NHIN Direct Implementation Group
Face to Face Meeting

May 6th, 2010

Agenda

Introduction	Farzad Mostashari & Arien Malec	30 min
User Story WG	Peter DeVault	20 min
Abstract Model WG	Brett Peterson	20 min
Addressing WG	Wes Rishel	20 min
Content Packaging WG	David McCallie	20 min
Lunch		30 min
Individual Involvement WG	Richard Elmore	20 min
Security & Trust WG	Sean Nolan	60 min
Comprehensive HIE Interop WG	Vassil Peytchev	60 min
Concrete Implementation WG	Brian Behlendorf & Sean Nolan	60 min
Implementation Geographies WG	Arien Malec	20 min
Wrap Up & Structured Discussion	Arien Malec	60 min

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Introduction

Review of Timeline

First Draft Specifications:
- Key User Stories
- Content Container Spec
- Security & Trust Spec
- Comprehensive HIE Service Descrp.
- Individual Involvement Rec.
- Addressing Spec
- Abstract Model
- Status of Concrete Implementation

- **2nd Draft Specs**
- June
  - Early Ref Implementation
  - Core Specifications and Service Descriptions
  - Interaction Model/Service Orchestration Model
- July
  - Ref Implementation
  - Testing Framework
  - Conformance Testing Scripts and Conformance Service
  - Ref Implementation Guides

- Ops/prod Draft Cert.
- Conformance Testing
- Core Messaging
- Policy Recommendation
- Process Recommendations

Weekly teleconferences

Face to face meetings

We Are Here

Review of Final Deliverables

Specifications & service descriptions including

- Formalized models
- Core specifications and service descriptions
- Conformance testing scripts and conformance service
- Reference implementation guides for edge systems and routing systems (including sample code, testing and conformance documentation, legal and policy documentation, etc...)
  - Implementation guide for CONNECT users

Process recommendations

- Use of NHIN Direct as a model (positive or negative)
- Formalized modeling process recommendations

Policy recommendations

- Recommendations on Federal role, states, etc...
- Policy recommendations for trust enablement

Marketing/awareness

- Core messaging
- Placements in industry journals, key social media outlets, etc...

Review Today's Deliverables

- **Key User Stories**: The User Story WG will provide a consistent set of User Stories
- **Content Container Specifications:** The Content Packaging WG will define a few workable alternatives for content packaging so that patient data of mixed types can be packaged and sent
- **Security & Trust Specifications:** The Security & Trust WG will provide alternatives and issue relating to security and trust enablement via technology
- **Comprehensive HIE Service Description:** The Comprehensive HIE WG will provide Service Description of how to mix and match direct transactions and Comprehensive HIE/NHIN specifications and services capabilities at scale
- **Individual Involvement Recommendation:** The Individual Involvement WG will provide recommendations for how individuals can participate in NHIN Direct Project Services
- **Addressing Specification:** The Addressing WG will provide a Specification on to effective addressing methods -- what is the health "email" address
- **Abstract Model:** The Abstract Model WG will provide a Diagram and Specification of an Abstract Model that all WGs can use to determine core architectural components, assumptions and terminology
- **Status of Concrete Implementations:** The Concrete Implementation WG will give an update about the status of concrete implementations

Meeting Rules

- Schedule:
  - No breaks, bio-breaks as needed
- Roles:
  - Arien will facilitate
  - Honora will keep minutes
  - George will play timekeeper & keep track of questions
- Questions:
  - Remote: use Twitter with an #NHINDirect hashtag to ask questions
  - Local: raise hand and George will keep the official comment queue
- Discussion:
  - Arien has authority to table items for later discussion, either by full group or at the WG level
  - Arien will use tabled items to frame open discussion at the meeting end
- Consensus Process:
  - Assume consensus unless stated otherwise by participants (i.e. raise your hand if you don't like what is going on)

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User Story WG

User Story Review Workgroup

- *Purpose is to provide consistent, vetted set of user stories available on the Wiki*
- Key May 6th Deliverable: Key User Stories
- Leader: Peter DeVault

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User Story Breakdown

- 23 total user stories
- 12 priority 1
- 9 priority 2
- 2 priority 3

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User Story Meaning of Priorities

- Changed from “Must,” “Should,” “Could” to 1, 2, 3
- All user stories represented are important and should be considered when architecting and implementing
- Priority implies phasing

User Story Priority 1

- Primary care provider refers patient to specialist including summary care record
- Primary care provider refers patient to hospital including summary care record
- Specialist sends summary care information back to referring provider
- Hospital sends discharge information to referring provider
- Laboratory sends lab results to ordering provider
- Transaction sender receives delivery receipt
- Provider sends patient health information to the patient
- Hospital sends patient health information to the patient
- Provider sends a clinical summary of an office visit to the patient
- Hospital sends a clinical summary at discharge to the patient
- Provider sends reminder for preventive or follow-up care to the patient
- Primary care provider sends patient immunization data to public health

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User Story Priority 2 & 3

- Provider or hospital reports quality measures to CMS
- Provider or hospital reports quality measures to State
- Laboratory reports test results for some specific conditions to public health
- Hospital or provider send chief complaint data to public health
- Provider or hospital sends update to regional or national quality registry
- Pharmacist sends medication therapy management consult to primary care provider
- A patient-designated caregiver monitors and coordinates care among 3 domains
- A Provider EHR orders a test
- A patient sends a message to the provider

- Transaction sender receives read receipt
- State public health agency reports public health data to Centers for Disease Control

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User Story: Primary care provider refers patient to specialist including summary care record (story)

- Perspective: A provider referring a patient to a specialist

- Context: The referring provider has made the determination that it is clinically and legally appropriate to send a referral and summary of care to the specialist.

