



Department of Health & Human Services  
Office of the National Coordinator for  
Health Information Technology

# **HIT Policy Committee Information Exchange Workgroup Provider Directory Task Force**

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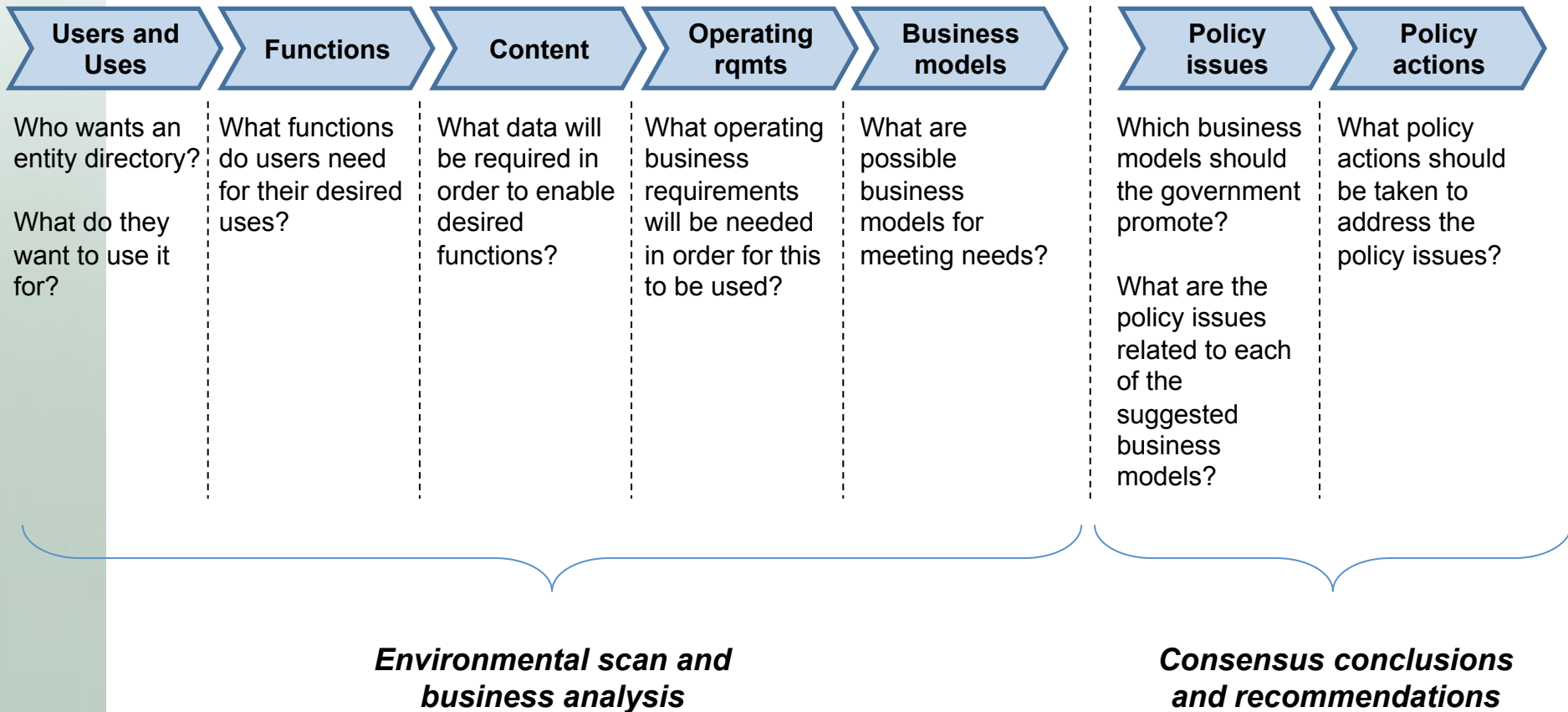
## Agenda

