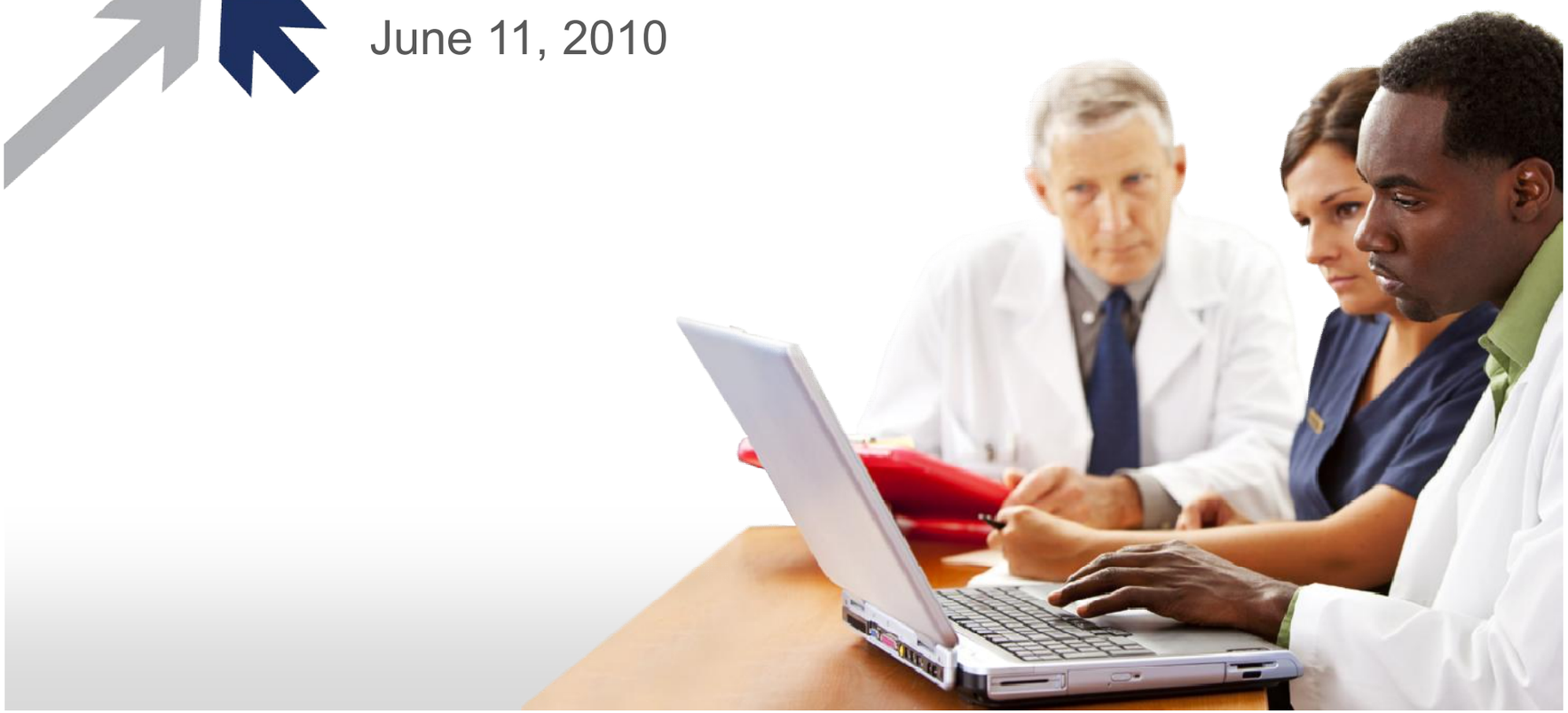
NHIN Direct Implementation Group
Face to Face Meeting

June 11, 2010



Welcome and Agenda Overview

Agenda for June 11th

Welcome	Arien Malec	15 min
Security & Trust WG Update	Brian Behlendorf	35 min
Concrete Implementation Team Presentations on Security & Trust		40 min
Comprehensive HIE WG Update	Vassil Peytchev	35 min
Concrete Implementation Team Presentations on Comprehensive HIE		40 min
Lunch		70 min
Concrete Implementation Discussion and Decision		90 min
Overview of Next Phase and Implementation Geographies WG Update	Arien Malec and Paul Tuten	75 min
Wrap Up	Arien Malec	15 min

