benefit from the collection of healthcare quality data, such as Hospital Quality Alliance (HQA) quality indicators for inpatient care and Ambulatory Quality Alliance (AQA) quality indicators for ambulatory care, particularly if this information can be integrated into EHR systems within the provider's workflows.

2008 Use Case Scope – Consultations and Transfers of Care



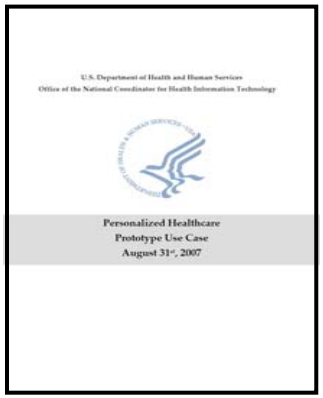
The focus is on the exchange of information between clinicians, particularly between requesting clinicians and consulting clinicians, to support consultations such as specialty services and second opinions.

2008 Use Case Scope – Immunization and Response Management



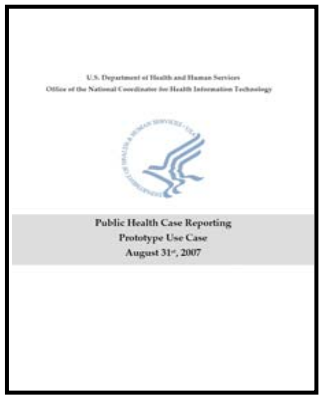
Focuses on the ability to communicate a subset of relevant information about needs for medication and prophylaxis resources, about resource availability, about their administration and about the status of treated and immunized populations.

2008 Use Case Scope – Personalized Healthcare



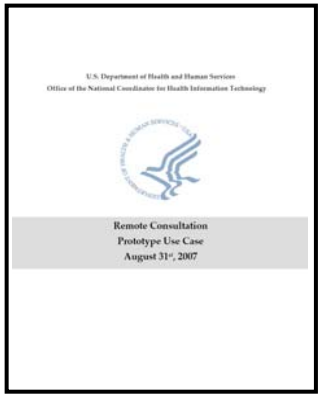
Focuses on the exchange of genomic/genetic test information, family health history and the use of analytical tools in the electronic health record (EHR) to support clinical decision-making.

2008 Use Case Scope – Public Health Case Reporting



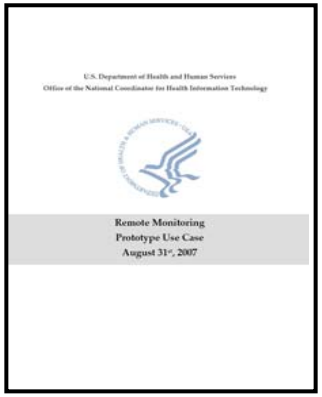
Focuses on leveraging electronic clinical information to address population health data requirements.

2008 Use Case Scope – Remote Consultation



Patients consult with their healthcare clinicians remotely using common computer technologies readily available in home and other settings.

2008 Use Case Scope – Remote Monitoring



Focuses on the exchange of physiological and other measurements from remote monitoring devices in three candidate workflows:

- **Measurement and Communication**
- **Monitoring and Coordination**
- **Clinical Management**

Roadmap

- Vision
- The Standards Lifecycle
- HITSP Standards Harmonization Framework – Cycle One
- HITSP Standards Harmonization Framework – Cycle Two
- Closing Remarks/Next Steps

