



HITSP

Healthcare Information Technology Standards Panel

HITSP General Lab Orders Public Review

Communicate Lab Order Message Capability

Provider Perspective TC | September 29, 2009

HITSP General Lab Orders Requirements and Design Public Comment

- Introduction & Review of Capabilities
- Schedule
- Technical Approach
- Public Comment

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Introduction

- The purpose of this Webinar is to share the new document created in order to meet the General Lab Orders Extension/Gap and publicly review it prior to a one week comment period. This is just the requirements section of the document, the full documents will be released for the traditional 4 week public comment period in early November
- The General Lab Orders work item introduces requirements for the sending and receiving of a set of laboratory order, status and control messages.
- The Communicate Lab Order Message capability was created in order to fulfill the requirements of the ONC General Lab Orders Extension/Gap

Introduction – Co-Chairs and Staff

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Healthcare Information Technology Standards Program (HITSP)



Providing specifications that integrate diverse standards to meet clinical and business needs for sharing information:

- 1. Develop specifications that address broad stakeholder perspectives**
- 2. Support testing and validation of specifications**
- 3. Catalyze efforts of standards organizations to realize changes to address gaps and overlaps**

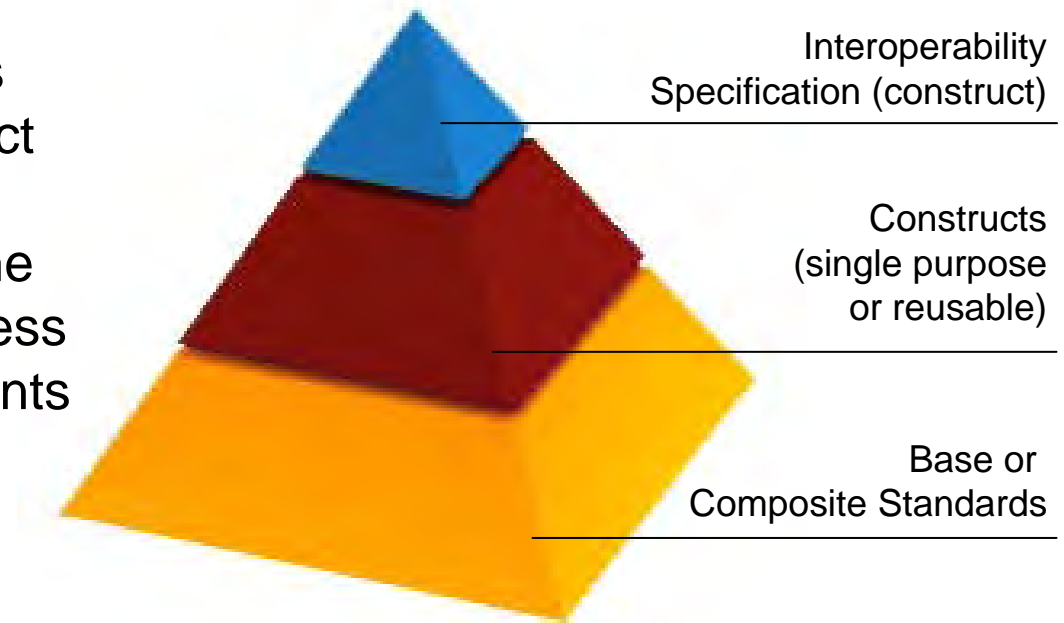
Enabling Interoperability between healthcare stakeholders

Specifying Standards needed to enhance care quality and contain costs

HITSP Interoperability Specifications

A complete IS set provides a framework that defines

- A hierarchy of constructs
- The role of each construct
- The relationship of one construct to another in the context of specific business and/or clinical requirements



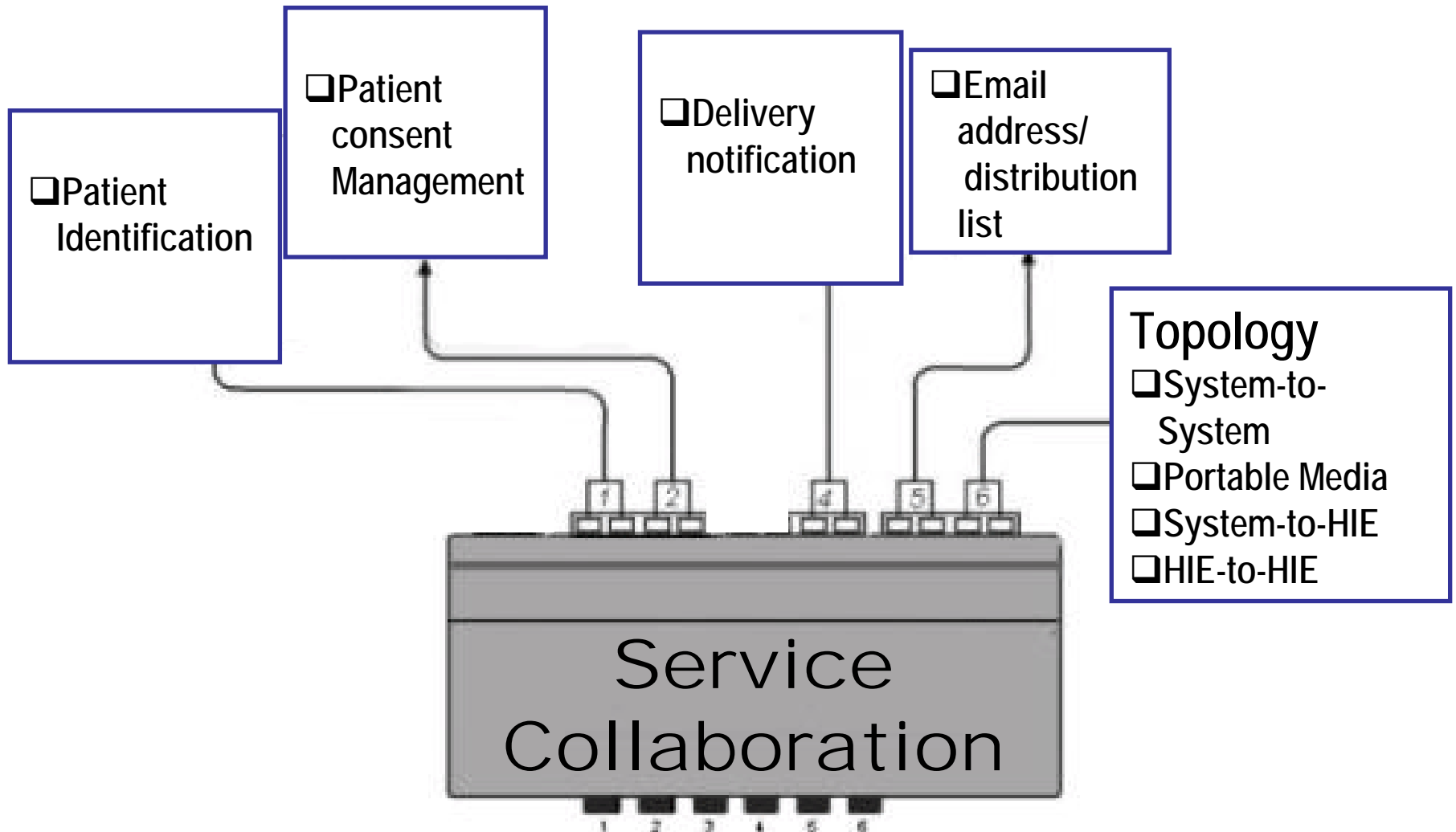
Interoperability Specification (Complete Set)