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Meeting Rules

- Schedule:
  - No breaks, bio-breaks as needed
- Roles:
  - Arien and Brian will facilitate
  - Jackie will take notes
  - Rich will play timekeeper & keep track of questions
- Questions:
  - *Remote:* Use Live Meeting Q&A function to ask questions
  - *Local:* Raise hand and Rich 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
- 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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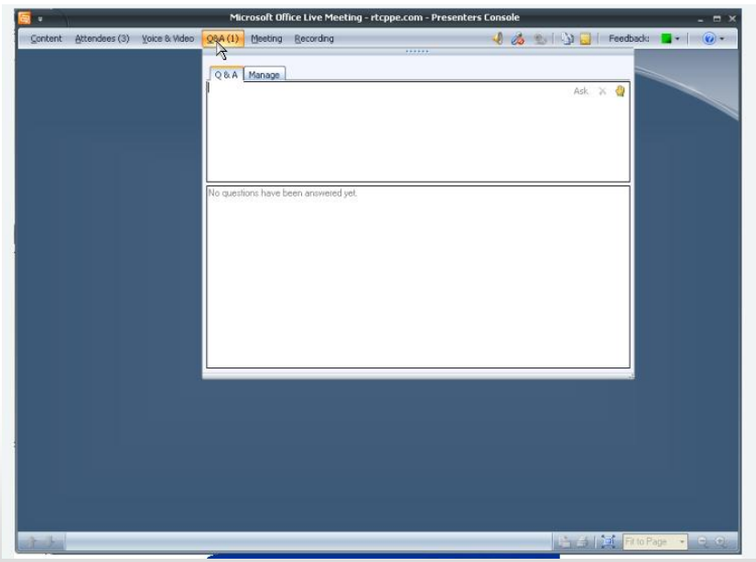
Review of Participation

- Use the Q&A text box function in the web conference to ask a question, or to signal an intent to speak
- **To type a question**, please type questions into the Q&A text box and click Ask
- **To vocalize a question**, please use the “raise your hand” function found in the upper right hand corner: 



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Decisional Style: Pragmatic Consensus

- Each organization will actively state agreement/disagreement with the proposal:
  - Actively support
  - Willing to support
  - Veto (with suggestions)
- If all votes are for active or willing support, the group has reached consensus
- If there are one or more vetoes, the group will proceed by identifying and addressing any concerns
  - Reasonable vetoes should encourage us to fix any underlying issues
  - Vetoes must be accompanied by concrete suggestions for fixes accommodating known interests
- If we truly can't reach consensus, we will adopt the approach that lets the most participants make progress – this should be a rare to non-existent recourse

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Rules of the Road

- Every team gets to use their full presentation time however they'd like, but are welcome to use less than that if they run out of material and there are no further questions. Teams should leave plenty of time for questions, but questions should be held until the team is ready. Keep questions and answers concise.
- Leave the marketing speak at home. We aren't competing vendors pitching to win a business contract; we're trying to find a solution everyone can get behind.
- Be direct - if you disagree on technical or mission merits, say so openly, directly, and without rancor.
- Be charitable; assume the best of intentions and remember that many gaps in functionality or approach can be addressed as we go on.
- It is perfectly alright to suggest that any missing functionality is a "simple" matter to address; but if you do, be prepared to volunteer to make it so.

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Security & Trust WG Update

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 June 10th Deliverable: Security & Trust Specification
- Leader: Sean Nolan

- Requirements have been agreed upon by the workgroup and are ready for a full implementation group consensus vote. http://nhindirect.org/S%26T+Consensus+Proposal+v3

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Structure of Requirements (v3.4)

0. Intent: Policy context behind NHIN Direct

1. Purpose: What we are recommending and what we are not

2. Protocol Requirements: What the implementations must support

3. Implications: Key policy issues impacted by our recommendations

4. Related Links

"NHIN Direct implementations will, when deployed in conjunction with externally-defined policies, enable the secure exchange of PHI-containing messages between authorized participants."

"If two NHIN Direct users trust each other in the real world, and can mutually agree on standards and policies for handling PHI, they will be able to configure a NHIN Direct implementation to securely send messages containing PHI between them."

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Purpose (1)

1.1. "Message handling policy" can be thought of similarly to the policies of a delivery agent like Federal Express that assures its employees won't open and read your packages, they will not leave them at the bus station, and they will take care that they are delivered to the person on the address label.

1.2. This workgroup is defining the functional requirements of an NHIN Direct protocol that will support the message handling policy recommendations of the HIT Policy Committee and regulatory mandates of ONC. Because these policies have not been finalized at this time, and because they are certain to evolve in the future, the workgroup is attempting to define those protocol requirements in a way that provides appropriate flexibility and "future-proofing," balanced against the requirement of simplicity critical to ensure real-world adoption.