- Discuss and finalize recommendations on Entity-Level Provider Directories (ELPDs):
  - Users
  - Uses/Functionality
  - Directory Content
  - Operating Requirements/Business Models
  - Terminology
- Two TF calls to complete tasks:
  - Today
  - November 12
- Recommendations presented to full IE Workgroup – November 15
- Final recommendations on Entity-level Provider Directories (ELPDs) to HIT Policy Committee – November 19

# Proposed framework

## Directory Requirements and Options

## ➔ Recommendations



## ELPD Recommendations: Users

### General Guidelines:

- Anyone involved in the exchange of patient health information
- Submitter, receiver, requester, provider of patient health information
- Entities expected to abide by Nationwide Health Information Exchange governance, guidelines and standards

### Types of entities:

- Health care provider organizations (i.e., hospitals, clinics, nursing homes, pharmacies, labs, etc)
- Other health care organizations (i.e., health plans, public health agencies)
- Health Information Organizations (i.e., regional HIE operators, health information service providers)
- Other organizations (business associates?, clearinghouses? Others?)

### Who is not?

- Individuals
  - Providers – will be the focus of individual-level provider directory
  - Patients – out of bound
- Entities not involved in the exchange of patient health information

## ELPD Recommendations: Uses and Functionality

### **General functional capabilities supported by Entity-level provider directories:**

- Support directed exchanges (send/receive as well as query/retrieve)
- Provide basic “discoverability” of entity
- Provide basic “discoverability” information exchange capabilities (i.e. CCD, HL7 2.XX)
- Provide basic “discoverability” of entity’s security credentials

### **Assumptions:**

- Message sender knows where the message needs to go but may not know the complete address
- Messages can be sent over the Internet using standard Internet protocols and addresses.
- Message security is carried over via agreed-upon mechanisms (i.e., PKI)

### **Uses:**

- Follow various uses cases

## Scenarios and uses/value of ELPDs

Scenarios	Value of Entity-Level Directory
<p><b><u>Scenario: Clinician Orders Test from Lab &amp; Lab Sends Results</u></b></p> <ul style="list-style-type: none"> <li>• Clinician from Clinic X sends Lab Order to Laboratory</li> <li>• Clinic X's EHR generates lab order message and sends it to Laboratory</li> <li>• Laboratory Information System (LIS) received lab order</li> <li>• After lab sample is processed and results are entered, LIS generates a lab results message and sends back to ordering clinician</li> </ul>	<ul style="list-style-type: none"> <li>• Generally, exchanges with laboratories might be well-known to the clinic and pre-established</li> <li>• Clinic X will use the entity-level directory to obtain the organization-level 'address' of the laboratory, and other information exchange features supported by the lab (port information, formats supported, security credential locations) which allows Clinic X to establish a connection, open a defined port, and drop a message to the lab</li> <li>• The entity level directory provides two benefits:             <ul style="list-style-type: none"> <li>• Establishing a first-time connection with the lab and have the path be defined</li> <li>• Afterwards, to ensure that changes to the address of the lab from changes the lab might experience (moved, purchased, etc) will be resolved</li> </ul> </li> <li>• Lab sends back results to Clinic X to the declared 'address' included in the electronic lab order</li> <li>• Lab may also use entity-level directory to support 'copy-to' function to send results to a non-ordering provider</li> <li>• Using the directory, the digital credentials of both the sending and receiving computers are used to validate identities.</li> <li>• Prior to sending the transaction, the sending computer checks the I.E. services that the receiving computer uses and determines whether the transaction can be sent.</li> </ul>