Capabilities and Service Collaborations

Keys to Simpler Definition and
Implementation of HITSP Specifications

Service Collaboration (SC)

- Defines a standards-based secure infrastructure needed for interoperable information exchanges
- Includes a secure transport mechanism with topology and other options
- Uses HITSP Constructs to specify the secure infrastructure
- Does not specify the content of the information exchange but may include information to support the exchange (e.g., authorization information)



Standards-based Secure Infrastructure Needed for Interoperable Information Exchanges

Service Collaborations

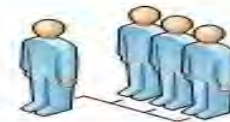
- ❑ SC108 - Access Control
- ❑ SC109 - Security Audit
- ❑ SC110 - Patient Identification Management
- ❑ SC111 - Knowledge and Vocabulary
- ❑ SC112 - Healthcare Document Management
- ❑ SC113 - Query for Existing Data
- ❑ SC114 - Administrative Transport to Health Plan
- ❑ SC115 - HL7 Messaging
- ❑ SC116 - Emergency Message Distribution Element

HITSP Capability

- Enables systems to address a business need for interoperable information exchange
- Bridges between business, policy and implementation views:
 - Defines a set of information exchanges at a level relevant to policy and business decisions
 - Supports stakeholder requirements and business processes
 - Defines information content and secure infrastructure
 - Specifies use of HITSP constructs sufficiently for implementation
 - Includes constraints and identifies specific network topologies

What is an example of a capability?

- ❑ Requirement: An organization wants to exchange a prescription with an ambulatory organization.
- ❑ The diagram on the right shows how Capability 117 was assembled to support this requirement.

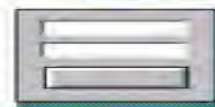
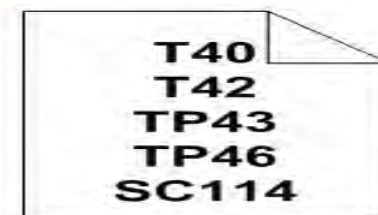


I want to exchange a prescription with an Ambulatory of Long-Term Care (LTC) Organization



System Roles

- Medication Order Prescriber
- Medication Order Filler
- Health Plan
- Health Information Exchange (HIE)



CAP117 – Communicate Ambulatory and Long Term Care Prescription

Existing HITSP Capabilities – Clinical Operations

Clinical Operations

Communicate Ambulatory and Long Term Care Prescription - CAP117

Communicate Hospital Prescription - CAP118

Communicate Clinical Referral Request - CAP121

Retrieve Genomic Decision Support - CAP125

Communicate Lab Results Message - CAP126

Communicate Lab Results Document - CAP127

Communicate Imaging Information - CAP128

Retrieve and Populate Form - CAP135

Communicate Encounter Information Message - CAP137

Existing HITSP Capabilities – Public Health and Emergency Response; Administration and Finance