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Purpose (2)

1.3. We also foresee that the HIT Policy Committee and ONC will not be in a position to define a single message handling policy acceptable to every constituent expected to participate in NHIN Direct messaging networks. For example, state law may already add additional requirements for providers in their jurisdiction, or some individual providers may have their own legitimate preferences. Therefore our requirements will include the ability for participants to configure the system to define their exchange partners, at varying levels of granularity as described later.

1.4. It is important to review these requirements in the context of the specific goals of NHIN Direct, which include an important policy simplification: the sender of a message is responsible for ensuring that any disclosure is appropriate and complies with all regulatory and PHI policy obligations before sending the message. Our recommendations exist solely to enable a technical environment in which participants can make these disclosures in a way that satisfies their message handling obligations. That is to simply say, messages go where they are meant to, are not altered during transmission, and are not seen by those they are not intended for.

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Protocol Requirements (1)

2.1 Use of x.509 Certificates. The NHIN Direct protocol relies on agreement that possession of the private key of an x.509 certificate with a particular subject assures compliance of the bearer with a set of arbitrary policies as defined by the issuing authority of the certificate. For example, Verisign assures that bearers of their "extended validation" certificates have been validated according to their official "Certification Practice Statement." Certificates can be used in many ways, but NHIN Direct relies on the **embedded subject** and **issuing chain** as indicated in the following points. Specific implementations may choose to go beyond these basic requirements.

2.2 Certificate Anchor Configuration. Implementations must allow configuration of one or more public certificates representing "anchors" that implement agreed-to message handing policies. Implementations should allow anchors for sending messages to be distinct from those for receiving messages.

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Protocol Requirements (2)

2.3 Certificate Granularity. Implementations should allow these configurations to be unique per-address in addition to per-health-domain. This will ease integration for participants with an existing PKI infrastructure, and provides a path to more fine-grained assurance for future use cases. Implementations must be able to accept messages identified per-address or per-health-domain per 2.5.

2.4 Revocation. When possible, implementations must frequently check the validity of configured or cached certificates through standard means. The definition of "frequently" should be defined by external policy.

2.5 Sender identification. NHIN Direct messages must be reliably linked to the public certificates possessed by the sender, through standard digital signatures or other means that match the certificate subject to the sender's address or health domain. Implementations must reject messages that are not linked to valid, non-expired, non-revoked public certificates inheriting up to a configured Anchor certificate per 2.2.

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Protocol Requirements (3)

2.6 Encryption. NHIN Direct messages sent over unsecured channels must be protected by standard encryption techniques using key material from the recipient's valid, non-expired, non-revoked public certificate inheriting up to a configured Anchor certificate per 2.2. Normally this will mean symmetric encryption with key exchange encrypted with PKI. Implementations must also be able to ensure that source and destination endpoint addresses used for routing purposes are not disclosed in transit.

2.7 Ease of use. Implementations should attempt to ease the complexity of certificate management for end users and organizations. While this is not a hard protocol requirement, it is important to be aware that many systems leveraging certificate technology have failed to achieve adoption due to complexity of PKI management, so efforts here will be a key driver of success or failure for NHIN Direct. If possible implementations should enable NHIN Direct users to think in terms of "who do I trust" rather than "what certificates to I import". Implementations should also ensure that users can leverage existing credential management programs; for example, ICAM in the federal space (see related links).

2.8 Integrity. NHIN Direct messages must be protected using standard hashing techniques acceptable in current regulation.

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Implications (1)

3.1. The workgroup has attempted to, as much as possible, decouple specific policies from technology. It is our hope that the NHIN Direct protocols can be used in many policy environments in addition to that defined by the HIT Policy Committee and ONC. For example, a foreign government might choose to deploy NHIN Direct implementations, but require participants to adhere to their own unique policies.

3.2. This goal is facilitated by using possession of x.509 certificate artifacts to "proxy" for policy adherence. In this model, a policy-enforcing body is responsible for issuing certificates only to those they have confirmed can and will adhere to their requirements. These requirements may be virtually anything. A few examples: undergo an annual HIPAA compliance audit, use biometric authentication for system login, have a valid license to practice medicine in one of the 50 states, and so on.

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Implications (2)

3.3. We have also tried to ensure that a particular NHIN Direct participant can use a single NHIN Direct implementation to exchange messages with distinct policy-defined groups. For example, a provider in the Northwest may want to use their NHIN Direct "address" to communicate both with US and Canadian colleagues, even though the US and Canadian authorities have different policy requirements. If that provider satisfies both sets of requirements, and if it is legal for them to do so, they should be able to exchange messages with providers in both countries. They would represent this in NHIN Direct by possessing two certificates --- one issued by the US policy-enforcing body, and one issued by the Canadians.