## Scenarios and uses/value of ELPDs

Scenarios	Value of Entity-Level Directory
<p><b><u>Scenario: Patient Summary from PCP to Specialist</u></b></p> <ul style="list-style-type: none"> <li>• PCP from Clinic X is sending a Patient Summary to Specialist in Clinic Y</li> <li>• Clinic X's EHR sends patient summary (i.e. CCD) to Clinic Y's EHR</li> <li>• Clinic Y EHR system receives the patient summary and incorporates data into the patient's record in the EHR</li> <li>• Clinic Y EHR sends an alert to specialist that new information about Patient is available</li> </ul>	<ul style="list-style-type: none"> <li>• Clinic X will use the entity-level directory to identify the organization-level 'address' of Clinic Y and other information exchange features supported by Clinic Y (port information, formats supported, security credential locations)</li> <li>• In the message header or inside the message is where the information about the patient, the provider (specialist) resides, which will be used by the EHR of the recipient to incorporate data, issue alerts to providers about new data available</li> <li>• Using the directory, the digital credentials of both the sending and receiving computers are used to validate identities.</li> <li>• Prior to sending the transaction, the sending computer checks the I.E. services that the receiving computer uses and determines whether the transaction can be sent.</li> </ul>
<p><b><u>Scenario: Hospital Discharge Summary (or ED Visit Summary or Surgical Report Summary)</u></b></p> <ul style="list-style-type: none"> <li>• Hospital discharge summary (i.e. CDA) of a patient is sent from hospital information system (EHR) to the clinic EHR where patient's primary care provider practices and the patient's record resides</li> <li>• Clinic's EHR system receives the discharge summary and incorporates data into the patient's record in the EHR</li> <li>• Clinic's EHR sends an alert to primary care provider that new information about Patient X is available</li> </ul>	<ul style="list-style-type: none"> <li>• Hospital will use the entity-level directory to identify the organization-level 'address' of the clinic the data is intended to, and other information exchange features supported by the clinic (port information, formats supported, security credential locations)</li> <li>• In the message header or inside the message is where the information about the patient, the provider (specialist) resides, which will be used by the EHR of the recipient to incorporate data, issue alerts to providers about new data available</li> <li>• Using the directory, the digital credentials of both the sending and receiving computers are used to validate identities.</li> <li>• Prior to sending the transaction, the sending computer checks the I.E. services that the receiving computer uses and determines whether the transaction can be sent.</li> </ul>

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<p><b><u>Scenario: Hospital X Request for Information from Hospital Y</u></b></p> <ul style="list-style-type: none"> <li>• Patient outside of their home geography appears in hospital for emergency or acute care</li> <li>• Hospital X needs additional clinical information prior to treatment</li> <li>• Patient knows familiar name of home Hospital Y; Hospital X needs to look up complete address for Hospital Y</li> <li>• Hospital X sends request for patient information to Hospital Y</li> <li>• Hospital Y sends CCD summary to Hospital X</li> </ul>	<ul style="list-style-type: none"> <li>• Hospital X will use the entity-level directory to search for the organization-level 'address' of the Hospital Y to be able to send query for patient information</li> <li>• Hospital Y will use the entity-level directory to discover location of security credentials (as applicable) of Hospital X</li> <li>• Hospital Y will send CCD the know address of Hospital X, based on the query</li> <li>• In the message header or inside the message is where the information about the patient, the provider (specialist) resides, which will be used by the EHR of the recipient to incorporate data, issue alerts to providers about new data available</li> <li>• Using the directory, the digital credentials of both the sending and receiving computers are used to validate identities.</li> <li>• Prior to sending the transaction, the sending computer checks the I.E. services that the receiving computer uses and determines whether the transaction can be sent.</li> </ul>
<p><b><u>Scenario: Patient Request for Site of Referral</u></b></p> <ul style="list-style-type: none"> <li>• PCP wants to refer patient for specialist consult or diagnostic testing</li> <li>• PCP (or patient?) searches Directory for specialists or diagnostic test centers</li> <li>• Patient chooses from among available choices</li> <li>• PCP sends CCD referral summary or diagnostic test order</li> </ul>	<ul style="list-style-type: none"> <li>• The entity level directory is used to make sure that the CCD is sent to the correct organization.</li> <li>• The header or message content contains information about the patient identity and, also, the specialist, if appropriate.</li> <li>• *** It is not necessary for this directory to describe services that are provided, because that information should be available from other sources. The primary purpose of the entity-level directory is routing.</li> </ul>