Public Health and Emergency Response

Communicate Quality Measure Data - CAP129

Communicate Quality Measure Specification - CAP130

Update Immunization Registry - CAP131

Retrieve Immunization Registry Information - CAP132

Communicate Immunization Summary - CAP133

Communicate Emergency Alert - CAP136

Communicate Resource Utilization - CAP139

Administration and Finance

Communicate Benefits and Eligibility - CAP140

Communicate Referral Authorization - CAP141

Existing HITSP Capabilities - Security, Privacy, and Infrastructure

Security, Privacy, and Infrastructure

Communicate Structured Document - CAP119

Communicate Unstructured Document - CAP120

Retrieve Medical Knowledge - CAP122

Retrieve Existing Data - CAP123

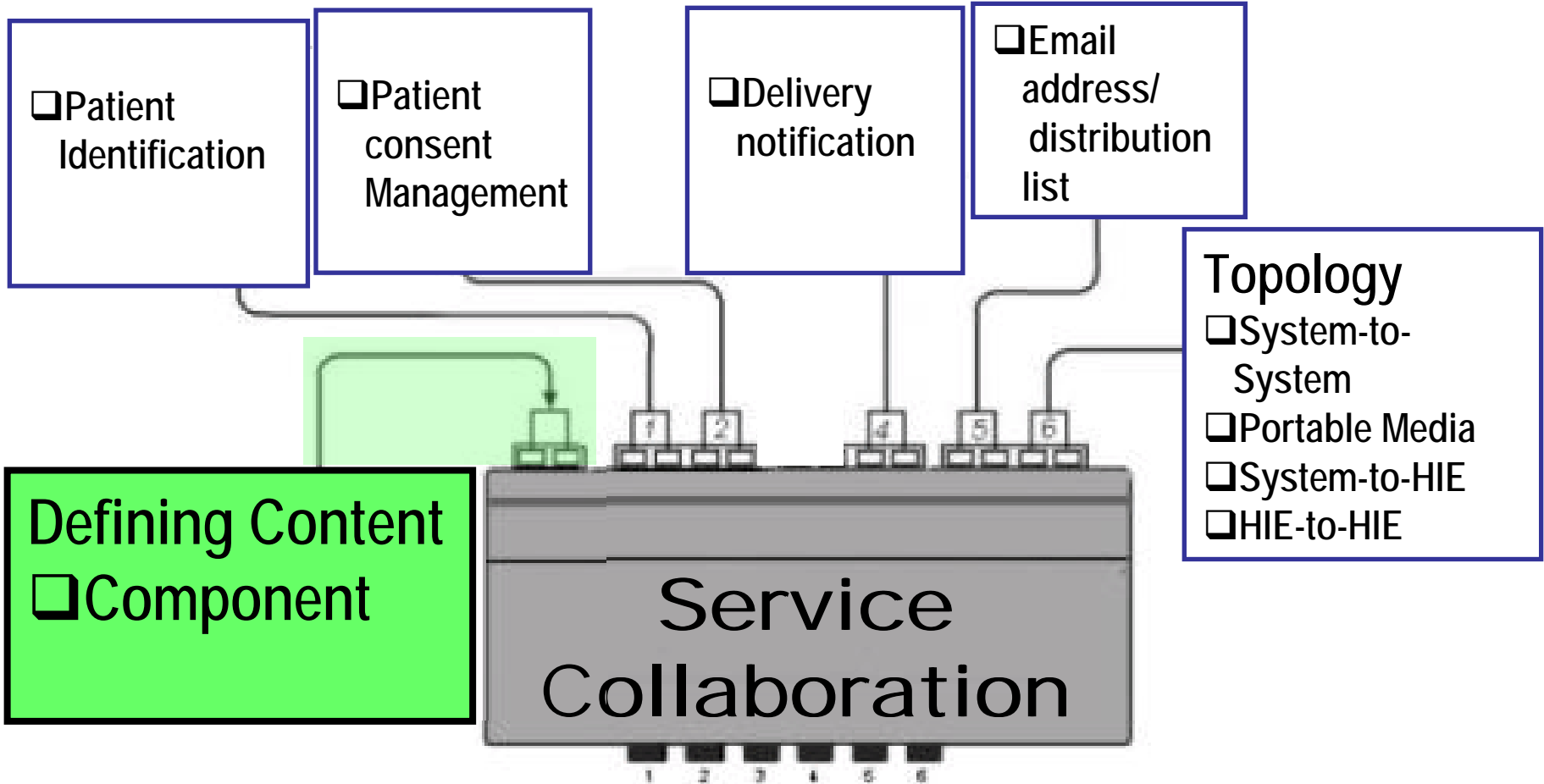
Establish Secure Web Access - CAP124

Retrieve Pseudonym - CAP138

Retrieve Communications Recipient - CAP142

Manage Consumer Preference and Consents - CAP143

Capability



Marrying Content Definition with Secure Infrastructure for a set of Interoperable information exchanges

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Schedule

- Requirements for the General Lab Orders Extension/Gap introduced to the Public via Webinar September 29, 2009
- Comment feedback on the Requirements for this work item closes October 8th
 - The process for submitting comments is included on slide 42 of this presentation
- The full documents will be released for a 4 week Public Comment period in early November

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Technical Approach of Capability 99 – Communicate Lab Order Message

- *The Communicate Lab Order Message Capability satisfies the information exchange requirements for the sending and receiving of a set of laboratory order, control and status messages. Laboratory orders may be from an inpatient or outpatient (e.g.,: Clinic, ER, office, etc) environment*
- *This capability meets the requirements described in the General Lab Orders Extension/Gap document by using the HL7 2.51 Lab Order Messages, Tables 38 and 119*
- *The Extension/Gap defines the following requirements at a high level:*
 - *Review a listing of available orders*
 - *Receive information/instructions for ordering a general laboratory test*
 - *Provide order details by using pre-populated and/or manually populated fields within a general lab order*
 - *Provide additional information regarding the lab order*
 - *Modify and/or complete a lab order*
 - *View the status of a lab order*
 - *Unambiguously associate an order to a test result*

Technical Approach of Capability 99

Section 6

- Information Exchanges are identified from the functional requirements described in the 2009 General Lab Orders extension/gap document from ONC
- Interfaces are defined by HL7 2.5.1 Non-Medical Orders Message Table 38 (States) and 119 (Control Commands)
- Existing constructs are used for authorization and transport
- A new construct is needed for control commands and status
- A new construct is needed for catalogue management

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
<p>A. The ability to review a listing of available general laboratory orders</p>	<p>i. When selecting orders, the clinician may need the ability to review a listing of the available general laboratory orders. These listings may be acquired through libraries of commonly used general laboratory orders. These listings of available general laboratory orders may be referred to as laboratory orders catalogues or compendiums of general laboratory orders. These catalogues or compendiums may be made available by the knowledge suppliers, the ordering entity, other healthcare entities, the receiving laboratory, other laboratories, laboratory associations, public health, or regulatory associations. A catalogue may simply include the names of available general laboratory orders and/or additional relevant information to assist both the ordering clinician and the receiving laboratory</p>	<p>IEC Send and Receive Laboratory Catalogue of Orders</p>
<p>E. The ability to receive information/instructions which may assist the clinician in ordering a general laboratory test and the laboratory processing the order</p>	<p>i. As part of the ordering process, the clinician may receive instructions that may include information concerning indication for test, patient preparation, timing/sequence, and specimen collection. These instructions may be specific for an individual and/or may apply to a certain group of orders as discussed above in A.i. and D.i.</p>	<p>IEC Send and Receive Laboratory Catalogue of Orders</p>