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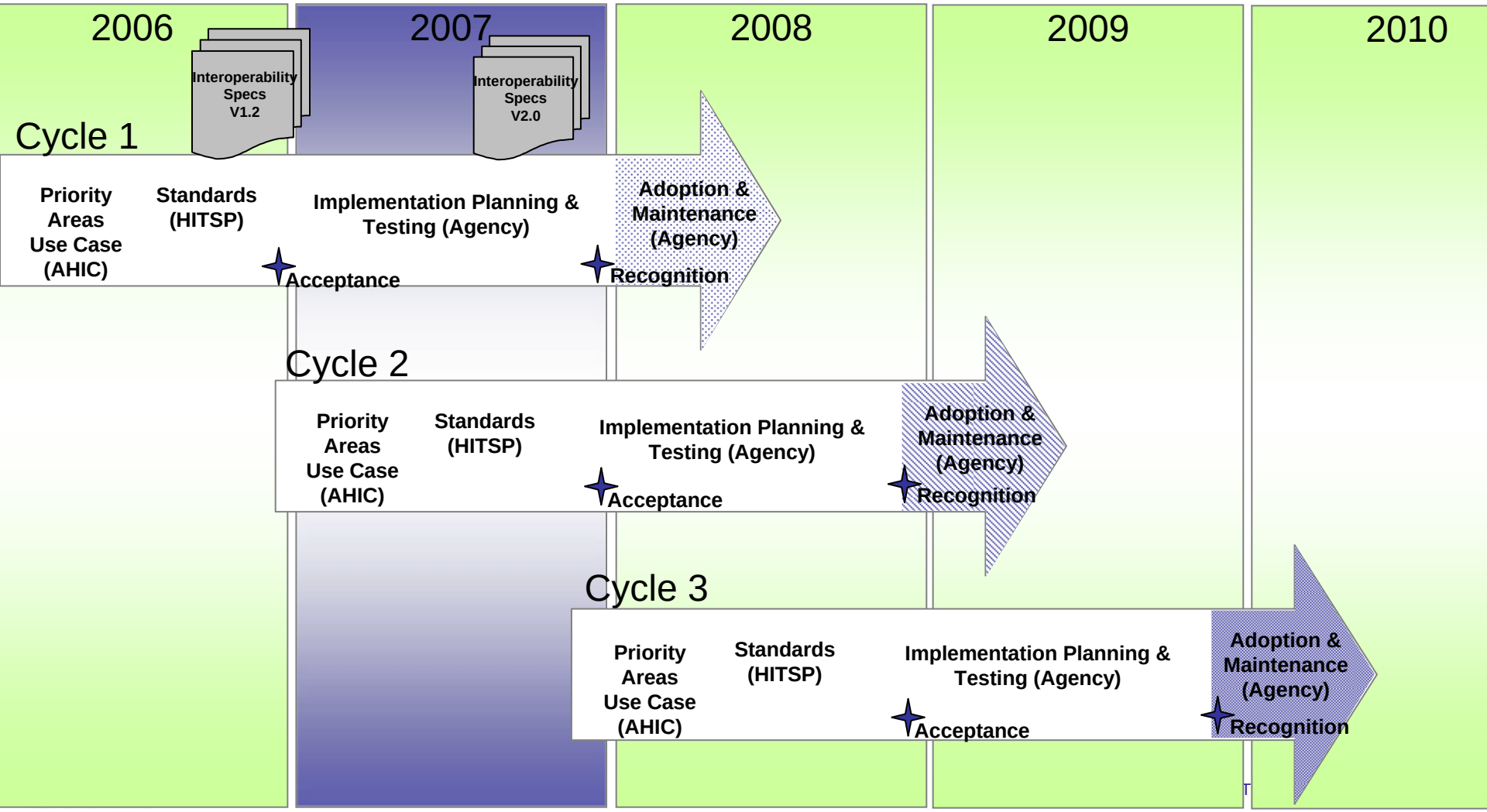
Standards Roadmap