## Scenarios and uses/value of ELPDs

Scenarios	Value of Entity-Level Directory
<p><b>Scenario: Public Health request for data from provider</b></p> <ul style="list-style-type: none"> <li>Public health agency needs to obtain information about a patient from a provider (clinic, hospital), in support of public health functions</li> <li>Public health seeks provider, sends query with request for information</li> <li>Provider received query, process it and submits data to public health agency</li> </ul>	<ul style="list-style-type: none"> <li>Public health agency uses entity-level provider directory to identify the 'address' of the clinic/hospital to send the query</li> <li>Entity-level directory provides other information exchange features supported by the clinic/hospital (port information, formats supported, security credential locations)</li> <li>Public health agency sends query to clinic/hospital</li> <li>In the message header or inside the message is where the information about the patient resides, which will be used by the clinic/hospital to search/extract data needed</li> </ul>
<p><b>Scenario: HIO to HIO routing</b></p> <ul style="list-style-type: none"> <li>A provider that is part of regional HIO X needs to send clinical information to a provider that is part of regional HIO Y</li> </ul>	<ul style="list-style-type: none"> <li>HIO X uses entity-level directory to search for the organization's 'address' of the provider in HIO Y, the intended recipient of the message</li> </ul>

# ELPD Recommendation: Content

## General Guidelines:

- Focus on content needed to make ELPD functionality executable and valuable
- Basic content requirements limit the need for frequent updates
- For content that requires frequent updates, ELPD should provide pointers to entity where up-to-date information can be found

## Categories of Information:

- Entity 'demographics' and identification information
  - Name, address(es)
  - Other familiar names
  - Human level contact
- Information Exchange Services
  - Relevant domains (as defined by each entity)
  - Protocols and standards supported for Information Exchange (SMTP, REST, CCD/CDA, CCR, HL7 2.x.x, etc). Possibility that entity directory can "point" to this information but not maintain it centrally
  - Addresses for different protocols (SMTP, web services, REST, others)
  - General Inbox location, if applicable (for message drop-off)
- Security
  - Basic information about security credentials (i.e., type, location for authentication)

# ELPD Recommendation: Business Models

## General Guidelines:

- Business model to support national scalability as well as harmonization and interoperability across localities and regions (states)
- Business model to provide flexibility to accommodate for various HIE approaches
- Governance to be defined within the context of overall ONC governance efforts
- Maintenance responsibility pushed to end-user participant

## Possible business model and operating approach:

- Internet-like model (nationally coordinated, federated approach)
  - Certified registrars: registrars are 'registered' and certified to receive/process/accept entities
  - National guidelines: Registrars follow national guidelines for who to accept, validation of application, addressing
  - Registrar reciprocity: Entities registered by one registrar are 'recognized' across system
  - ELPDs: maintained by registrars; cross-referenced through system (similar to DNS)
  - Roles of federal government:
    - National standardization and harmonization
    - Some agencies could be registrars themselves (i.e., Medicare, VA)
    - Build on existing national/federal tools (i.e., PECOS, NPPES, NLR, others)

## ELPD Recommendation: Basic Common Terminology

### Key Terms:

- Provider Directory
  - Entity-Level Provider Directory (ELPD)
  - Individual-Level Provider Directory (ILPD)
- Entity
- Individual Provider/Clinician
- Sender
- Receiver
- Routing
- Query/Retrieval
- Security Certificate (or other security-related information, for authentication purposes)
- Discoverability
  - Entity discoverability
  - Discoverability of Information exchange capabilities
  - Discoverability of security certificates
- Register/edit/delete and other administrative functions of Provider Directories
- Others?

***Important: Definitions to include the context in which terms will be used***

## Next Steps

- Complete recommendations on ELPDs
  - Prepare/disseminate revised materials with input from today's call for next TF call
- Begin preparing presentation for full IE WG with recommendations on ELPDs