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
G. The ability to provide required and optional order details by using pre-populated and/or manually populated fields within a general laboratory order	i. Information requirements and instructions for laboratory orders in some cases may be referred to as “ask at order entry” and may be presented in various electronic formats including forms, templates, order entry formats, and requisitions. As described in A.i. and C.i. above, a listing of available general laboratory orders these forms/requisitions may be incorporated into EHRs	IEA Send and Receive Laboratory Order Control and Data IEB Send and Receive Laboratory Order Status Data IEC Send and Receive Laboratory Catalogue of Orders
	ii. Depending on the system being used to place the general laboratory order, the information may be pre-populated, entered manually, and/or a combination of both, in order to complete the form/requisition. Examples of this information may include: patient demographics, test name, reason for test, order priority, relevant clinical information, ordering clinician information, general specimen information, and billing or insurance information	IEA Send and Receive Laboratory Order Control and Data IEB Send and Receive Laboratory Order Status Data IEC Send and Receive Laboratory Catalogue of Orders

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
H. The ability to provide additional information regarding the general laboratory order.	i. The laboratory may require additional information and may need to electronically request this information	IEH Query and Response Supporting Information Note: Additional Information as stated here is interpreted to mean information that is needed in order to run the test properly and complete the order
	ii. The clinician may also want to provide additional information to the laboratory. Depending on the system being used to place the general laboratory order, the additional information may be pre-populated, entered manually, and/or a combination of both. Examples of additional information may include instructions to the laboratory regarding a specified order or specimen	IEG Send and Receive Supporting Information Note: Additional Information as stated here is interpreted to mean information that would be of interest about the order or the patient

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
I. The ability to modify and/or complete the general laboratory order	i. Intra-organizational policies and functionality will determine the exact steps an ordering clinician must follow to complete the placement or modification of a general laboratory order	IEA Send and Receive Laboratory Order Control and Data
	ii. The ordering clinician may need to identify a specific laboratory which will process the laboratory test. This determination may be made based upon listings of available laboratory orders, insurance specifications, organizational policies or contracts, inter-organizational policies or contracts, local and/or state policies and regulations. The determination decisions may be made by the provider or others prior to reviewing and placing a laboratory order or may be a capability built into the process/system which is executed prior to or after a clinician places an order for a general laboratory test	IEA Send and Receive Laboratory Order Control and Data

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
<p>J. The ability to electronically communicate the general laboratory order or modified general laboratory order from the EHR or clinical order entry system to the appropriate laboratory</p>	<p>i. The laboratory order is communicated from the ordering clinician’s system to the receiving laboratory. Depending on patient care needs, business needs, public health needs, and current regulations, the general laboratory order and accompanying information may also be communicated or forwarded to other recipients that may include but may not be limited to: other clinicians, reference laboratories, public health, personally controlled health records, and payers</p>	<p>IEA Send and Receive Laboratory Order Control and Data IEB Send and Receive Laboratory Order Status Data IEC Send and Receive Laboratory Catalogue of Orders</p>
	<p>ii. Depending on intra-organizational, local, and state policies and regulations, ordering clinicians may also benefit from the ability to sign or verify a general laboratory order before it is forwarded. Clinicians may also benefit from the ability to electronically notify and/or carbon copy (cc:) another clinician when ordering a general laboratory test</p>	<p>IEA Send and Receive Laboratory Order Control and Data Note: Digital signature functionality is normally contained within the ordering system and not normally distributed[GP1] . [GP1]Ken McCaslin verified that digital signatures are not a required on lab orders</p>

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
J (part two). The ability to electronically communicate the general laboratory order or modified general laboratory order from the EHR or clinical order entry system to the appropriate laboratory	iii. Furthermore, during the ordering of a general laboratory test, clinicians may benefit from the ability to specify that the results of a general laboratory order be forwarded to other clinicians. Specifics regarding the resulting and communication of results associated with lab orders are included in the 2006 EHR – Laboratory Results Use Case	IEA Send and Receive Laboratory Order Control and Data
	iv. During the placement or communication of the general laboratory order, clinicians may also benefit from the ability to perform duplicate checking. The clinician may be notified by the ordering system, or the receiving LIS, that a particular test has already been ordered	No information exchange requirement. Note: Duplicate checking is a function of the order management system. This is handled during normal workflow. If the lab receives a duplicate order, it will reject. This issue is extremely complicated and is being ruled out of scope
	v. Clinicians may also receive additional notifications. These notifications may be supported by decision support capabilities. While not the focus of this extension/gap, the use of decision support capabilities have been described in the 2007 Medication Management Use Case and the 2008 Personalized Healthcare Use Case	IEB Send and Receive Laboratory Order Status Data Note: Notification here is interpreted to mean “Notification of Reflex testing” and therefore will be encoded within the status (NW)

Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
<p>K. The ability to electronically send an acknowledgement to the ordering clinician, communicating the receipt of the original or modified general laboratory order by the laboratory or LIS</p>	<p>i. Intra-organizational policies and functionality will determine the exact steps a receiving laboratory will follow to acknowledge the receipt of a general laboratory order. This includes the laboratory and/or LIS having the ability to receive and acknowledge the general laboratory order, order modifications, and order cancellations. This acknowledgement should be communicated to the ordering clinician</p>	<p>IEB Send and Receive Laboratory Order Status Data</p>