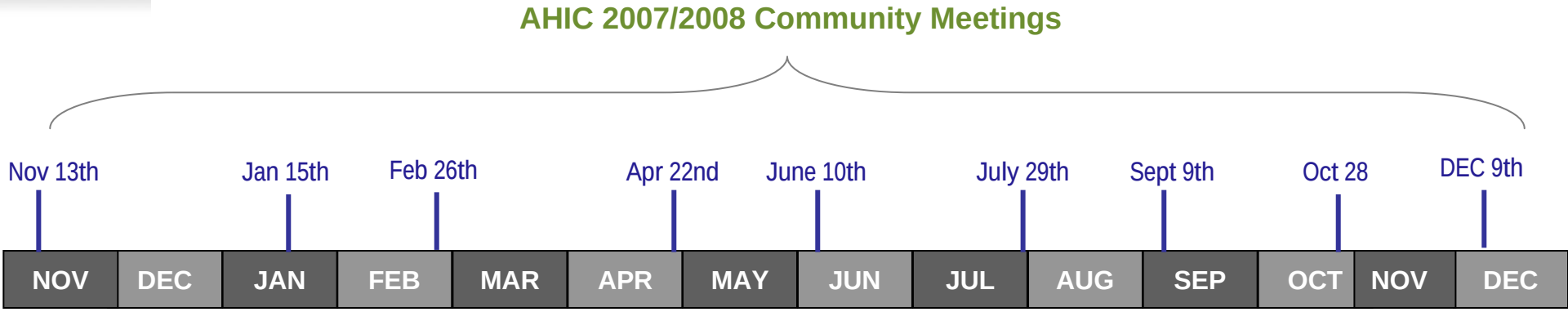
How to Participate

AHIC

HITSP

TIGER

How to Participate – AHIC



Monthly meetings of AHIC Workgroups

- Consumer Empowerment (CE)
- Chronic Care (CC)
- Electronic Health Records (EHR)
- Population Health and Clinical Care Connections (PH/CCC)
  Biosurveillance Data Steering Group *(subcommittee)*
- Confidentiality, Privacy & Security (CPS)
- Quality (QU)
- Personalized Healthcare Workgroup (PHC)

www.hhs.gov/healthit/ahic.html

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How to Participate – HITSP

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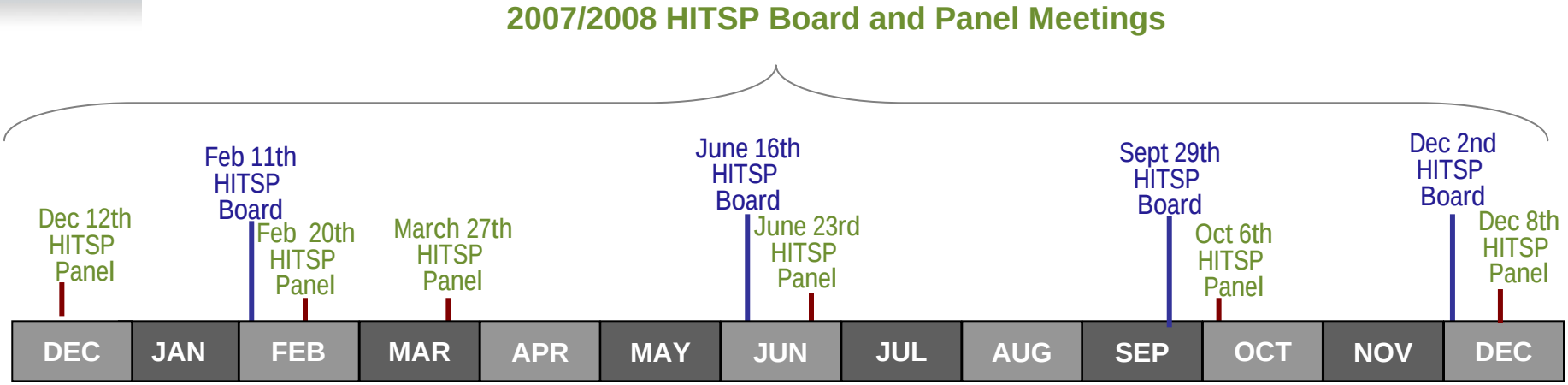
How to Participate – HITSP



HITSP Board Meetings

- Four meetings annually
- Open to the public
- Webcast/Teleconference capability

HITSP Panel Meetings

- Six meetings annually
- Updates from Technical Committee Chairs
- Open to the public