- Story: The referring provider searches for a patient in the practice EHR and initiates a referral message. The referral reason is described in the message. In some cases the referral is directed to a specific specialist, and in other cases to a specialist practice. The referring provider attaches clinical documents as needed for reference, and then sends the referral.

- The specialist sees the new referral in her local practice EHR. If this is a new patient for the practice, a new patient is created in the EHR. The core referral and the various documents are imported into the new patient's chart.

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User Story: Primary care provider refers patient to specialist including summary care record (details)

Actor Details

- Addressees
- The Referring Provider and Specialist (or specialty practice)
- Source
- The Referring Provider's EHR
- Destination
- The Specialist's EHR

- There may be hidden actors, such as potential intervening HISPs between the Source and Destination.

Data Exchanged

The transmitted data will vary; some examples are provided below:

- In the simplest case, only a textual description of the referral may be transmitted
- The minimal IFR case will consist of a textual referral description with an attached summary of care (CCD or CCR)
- The ideally structured case will consist of an structured referral message or document (e.g., HL7 V2.5.1 REF I12 message) and an IFR-compliant summary of care document (such as a C32 CCD or a CCR)
- Optional attachments to any of these cases may include PDFs, images of various types (jpg, tiff, DICOM), and Office documents, such as word processing documents and spreadsheets (e.g., containing glucose logs, seizure diaries and the like).

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User Story Meaningful Use Crosswalk

Redwood MedNet NHIN Direct x MU Crosswalk

MU#	Care Goals	Stage 1 Objectives - Ambulatory	VIA PUSH
1	*Provide access to comprehensive patient health data for patient's health care team Use evidence-based order sets and CPOE Apply clinical decision support at the point of care Generate lists of patients who need care and use them to reach out to patients Report information for quality improvement and public reporting*	Use CPOE	
2		Implement drug-drug, drug-allergy, drug-formulary checks	
3		Maintain an up-to-date problem list of current and active diagnoses based on ICD-9-CM or SNOMED CT ®	
4		Generate and transmit permissible prescriptions electronically (eRx)	
5		Maintain active medication list	
6		Maintain active medication allergy list	
7		Record demographics o preferred language o insurance type o gender o race o ethnicity o date of birth	
8		Record and chart changes in vital signs: o height o weight o blood pressure o Calculate and display: BMI o Plot and display growth charts for children 2-20 years, including BMI.	
9		Record smoking status for patients 13 years old or older	
10		Incorporate clinical lab-tes: results into EHR as structured data	PUSH
11		Generate lists of patients by specific conditions to use for quality improvement, reduction of disparities, and outreach	
12		Report ambulatory quality measures to CMS or the States	PUSH
13		Send reminders to patients per patient preference for preventive/ follow up care	PUSH
14		Implement 5 clinical decision support rules relevant to specialty or high clinical priority, including diagnostic test ordering, along with the ability to track compliance with those rules	
15		Check insurance eligibility electronically from public and private payers	
16		Submit claims electronically to public and private payers.	
17	*Provide patients and families with timely access to data, knowledge, and tools to make informed decisions and to manage their health*	Provide patients with an electronic copy of their health information (including diagnostic test results, problem list, medication lists, allergies), upon request	PUSH
18		*no measure*	
19		Provide patients with timely electronic access to their health information (including lab results, problem list, medication lists, allergies) within 96 hours of the information being available to the EP	PUSH
20		Provide clinical summaries for patients for each office visit	PUSH
21	*Exchange meaningful clinical information among professional health care team*	Capability to exchange key clinical information (for example, discharge summary, procedures, problem list, medication list, allergies, diagnostic tes: results), among providers of care and patient authorized entities electronically	PUSH
22		Perform medication reconciliation at relevant encounters and each transition of care	
23		Provide summary care record for each transition of care and referral	PUSH
24	*Improve population and public health*	Capability to submit electronic data to immunization registries and actual submission where required and accepted	PUSH
25		*no measure*	
26		Capability to provide electronic syndromic surveillance data to public health agencies and actual transmission according to applicable law and practice	PUSH
27	*Ensure adequate privacy and security protections for personal health information*	Protect electronic health information created or maintained by the certified EHR technology through the implementation of appropriate technical capabilities	

n = 10

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Abstract Model Review WG

Abstract Model Workgroup

- *Purpose is to review and finalize a formal abstract model that all WGs can use to define common vocabulary*
- Key May 6th Deliverable: Abstract Model
- Leader: Brett Peterson

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Abstract Model Workgroup

- Purpose:
  - Refine and finalize an abstract model
    - Common terminology
    - Common frame of reference (actors/transactions)
    - Implementation agnostic
    - Supports user stories
- Key May 6th Deliverables:
  - Abstract Model
    - http://nhindirect.org/NHIN+Direct+Abstract+Model
  - Supporting examples:
    - http://nhindirect.org/Abstract+Model+Examples
    - Rich Kernan & Dan Russler
- Leader: Brett Peterson