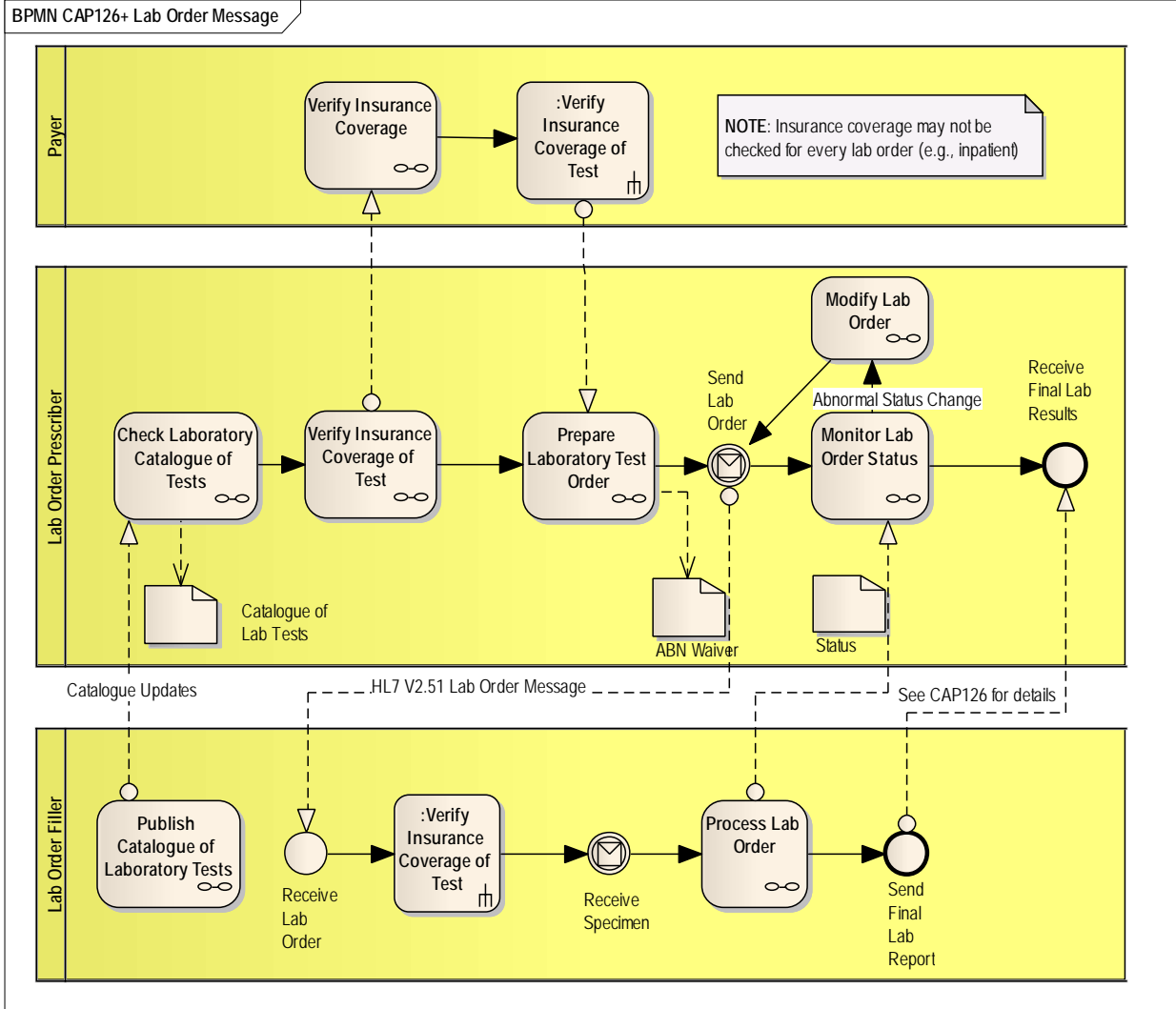
Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
M. The ability to electronically communicate a modification to the general laboratory order	i. As described, an ordering clinician may communicate a modification to a previously sent general laboratory order to the receiving laboratory. Similarly, there may be circumstances when the receiving laboratory may need to modify the general laboratory order. The modified general laboratory order along with any relevant information may be communicated to the ordering clinician	<p>IEA Send and Receive Laboratory Order Control and Data</p> <p>Note: When a modification is a change to WHAT is being ordered, that needs to be a cancellation and reorder, or a replacement order.</p> <p>However, when the modification is a change in priority, timing, etc, then the lab can also change the order and may want to notify the EHR/clinician system.</p> <p>For example, a lab may return a modification to a laboratory order saying that “The order will be processed in an hour , rather than right now.”</p> <p>Note: The workflow that is being requested here is for the lab to post an updated order back to the provider when it is modified in the lab information system, due to either a change being made by the lab that doesn't require provider approval, or through a change that has been approved by the provider using some other means of communication.</p> <p>Note: EHR system or lab application may want to send an acknowledgement of whether the change was accepted or rejected</p>
	ii. There may also be instances where the general laboratory order cannot be modified. In this case, the order for the general laboratory test may be cancelled by the ordering clinician and/or receiving laboratory and a new general laboratory order may be placed and communicated	IEA Send and Receive Laboratory Order Control and Data