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How to Participate – HITSP

HITSP Technical Committees

1. Care Delivery
2. Consumer Empowerment
3. Population Health
4. Cross-Technical Committee Coordination
5. Security and Privacy
6. Emergency Responder – EHR Coordination

Qualifications for Participation

- Membership in HITSP
- Healthcare provider, clinician, informaticists
- Healthcare information technology vendor/supplier
- Healthcare expertise in information technology, standards development, or implementation

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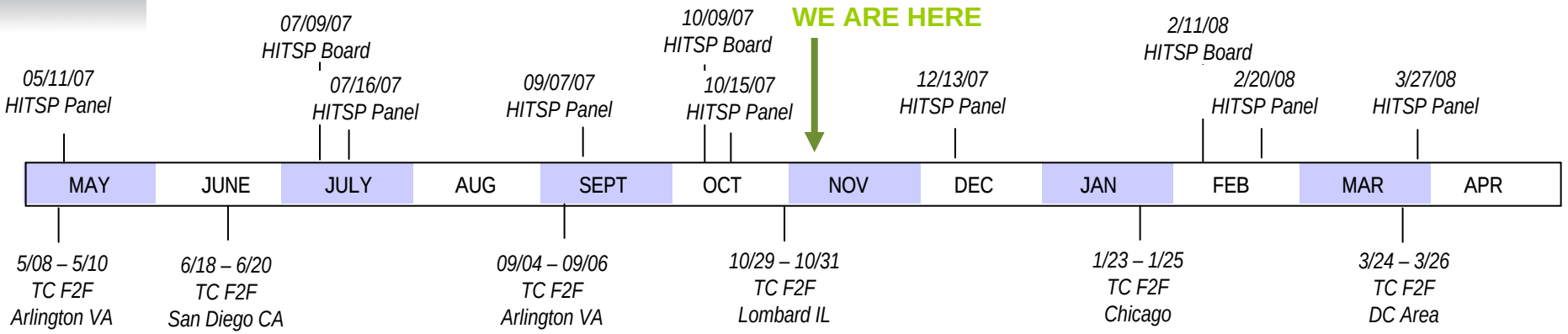
www.hitsp.org

HITSP 2007/2008 Timeline



Weekly Meetings of Technical Committees

- Consumer Empowerment
- Population Health
- Care Delivery
- Emergency Responder – EHR Coordination
- Cross-Technical Committee Coordination
- Security and Privacy Workgroup Coordination

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Standards Harmonization Work Plan Tasks

Process

I Harmonization Request
II Requirements Analysis
III Identification of Candidate Standards
IV Gaps, Duplications, & Overlaps Resolution
V Standards Selection
VI Construction of Interoperability Specifications
VII Inspection Test
VIII Interoperability Spec Release & Dissemination

Tasks

Requirements, Standards Selection, and Design
Public Review and Input
Interoperability Specification Construct Development
Inspection Test and Public Comment
Comment Resolution and Panel Approval
Implementation Support and Testing

3 weeks
4 weeks

Documentation

Consolidated comments

Consolidated comments

IS Docs V1.0

Summary of comment resolution

Annual updates as required

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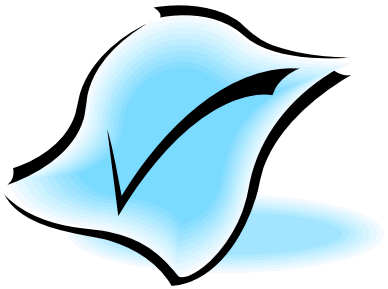
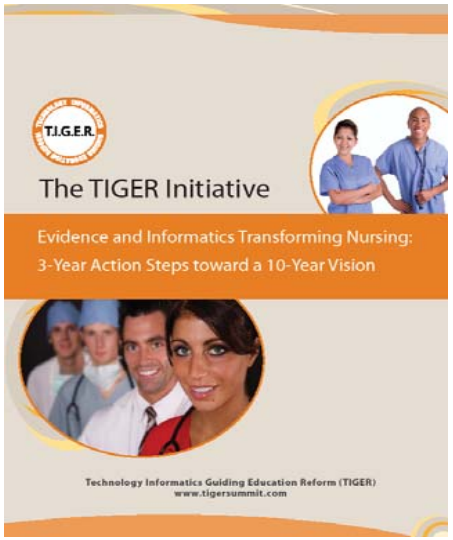
Progress is occurring