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Abstract Model History, Status, Future

- Implementation Group Call for Consensus on version 1.1
  - Completed April 13th
  - Suggested changes resulted in current version 2.1
- Future
  - May codify certain NHIN Direct concrete decisions into Abstract Model as specifications are refined
    - Goal: Do so carefully so as to keep the Abstract Model as simple as possible (but no simpler)

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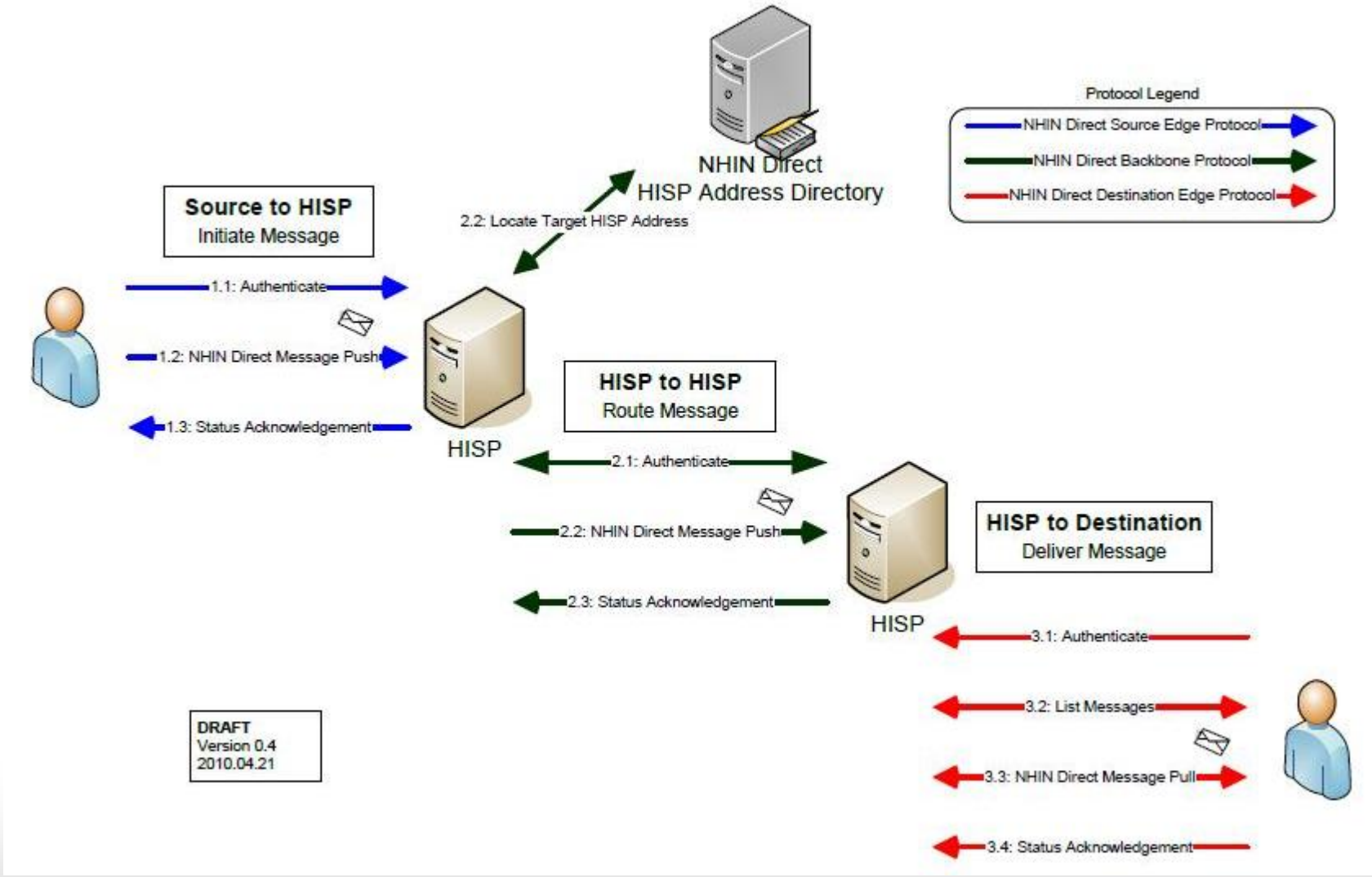
Abstract Model



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Abstract Model Call for Consensus – v2.1

- Version 1.1 was the last version on which official consensus was obtained
- Differences between v1.1 and v2.1
  - HSP became HISP (Health Information Service Provider)
  - Moved examples to a separate wiki page
  - Change “user/process” to “endpoint”
  - Explicitly mentioned mutual authentication between HISPs
  - Removed the term “onboarding”
  - HISP to Destination: Removed the assumption that this was achieved via a polling model
- Implementation Group Call for Consensus on version 2.1:
  - http://nhindirect.org/NHIN+Direct+Abstract+Model