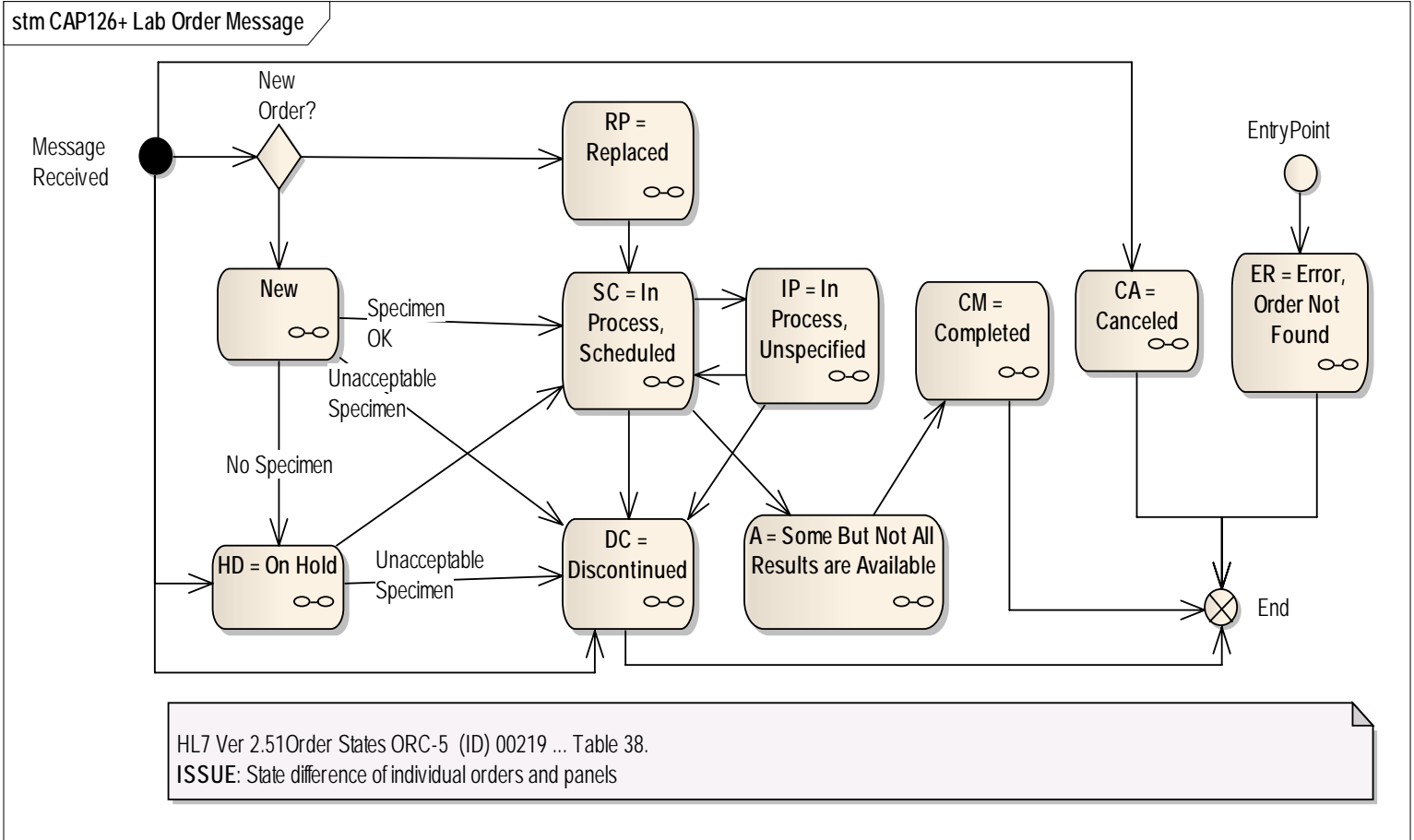
Technical Approach of Capability 99 Section 6

Functional Requirements		Information Exchange
N. The ability to view the status of a general laboratory order.	i. A clinician and/or a laboratory may need to view the status of a general laboratory order. This information could include status of specimen collection, status of processing, and a history of order modifications	<p>No information exchange requirement. (Out of scope as this is a function of the laboratory application.)</p> <p>The ability to view the status of a general laboratory order requires a great deal of work that is not available at this time.</p> <p>This functional requirement also requires us to be able to distinguish when an order status becomes a result status and the overlap needs to be clarified in the overall laboratory business model.</p> <p>ACLA needs to address this issue</p>
O. The ability to unambiguously associate an order to a test result	i. A clinician and/or a laboratorian may need the ability to identify the specific test result associated with the general laboratory order. Specifics regarding the resulting and communication of results associated with lab orders are included in the 2006 EHR – Laboratory Results Use Case	<p>No information exchange requirement. (Out of scope as this is a function of the application)</p>

Notional Laboratory Order Workflow



Notional Lab Order States



Technical Approach – Capability 99 Section 2

Interface Number	Interface Type	Interface Name
1	Initiating	Send New Order ^[1] (Placer ^{[2], [3], [4]})
2	Responding	Receive New Order and Acknowledge (Filler ^{[5], [6]})
3	Initiating	Send Order Modification (XO) ^{[7], [8]} [GP1] (Placer)
4	Responding	Receive Order Modification (XO) ^[9] [g2] (Filler)
5	Initiating	Send Previous Results with new order/service (Placer [g3])
6	Responding	Receive Previous Results with new order/service (Filler)
7	Initiating	Send Order/service accepted & OK (Filler)
8	Responding	Receive Order/service accepted & OK (Placer)
9	Initiating	Send Unable to accept order/service (Filler)
10	Responding	Receive Unable to accept order/service (Placer)
11	Initiating	Send Order Cancel (Placer, Filler)
12	Responding	Receive Order Cancel (Filler, Placer)
13	Initiating	Send Order/service canceled (Filler)
14	Responding	Receive Order/service canceled (Placer)
15	Initiating	Send Canceled as requested (Filler)
16	Responding	Receive Canceled as requested (Placer)
17	Initiating	Send Unable to cancel (Filler)
18	Responding	Receive Unable to cancel (Placer)
19	Initiating	Send Discontinue order/service request (Placer [g4])
20	Responding	Receive Discontinue order/service request (Filler)
21	Initiating	Send Order/service discontinued (Filler)