3.4. All this notwithstanding, we expect the HIT Policy Committee and ONC to issue guidance for a base level of policy that will enable participating trust anchors to include the broadest-possible set of US-based providers and patients. The more inclusive the anchors, the more likely it is for any two participants to have the ability to exchange messages. This is critical work.

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Implications (3)

3.5. Of particular interest for policy committees will be what level of "identity assurance" is required for authentication of participants logging into NHIN Direct messaging systems. It is important to note that this decision is external to the NHIN Direct protocols described here, but extensive work has been done in the Federal ICAM trust framework and the private-sector Kantara Initiative; these are important initiatives for the committee to understand.

3.6. We do not presume to say what policies are the right ones to achieve the right tradeoff between policy protection and breadth of participation. Private organizations are currently making local policy decisions in accordance with existing law, and at a national level that is for ONC to specify with the advice of the HIT Policy Committee in the spirit of the initial NHIN Workgroup recommendations. Rather, our intent is to ensure that whatever those outcomes may be, they can be instantiated easily and quickly using NHIN Direct protocols.

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Concrete Implementation Team

Presentations on Security & Trust

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Comprehensive HIE WG Update

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Comprehensive HIE Interoperability Workgroup

- Purpose is to define how to mix and match direct transactions and Comprehensive HIE/NHIN specifications and services (patient discovery and information access) capabilities at scale
- Key June 10th Deliverable: Comprehensive HIE Service Description
- Leader: Vassil Peytchev
- To date WG has:
  - Created an mapping of the Abstract Model to IHE/NHIN transactions:
    - http://nhindirect.org/IHE+Implementation
  - Articulated illustrative comprehensive HIE scenarios
- The WG is currently working on:
  - Providing clear definitions for comprehensive HIE
  - Discussing interoperability between different exchange patterns

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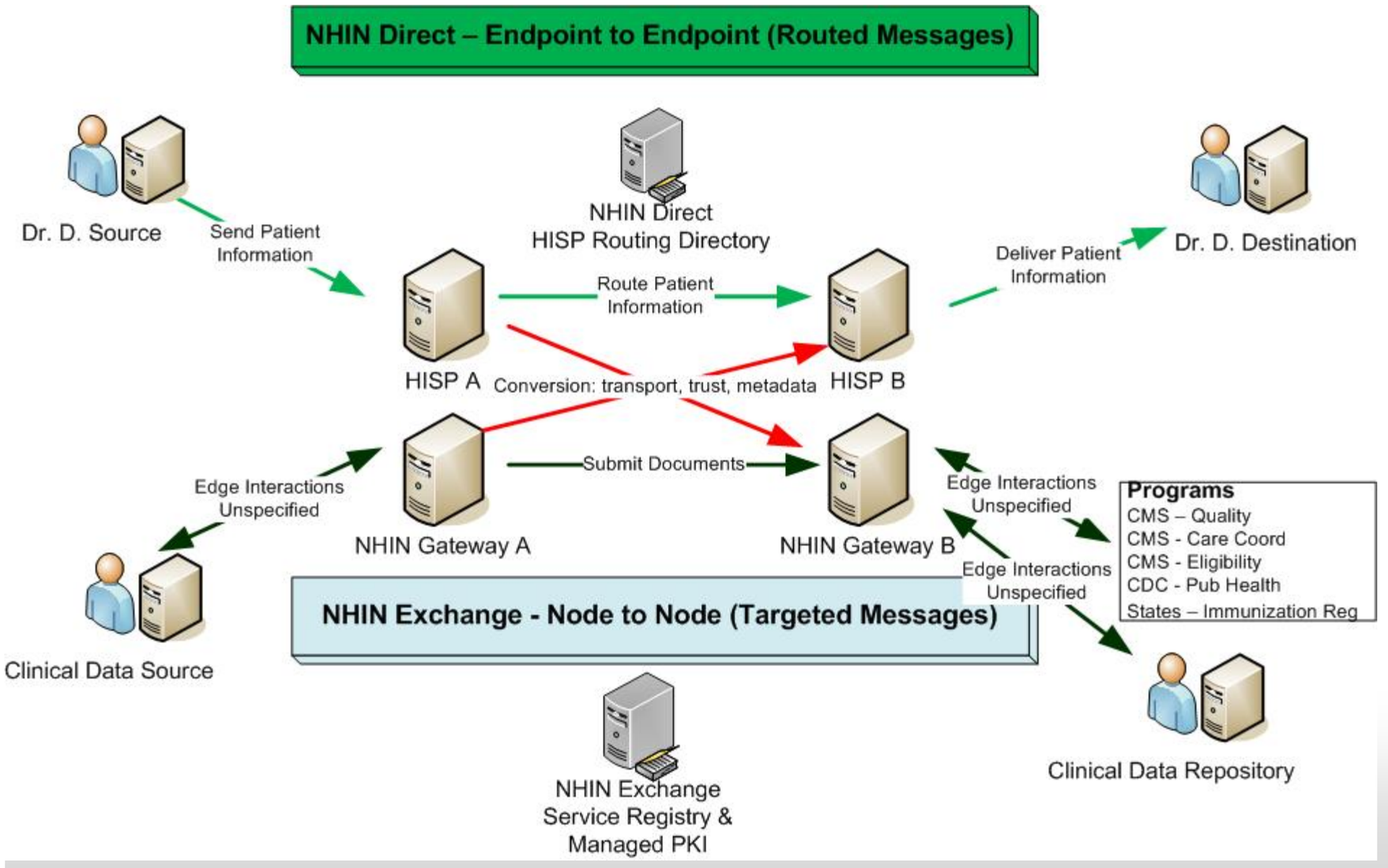
Comprehensive HIE Interoperability Workgroup