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Addressing WG

Addressing Workgroup

- *Purpose is to define an implementation neutral mechanism for addressing that enables provider/individual identification and enabling organization routing*
- Key May 6th Deliverable: Addressing Spec
  - http://nhindirect.org/Addressing+Specification
- Leader: Wes Rishel
- Future: This group will take on directory services to provide these addresses and related information about the end-point to authorized users of NHIN-direct
- Call for consensus: http://nhindirect.org/Addressing+Specification

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Content Packaging WG

Content Packaging Workgroup

- *Purpose is to define a few workable alternatives, with pros/cons, for content packaging*
- Key May 6th Deliverable: Content Container Specifications
- Leader: David McCallie

- Key Goals
  - Leverage well-accepted Internet message content standards and standard API libraries
  - Potentially support simple email clients as edge applications
  - Tension: Some transport protocols may be better served by “pure” implementation that may be different from IMF.
    - Maintain flexibility, pending selection of transport protocol

- Current Status
  - Version 1.0 specification now open for consensus vote

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Content Container Specification – V 1.0 Details

- Health Content Container shall be an instance of an **Internet Message Format** textual object
  - RFC 5322 (commonly known as RFC 822)
  - Specifies standard & opt. message headers
    - to, from, orig-date, message-id,in-reply-to,cc,version
- Health Content Container body shall an instance of a **Multi-part MIME** object
  - RFC 2045, RFC 2046 (and a few others)
- Follow Postel's Comprehensiveness Principle – "conservative sender / liberal receiver" – different conformance specs for each
- **Sender** (composing a new message)
  - **Multipart/mixed** –> text + linear attachments (not hierarchies)
  - **Multipart/signed** and/or **multipart/encrypted** -> optional

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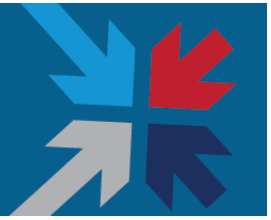
Content Container Specification– V 1.0 Details

- **Receiver** (reading a message sent from outside)
  - Three levels of proposed conformance
  - **Basic processing** – simplest possible message
    - Handle *simple text* & *multipart/mixed* & */signed* & */encrypted*
    - Follow RFC behavior for handling unexpected content
  - **Email processing** – handle typical email-client messages
    - Additionally handle *multipart/alternative* (text/html/richtext)
    - Expected to handle typical email attachments
  - **XDS Metadata processing –** for complex hierarchical data
    - Additionally handle body parts where the main body is /mixed and the additional parts are *base64-encoded, compressed XDM zip files*
    - XDS metadata best-practices still to be decided

Content Packaging Questions

- Some Open Questions
  - Certain transport protocols may operate better with “native” content specification, rather than RFC822
    - IHE/SOAP, XMPP
  - Simple text formatting minimums?
    - Text/plain or text/html or text/richtext?
  - How will we implement /signed and /encrypted?
    - S/MIME at client?
    - automatically added at HISP gateway?
  - XDS Metadata – what about “affinity domain” specific params?
  - Multipart/related – disallowed?
  - List of expected content (mime) types for healthcare

Lunch



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Individual Involvement WG

Individual Involvement Workgroup

- *Purpose is to clarify technology issues and policy implications for individual involvement in direct transport*
- Key May 6th Deliverable: Individual Involvement Guidance to NHIN Direct Work Groups
- Leader: Rich Elmore

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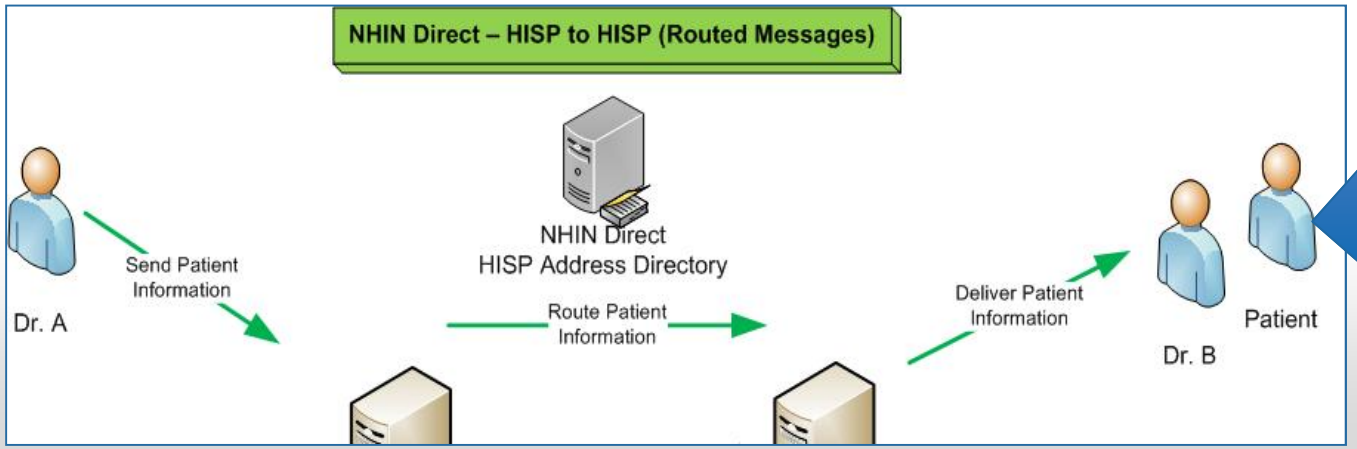
Individual Definition