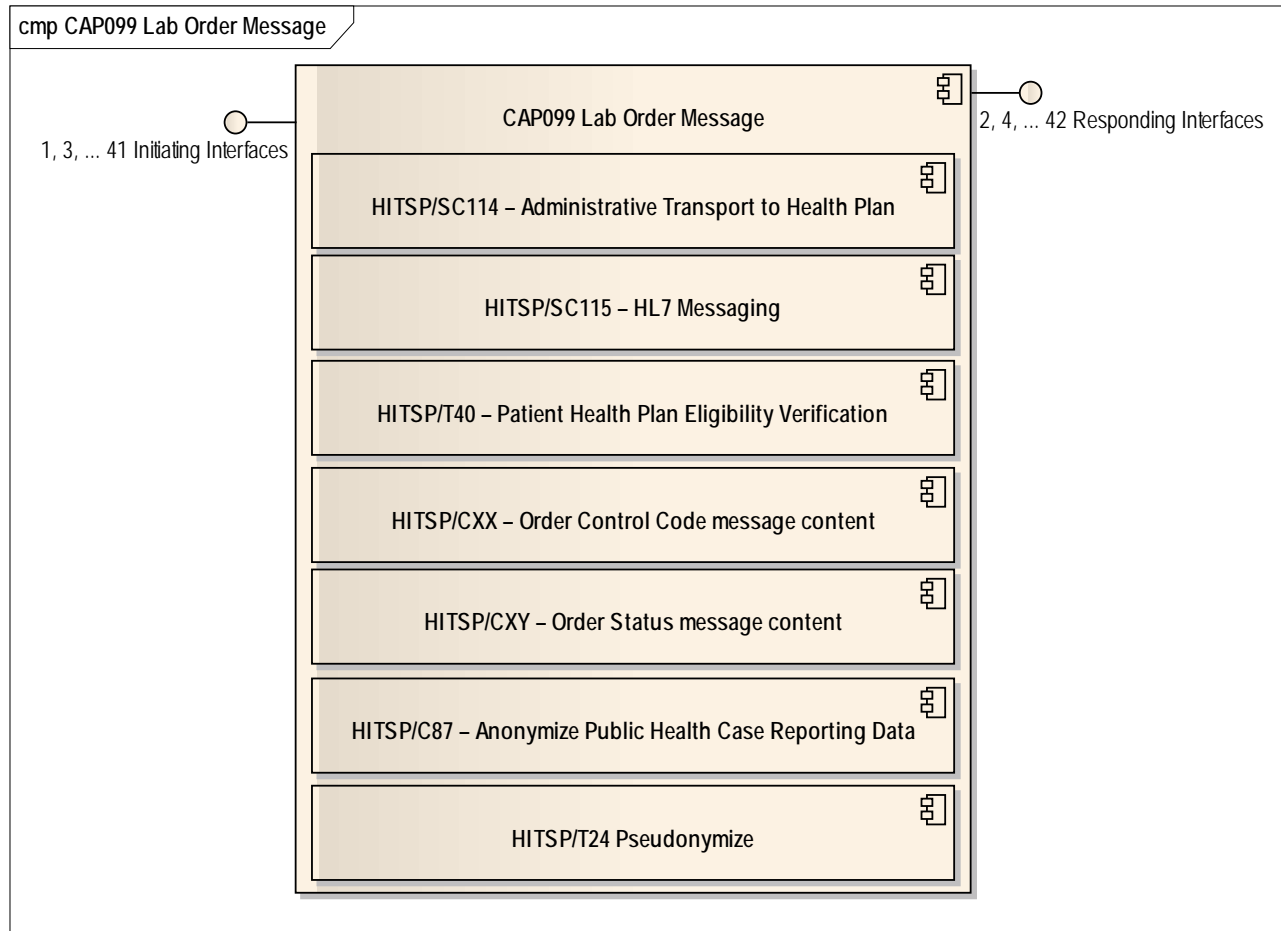
Technical Approach – Capability 99 Section 2

Interface Number	Interface Type	Interface Name
22	Responding	Receive Order/service discontinued (Placer)
23	Initiating	Send Discontinued as requested (Filler)
24	Responding	Receive Discontinued as requested (Placer)
25	Initiating	Send Unable to discontinue (Filler)
26	Responding	Receive Unable to discontinue (Placer)
27	Initiating	Send Parent order/service (Filler) ^[1]
28	Responding	Receive Parent order/service (Placer) ^[2]
29	Initiating	Send Order Status Request (SR) (Placer)
30	Responding	Receive Order Status Request (SS) (Filler)
31	Initiating	Request Order Catalogue Update (Placer)
32	Responding	Respond with Order Catalogue Update ^{[3], [4]} (Filler)
33	Initiating	Request Eligibility Information (Query) (Placer, Filler)
34	Responding	Respond with Eligibility Information (Payer)
35	Initiating	Send Supporting Information (OBX or NTE) (Placer) (see requirement H.i and H.ii in table 6-1 for more information)
36	Responding	Receive Supporting Information (OBX or NTE) (Filler)
37	Initiating	Request Supporting information (Query) (Filler)
38	Responding	Respond with Supporting Information (OBX or NTE) (Placer)

Questions for Public Comment

- The Extension/Gap states the need to modify a lab order
 - Should this be done by providing a modify lab order interface, or by cancelling and resending the order
 - What do you do with specimens that have already been collected
 - What are the state laws and policies that relate to modifying, discontinuing and cancelling orders
- Should this interface be required, optional or non existent
 - If required, should it be implemented by comments or structured/coded data
- There is some concern among SMEs whether a standing order should be discontinued/resumed or cancelled and reordered
 - Is anyone aware of an implementation that uses discontinue order (e.g., discontinue over the weekend and resume on Monday)