Definitions

- Full Capabilities HIO
  - services to locate and share clinical information
  - satisfies the core user stories of NHIN Direct
  - supports services described by the current NHIN protocols
- Partial Capabilities HIO
  - provides its members with MPI and data location capabilities
  - does not provide capabilities to satisfy the core user stories of NHIN Direct
  - does not support the current NHIN protocols for locating and sharing clinical information outside the HIO
- Belonging to a Full Capabilities HIO
  - single provider organization can be an HIO
  - the HIO can be a combination of provider organizations and providers of varying sizes

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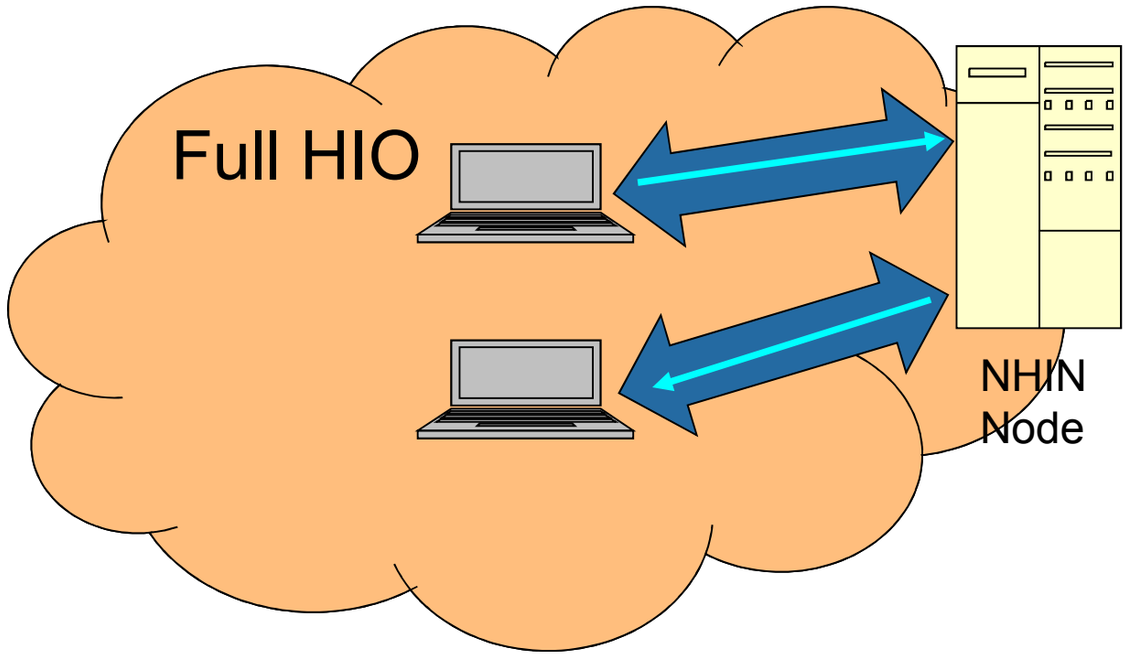
Full Capabilities HIO

- Provides the capability to use the services defined by NHIN Protocols



- Intra-HIO capabilities to send and receive routed transactions, satisfying NHIN Direct Use Cases

Karen's Cross reviewed:

- Step Up Transform: NHIN Direct Source to Destination within a Comprehensive HIE
  - Conversion of transport protocol probably straightforward
  - Metadata needs to be created to support Comprehensive HIE needs
  - Trust an open question
- Step Down Transform: Source within a Comprehensive HIE to NHIN Direct Destination
  - Conversion of transport protocol probably straightforward
  - Metadata can be discarded or packaged in an XDM zip
  - Trust an open question