- "Individual" = Non-provider participants in care

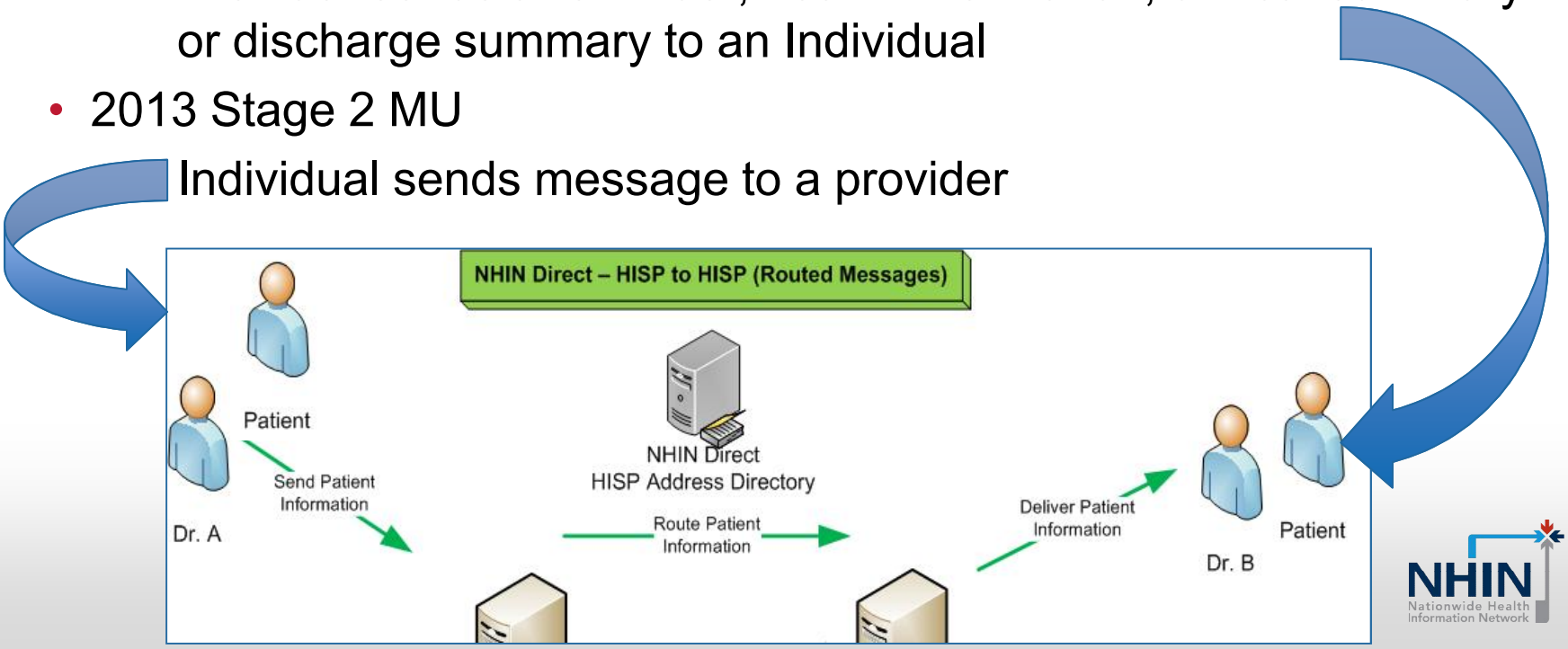
Individual Involvement Workgroup

- "Individual" = Non-provider participants in care
- Scope
  - 2011 Stage 1 MU
    - Provider sends a reminder, health information, clinical summary or discharge summary to an Individual



Individual Involvement Workgroup

- "Individual" = Non-provider participants in care
- Scope
  - 2011 Stage 1 MU
    - Provider sends a reminder, health information, clinical summary or discharge summary to an Individual
  - 2013 Stage 2 MU
    - Individual sends message to a provider



Individual Involvement Workgroup

User Stories

- Confirmed Individual Involvement User Stories (Must Haves)
  - Provider sends patient health information to the patient
  - Hospital sends patient health information to the patient
  - Provider sends a clinical summary of an office visit to the patient
  - Hospital sends a clinical summary at discharge to the patient
  - Provider sends a reminder for preventive or follow-up care to the patient
- Refining and prioritizing:
  - Patient Sends Message to a Provider

Individual Involvement Workgroup

- **The Role of the Patient / Individual**

- An engaged patient is more likely to take steps to maintain and improve her health.
- Standardization of NHIN Direct transport protocols can apply to individuals in communication with their clinicians.
- Individuals who communicate with their clinicians asynchronously and electronically are potentially more engaged at potentially lower costs.

Individual Involvement Workgroup

The Role of the Patient / Individual:

- 2011 Meaningful Use provides for an eligible professional to send a summary of the clinical information or reminder chart to an individual
- However, support for an individual to electronically message her clinician is not included until 2013.