- Numerous organizations involved in executing the President's vision
- HITSP process is crucial component
- Standards from cycle 1 will be "recognized" by The Secretary of HHS in December 2007
- All Federal health care programs must comply with HITSP standards in January 2008
- You can have an impact on the National Health IT Agenda through participation in numerous open, public-private organizations



How to Participate – TIGER

- The focus of the TIGER Initiative is to better prepare our nursing workforce (all practicing nurses and nursing students) to use technology and informatics to improve the delivery of patient care.
- We believe that ***necessary skills*** for nurses' portfolio in 2007 includes computer literacy and information literacy.
- TIGER has been a grass-roots effort to engage with all stakeholders that are committed to a common "vision" of ideal EHR-enabled nursing practice. Today, more than 70 diverse organizations have joined this effort.
- Summary Report published at www.tigersummit.com
- Formalize cross-organizational activities/action steps into collaborative TIGER Teams (9 identified)



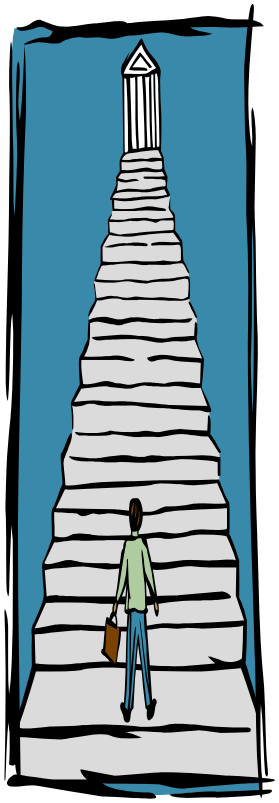
Health IT Standards and Interoperability Collaborative

Action Items:

- Identify the most relevant Health IT standard setting efforts that are important to the TIGER mission.
- Assess whether there is adequate representation/input of the TIGER mission/perspective on said efforts.
- Take action to close gaps that exist.
- Communicate the existence and importance of Health IT standards and initiatives to the broad nursing community.
- Create tutorials on standardizing data elements, implementing electronic health records, using nursing terminology, and using evidence-based practice tools.

Next Steps

1. **Identify smaller work groups to address:**
   - Catalogue the most relevant Health IT standard setting efforts
   - Inventory and analysis of: Publications, Research, Ongoing Projects
   - Identify subject matter experts and constituent targets
2. **Create tutorials on:**
   - Standardizing data elements
   - Implementing electronic health records (adoption, configuration, lessons learned)
   - Using nursing terminology
   - Using evidence-based practice tools / decision support
3. **Awareness Campaigns**
   - Standards
4. **Review work from the nursing and healthcare environments to**
   - Define standards and interoperability
   - Collect standards and interoperability examples within nursing, healthcare, and other industries



Advancing the Agenda for Patient Care

- Understand and embrace these initiatives
- Get involved with Priority and Use Case development
- Respond to public comment opportunities
- Attend educational workshops
- Include Standards and IHE Profiles in your RFP's
- Participate in the HITSP Committees
- Join the TIGER Health IT Standards and Interoperability Collaborative

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Questions?

Thank you!

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Additional References

Executive Order: Incentives for the Use of Health Information Technology and establishing the Position of the National Health Information Technology Coordinator

http://www.whitehouse.gov/news/releases/2004/04/20040427-4.html

Executive Order: Promoting Quality and Efficient Health Care In Federal Government Administered or Sponsored Health Care Programs

http://www.whitehouse.gov/news/releases/2006/08/20060822-2.html

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