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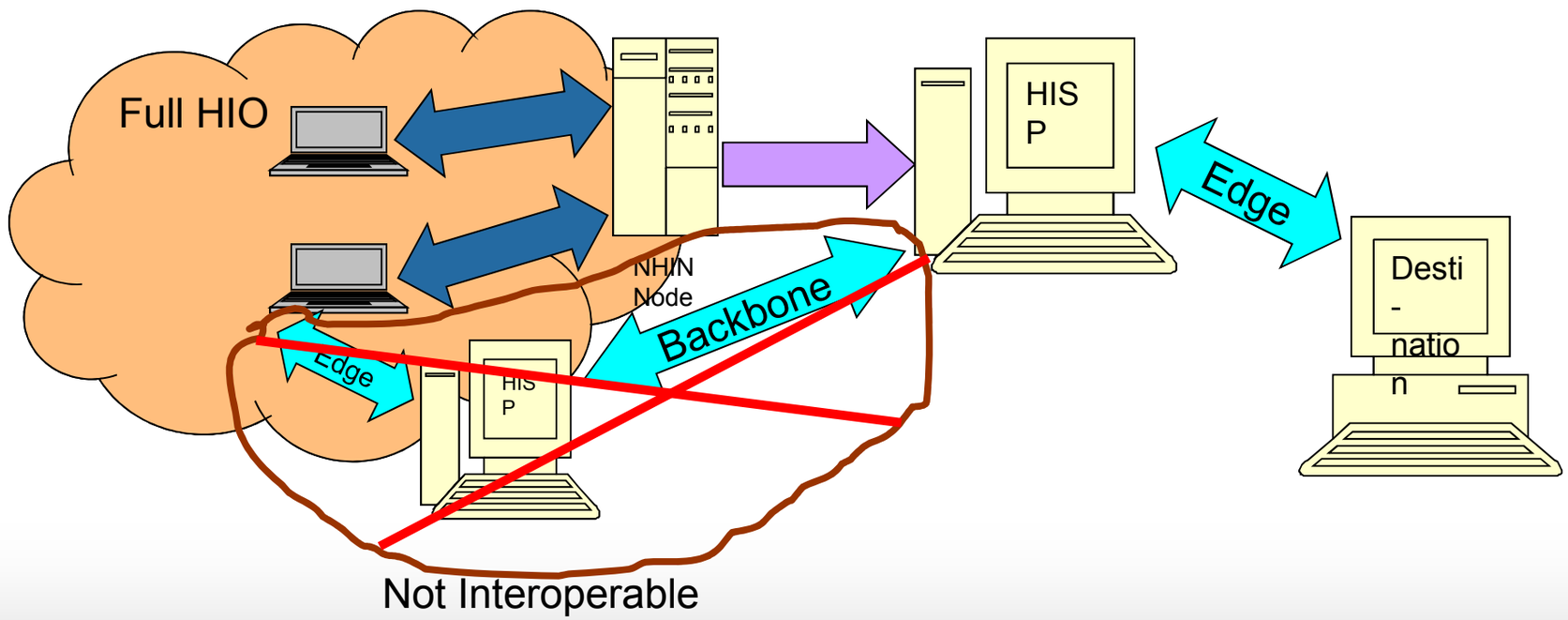
Conversion points

- Full Capabilities HIO to Destination without a Full Capabilities HIO
- No Conversion ≡ No Interoperability