- ***While we respect the need for proven incremental change, we maintain that until the individual is capable of completing the communication circle with her clinician, we have not reached our goal of actively engaging the patient in the comprehensive management of her health.***
- ***Further, we believe that given the standards being established by NHIN Direct, patients may be able, technically, to send electronic messages to their providers prior to 2013.***
- ***Therefore, we must consider the special implications this use case will generate.***

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Individual Involvement Workgroup

The Role of the Patient / Individual: Considerations

- Although the implementation of Individual-to-Provider messaging is technically possible, it raises questions and issues that must be addressed before it is practically feasible. The standards and architecture envisioned through NHIN Direct have not explicitly addressed the cases listed below or may be dependent on yet-to-be-developed policies.

- 1. **Unreliable Identities**
- 2. **Indistinguishable Trust Levels**
- 3. **Clinician Refusal**
- 4. **Patient Expectations**

For the full write-up on this (thanks to Janet Campbell), visit:
http://nhindirect.org/Patient+to+Provider+Issues+and+Implementation

Individual Involvement Workgroup

Guidance to Content & Packaging

- Anticipate self-describing file types will evolve
- Individual “friendly” content descriptions
  - For the bundle
  - For individual attachments

Individual Involvement Workgroup

Meeting individuals "where they are" – assumptions

- Each Individual may have multiple addresses (e.g., for multiple PHR's, multiple e-mails). Each address has its own separate transmission.

- Outside of NHIN Direct:
  - Provider verifies identity and consent before linking to an Individual's address
  - Provider makes the decision that it's appropriate to provide information to this address
  - Provider verifies that PHI is sent only to addresses with adequate authentication/security/logging
  - These target addresses may optionally provide notification services to the Individual of the update via public email – "where they are"

Security and Trust WG

Security & Trust Workgroup

- *Purpose is to provide alternatives and highlight issues relating to security and trust enablement via technology (e.g., certificates and signatures)*
- Key May 6th Deliverable: Security & Trust Spec
- Leader: Jonathan Gershater

Security & Trust Workgroup: Basic Trust Model Keys for Consensus

http://nhindirect.org/Basic+Trust+Model+-+Keys+for+Consensus

- The system must not require a single all-encompassing trust relationship between all participants. Real world evidence suggests that achieving global trust is not practical. Therefore, an individual or organization participating in NHIN Direct must be able to specify the other individuals and/or organizations they are willing to exchange messages with. This configuration must be flexible enough to describe relationships at the address/endpoint, organization and meta-organization levels.
- The system must ensure that messages are disclosed only to the intended recipient.
- The system must ensure that a recipient can reliably identify the source of a message.
- The system must enable trust assertions at either the organization or address/endpoint level. It is a matter of policy and preference whether organizations use a single certificate for all of their addresses, or assign individual certificates for each address.

Security & Trust Workgroup: Basic Trust Model Keys for Consensus

http://nhindirect.org/Basic+Trust+Model+-+Keys+for+Consensus

- The system must enable asymmetry of trust. In order for a message to be sent from endpoint A to endpoint B, A must be configured to send to B and B must be configured to receive from A. The ability to send from A to B must not require the ability to send from B to A.
- All policy must be defined outside of the NHIN Direct technical infrastructure. The system must provide the ability to represent policy using certificate hierarchies, where each address/endpoint has an associated set of certificates. All policy will be inferred from these certificates, including but not limited to identity proofing requirements, system security and privacy practices, and endpoint roles (e.g., provider vs. group vs. patient).
- Individual NHIN Direct users must not be forced to manage PKI artifacts. Real world evidence suggests that forcing key management on individuals will stifle adoption. The system must allow individuals to work with the concepts of addresses/endpoints, organizations, and meta-organizations (e.g., regional a regional HIE).

Security & Trust Workgroup

- *Digital certificates*
- Digital certificates are small electronic files that reside on personal and server computers. The certificates enable unique identification between individual users, organizations or software applications. This unique identifies enables trust so that entities can conduct business and exchange information securely.
- (An analogy: A passport uniquely identifies the bearer and enables trust between governments so that the individual may travel internationally).

Security & Trust Workgroup

- *Issues:*
- *1. Organizational vs Individual certificates:* Would NHIN Direct stipulate that only organizations can issue and trust digital certificates or can certificates be issued and trusted down to the individual level (Physician, nurse etc).? "*inconclusive answer: either or both*"
- *Chain of trust*: The classic x509 model stipulates a hierachical model where all organizations subordinate to a root Certificate Authority, consequently trust each other and will accept each other's certificates. This problem with this model is the management of certificates, issuance and revocation. Other models proposed:
  - *Peer trust*: akin to the PGP model of individually issued and trusted certificates for social purposes.
  - *Health Internet Trust Domain*:one or more 'member' nodes who are implicitly and fully trusted because they were granted membership to the domain by a highly trusted domain, the root Health Internet Certificate Authority. Essentially a flat communal structure.

Security & Trust Workgroup

- *Trust and policy*
- *1. Black-list, white-list and trust revocation:* How does an organization know whether the certificate presented by another organization or individual has been revoked or not? Propose using existing OCSCP/CRL technology.
- *Level of trust depends on message content:* Request for an appointment represents a low level of trust, reporting lab result requires a high level of trust.
- *Policy vs technology*: Policy is a set of procedures, enabled by technology, that dictates which organization/individual trusts another organization individual.