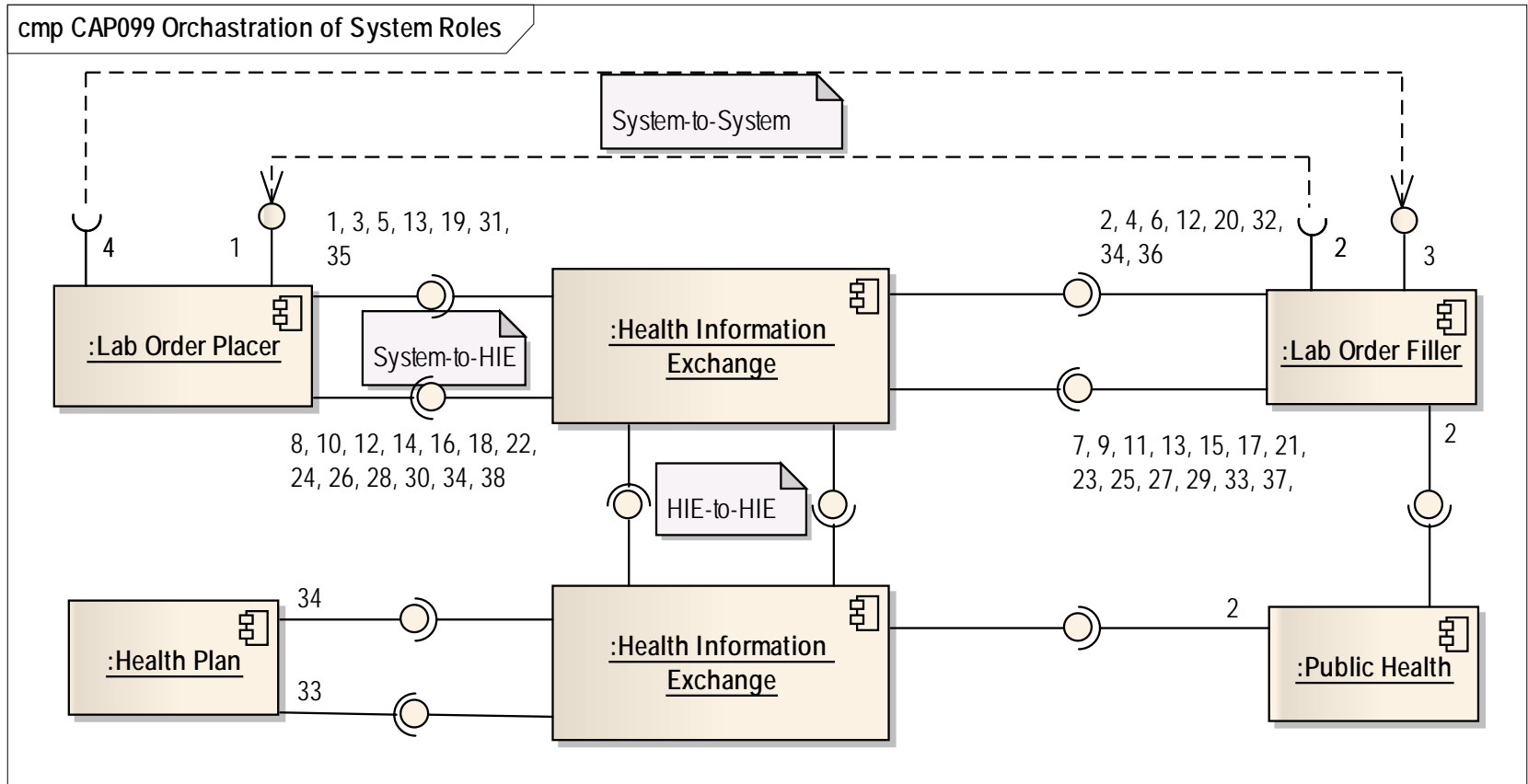
External Interfaces of Capability



Orchestration of System Roles

System Role	System Role Definition	Example System	Interface
Order Placer	Initiating System	EHR-S	1, 3, 5, 13, 19, 31, 35
Order Placer	Responding System	EHR-S	8, 10, 12, 14, 16, 18, 22, 24, 26, 28, 30, 34, 38
Order Filler	Initiating System	Laboratory	7, 9, 11, 13, 15, 17, 21, 23, 25, 27, 29, 33, 37
Order Filler	Responding System	Laboratory	2, 4, 6, 12, 20, 32, 34, 36
Surveillance	Responding System	Public Health [b1]	2
Payer	Responding System	Health Plan [b2]	34

Orchestration of System Roles



Information Exchanges Mapped to External Interfaces

Information Exchange Identifier	Exchange Action	Exchange Content	Constraints	Initiating Interface	Responding Interface
A	Send and Receive	ECXX – Order control and data	HL7 Orders Table 119 codes	1 ^[1] , 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28
B	Send and Receive	ECXY – Order Status	HL7 Orders Table 38 codes	27	29
C	Send and Receive	ECYX- Catalogue of Orders	None	31	32
D	Query and Response	EC40 - Patient Health Plan Eligibility Verification data	None	33	34
E	Send and Receive	ECYY - Supporting Information	None	35	36
F	Query and Response	ECYY - Supporting Information	None	37	38

^[1] Advanced beneficiary notices (ABN) status must be sent with order; HL7 non-medication order message ORC-20 = 1, 2, 3, or 4 defines the ABN status.

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Comment Tracking System

□ HITSP.org link: http://www.hitsp.org/public_review.aspx

Using the HITSP Comment Tracking System The HITSP Comment Tracking System allows registered authors to provide comments on documents that are undergoing public review or implementation testing. A unique user ID and password is required for each comment submitter

Please note that the Comment Tracking System closes at 5 PM Pacific Time on the final day of public review, October 8th

Current HITSP members:

Submit comments by following the link above and entering your current user ID and password

Add Comment

Register a **NEW** comment in the tracking system

View (My) Comments

View the status or disposition of a comment previously submitted

Please contact Hannah Zander (HZander@ansi.org) with any questions or problems with entering comments

Questions and Comments for General Lab Orders Requirements

- Comments regarding the Requirements outlined to meet the needs of General Lab Orders are welcome during this portion of the Webinar
- Comments regarding the full Capability can be addressed via Comment Tracking System (see previous slide for instructions)