– NHIN Direct Protocols – Conversion is involved



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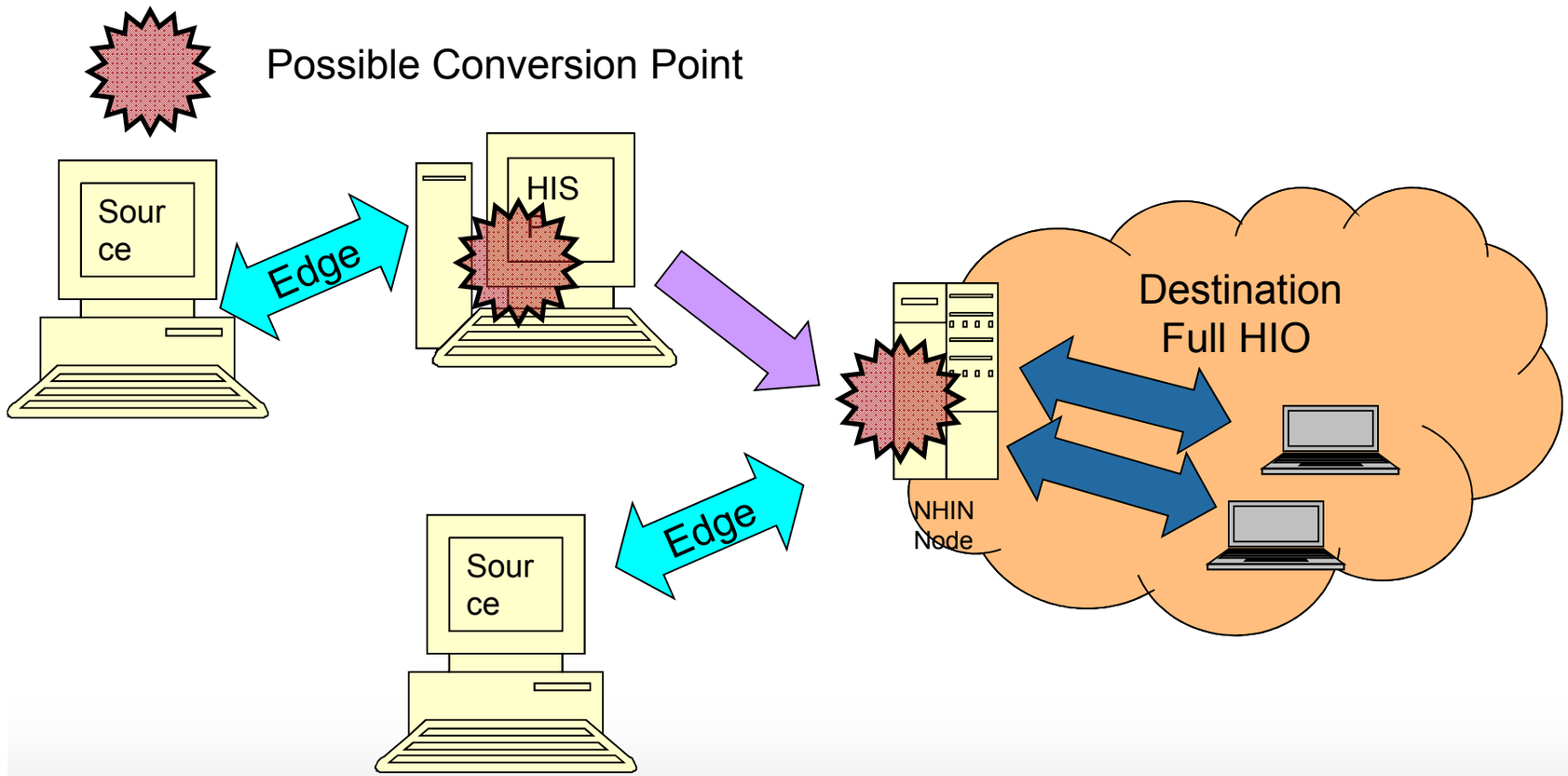
Step Up: Conversion points