Comprehensive HIE Interoperability WG

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Comprehensive HIE Interoperability Workgroup

- *Purpose is to define how to mix and match NHIN Direct transactions and comprehensive HIE/NHIN specifications and services (patient discovery and information access) capabilities at scale*
- Key May 6th Deliverable: Comprehensive HIE Service Description
- Leader: Vassil Peytchev
- Goals:
  - Define usage similarities and difference between direct and discovery/access capabilities
  - Propose implementation specification of the abstract model using IHE/NHIN transactions – now falls under the IHE Concrete Implementation Subgroup
  - Describe possible intersections between direct and discovery/access capabilities within an HIE and across HIEs
  - Answer the question: What is the best way forward to ensure the collaborative co-existence of the NHIN Direct and NHIN Exchange capabilities?

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Comprehensive HIE Interoperability Workgroup

- Several discussions towards achieving the goals:
  - Distinguishing features of the NHIN Exchange specifications
    - Rich consistent metadata
    - Trust model (authorization framework)
    - The technology to enable comprehensive HIE services (protocols)
  - Where is the intersection between Comprehensive HIE capabilities and NHIN Direct
    - Backbone protocols (HISP to HISP)
    - Edge protocols (Source to HISP and HISP to Destination)
  - End points of NHIN Exchange and NHIN Direct transactions:
    - NHIN Node to NHIN node
    - Source to destination

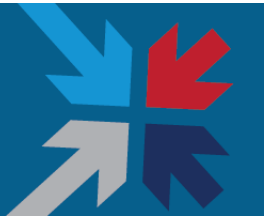
Comprehensive HIE Interoperability Workgroup

- Mapping of the Abstract Model to IHE/NHIN transactions
  - Original draft (on the Wiki)
  - Variations, to be evaluated for concrete implementation:
    - End-to-end push (using XDR)
    - Polling at the source/destination (using XDR/MPQ + extensions)
    - Polling at the source/destination (using XDR/XDM)
  - Transfer to the concrete implementation subgroup

Comprehensive HIE Interoperability Workgroup

- Feedback to other workgroups
  - Main goal – seamless use of both NHIN Direct and NHIN Exchange
  - Trust model – need to bridge the gap between the simplified model for NHIN Direct and the capabilities of NHIN Exchange
  - Concrete implementations and packaging – provide mapping to and from the metadata needed in NHIN Exchange
  - Abstract Model – provide functional requirements for the actors (e.g. mobile sources/destinations, “always-on” HISPs)

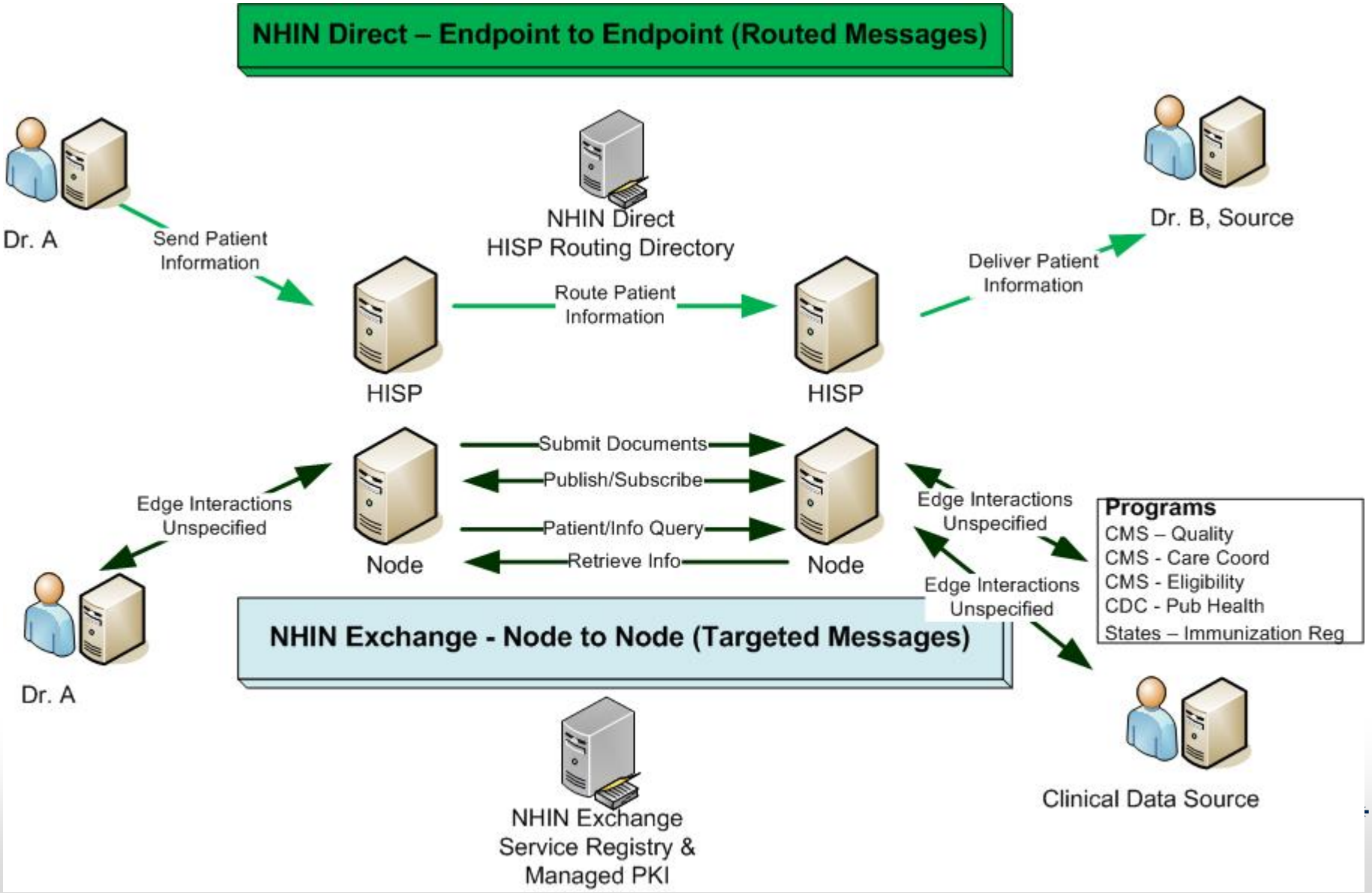
Comprehensive HIE Interoperability Workgroup



- Work to be completed
  - Review the user stories in the context of a comprehensive HIE services
  - Develop a “hybrid model” formalizing the intersections between NHIN Direct and NHIN Exchange
  - Support the IHE concrete implementation sub-group

- Discussion
  - Assumptions about single end-to-end protocol vs. a combination of distinct edge and backbone protocols – how will that affect comprehensive HIE interoperability
  - Other?

Comprehensive HIE Workgroup



Concrete Implementation WG

Concrete Implementation Workgroup

- *Purpose is to recommend one+ high level concrete implementation mapping to the abstract model for further development and use in the pilots.*
- Key May 6th Deliverable: Update
- Leaders: Sean Nolan & Brian Behlendorf

- Topics for today
  - Overview of approach and timeline
  - “Minimum Threshold” requirements for implementation groups
  - Early observations and learning
  - Status updates from implementation groups
  - Discussion

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Approach and Timeline

- Will recommend a single implementation approach for v1, while keeping an eye towards transport evolution over time
- Force demonstration of **technical** and **social** feasibility of different approaches to input requirements
  - Technical = working code
  - Social = community participation
- Four groups have self-formed around:
  - SMTP, REST, IHE/SOAP, XMPP
- Group will recommend a winner at IG teleconference on May 18th
- Had discussed an “initial cull” today, but seems premature

“Minimum Threshold”

- Important because it is our attempt to lay the “ground rules” that we will use as a basis for comparing implementations
- http://nhindirect.org/Concrete+Implementation%3B+Minimum+Threshold+for+Recommendation
- Proposed Requirements
  - Community of Supporters
  - Software “Map”
  - Description of end-user experience for all actors

“Minimum Threshold” – Community of Supporters

A self-identified community of supporters willing and capable of building a reference software implementation in the overall NHIN Direct desired timeframes, and the other artifacts and deliverables along the way.

“Minimum Threshold” – Software “Map”

A software "map" for each implementation. Of the participants in the Abstract Model (plus other actors - a Certificate Authority perhaps, or another sort of directory service), what software does each party need to run in order to fulfill its role in the system?

Described at one layer higher than a specification, this should describe the collection of specific software required for a demonstration, biasing towards production-quality software.

For functions that are mandatory to fulfill the User Stories, the map must point to software licensed under an Open Source license that allows for integration into proprietarily-licensed software, so to accelerate adoption.

“Minimum Threshold” – End-user Experiences

*For all actors in the system, a description of the end-user experience sufficient to author a user interface **OR** a similarly Open Source licensed example application that provides the desired end-user interface.*

Early observations and learning

- Code is a great way to resolve ambiguity!
- Folks are moving forward with an assumption of MIME content
- We are quickly bumping up against S&T issues that need resolution

Status Updates

- **REST**
  - http://nhindirect.org/REST+Implementation+Development+Team
  - VisionShare, Google, CGC, MedPlus / Quest Diagnostics
- **SMTP**
  - http://nhindirect.org/SMTP+Implementation+Development+Team
  - Cerner, Microsoft
- **IHE / SOAP**
  - http://nhindirect.org/IHE+Implementation+Development+Team
  - GE, Epic, MedAllies, Redwood MedNet
- **XMPP**
  - http://nhindirect.org/XMPP+Implementation+Development+Team
  - Harris Corporation, Redwood MedNet

Implementation Geographies WG

Implementation Geographies Workgroup

- *Purpose is to plan for early implementations demonstrating real-world information exchange following existing care delivery patterns*
- Key May 6th Deliverable: Update
- Leader: Paul Tuten
- Deliverables:
  - Finalized set of key geographies for early real-world implementations
  - Template operational plan identifying stakeholders, success criteria, and project considerations
- Updates
  - DRAFT early list of potential geographies: http://nhindirect.org/Potential+Implementation+Geographies
  - DRAFT early list of operational considerations
    - http://nhindirect.org/Implementation+Operational+Plan

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Wrap Up & Structured Discussion