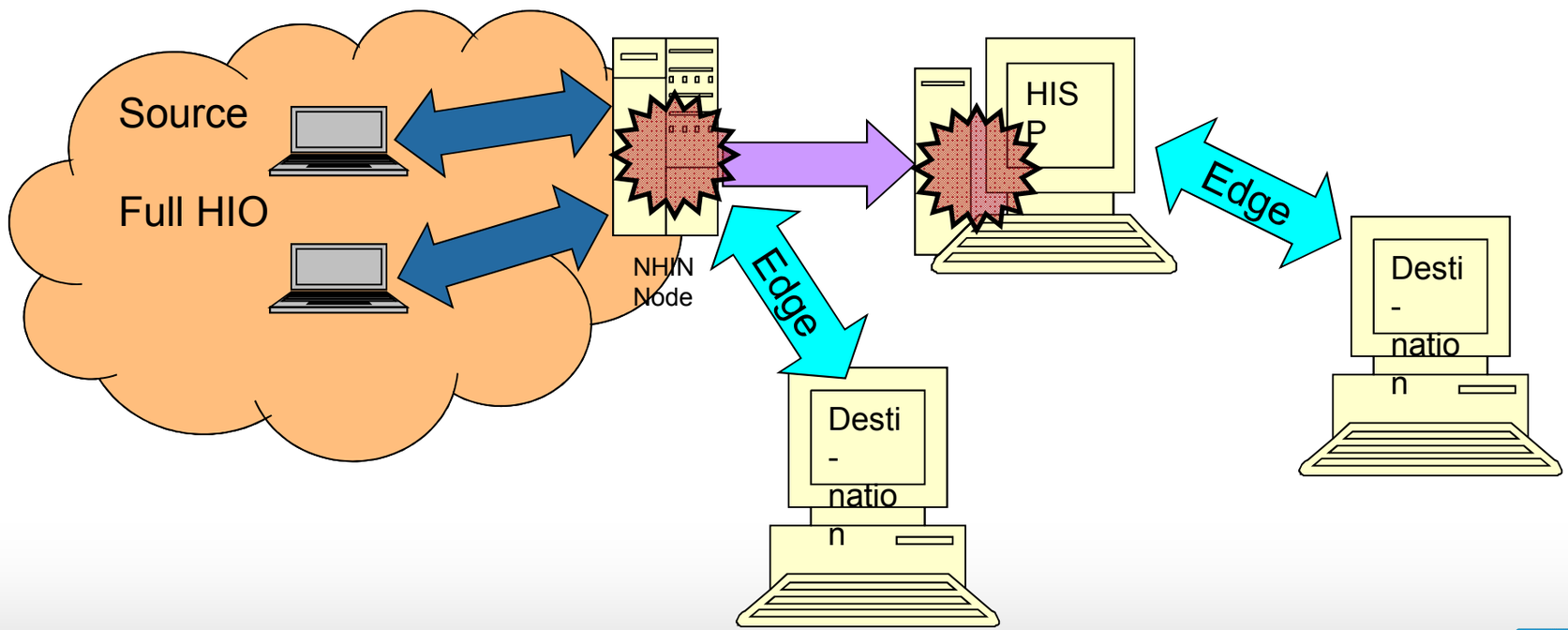
» Where conversion may occur



Step Down: Conversion points

- Where conversion may occur

Possible Conversion Point



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Concrete Implementation Team

Presentations on Comprehensive HIE

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Lunch Break

(please return by 1:00)

Concrete Implementation Discussion and Decision

Decisional Style: Pragmatic Consensus

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NHIN Direct: Next Phase

Review of Deliverables for July

New Deliverables:

- **Reference Implementations:** Provide a high quality open source reference implementation of the recommended specification
- **Reference Implementation Guides:** Provide reference implementation guides for edge systems and routing systems (including sample code, testing and conformance documentation, legal and policy documentation, etc...)
- **Conformance Testing Scripts and Services:** Provide conformance UATs and an automated conformance service for each concrete implementation
- **Key Implementation Geographies:** The Implementation Geographies WG will finalize a set of key geographies for early real-world implementation
- **Interaction Model/Service Orchestration Model:** The Abstract Model WG and the Concrete Implementation WG will provide Interaction Model and Service Orchestration Model

Review of Deliverables for July

Updates to Existing Deliverables:

- **HISP-HISP (Backbone) and Source/Destination-HISP (Edge)Specifications:** The Concrete Implementation WG will provide specifications for HISP-HISP (backbone) and Source/Destination-HISP
- **Abstract Model:** The Abstract Model WG will provide an updated diagram and specification of an Abstract Model that all WGs can use to determine core architectural components, assumptions and terminology
- **Key User Stories**: The User Story WG will provide a consistent, vetted 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
- **Individual Involvement Recommendations:** The Individual Involvement WG will provide recommendations of how individuals can participate in NHIN Direct Project Services
- **Security & Trust Specifications:** The Security & Trust WG will provide alternatives and issue relating to security and trust enablement via technology

Implementation Geographies WG Update

Implementation Geographies Workgroup

- Built consensus on an operating model for the workgroup

- Responsibilities of the overall workgroup:
  - Define the min. requirements for participation as a pilot geography
  - Solicit participation and identify those pilot geographies
  - Facilitate the success of the pilot projects
  - Monitor the status of the ongoing pilots
  - Report on outcomes, success measures, and lessons learned

- For individual pilots:
  - Each pilot represents a sub-workgroup / team
  - Voluntary, self-organizing, and self-funding projects
  - Designated leader (representing pilot at Imp Geo workgroup level)
  - Tracking of status / progress on wiki and related tools

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Implementation Geographies Workgroup

- Built consensus around minimum requirements for participation as a pilot geography

- The list of ‘musts’ for participation:
  - Demonstrate health information exchange (defined as one or more NHIN Direct user stories) using NHIN Direct compliant standards, services, and policies
  - Include a diverse set of providers and stakeholders, ideally (strongly preferred to be) on disparate technology platforms (from more than one source, e.g., vendor, home-grown, etc.)
  - Include small (<5 physician) practices

- The list of ‘shoulds/coulds’ for participation:
  - Include provider(s) serving either rural and/or underserved populations
  - Include provider to HIE exchange
  - Include support for provider-to-patient exchange
  - Include cross-state information exchange

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Implementation Geographies Workgroup

- Next steps
  - Finalize and agree to timeline for pilots
  - Continue recruitment and finalize list of identified pilots
  - Provide operational guidelines/plans to accelerate progress
  - Identify needs and help to fill gaps, if/as required

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Wrap Up