CORE Phase II Connectivity Rule: Narrowing the Communication Gap in Healthcare Data Exchange

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CAQH/CORE Presentation to the HITSP Foundations Information Interchange Committee
Monday, July 14th, 2008 2:00 pm – 3:30 pm ET

Discussion Topics

Overview CAQH and CORE

Connectivity Today
- Challenges
- General Scope and Purpose of CORE's Connectivity Phases
  - Phase I
  - Phase II

Phase I Rule Details
- Overview
- Benefits
- Challenges

Phase II Rule Details
- Rationale
- Phase II Connectivity Rule Roadmap: Research conducted and assessment process
- Phase II Specific Rules

Coordinating with Industry-Wide Initiatives

CORE Phase III Connectivity Priorities

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An Introduction to CAQH

CAQH, an unprecedented nonprofit alliance of health plans and trade associations, is a catalyst for industry collaboration on initiatives that simplify healthcare administration for health plans and providers, resulting in a better care experience for patients and caregivers.

CAQH solutions:

- Help promote quality interactions between plans, providers and other stakeholders
- Reduce costs and frustrations associated with healthcare administration
- Facilitate administrative healthcare information exchange
- Encourage administrative and clinical data integration

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Committee on Operating Rules
for Information Exchange

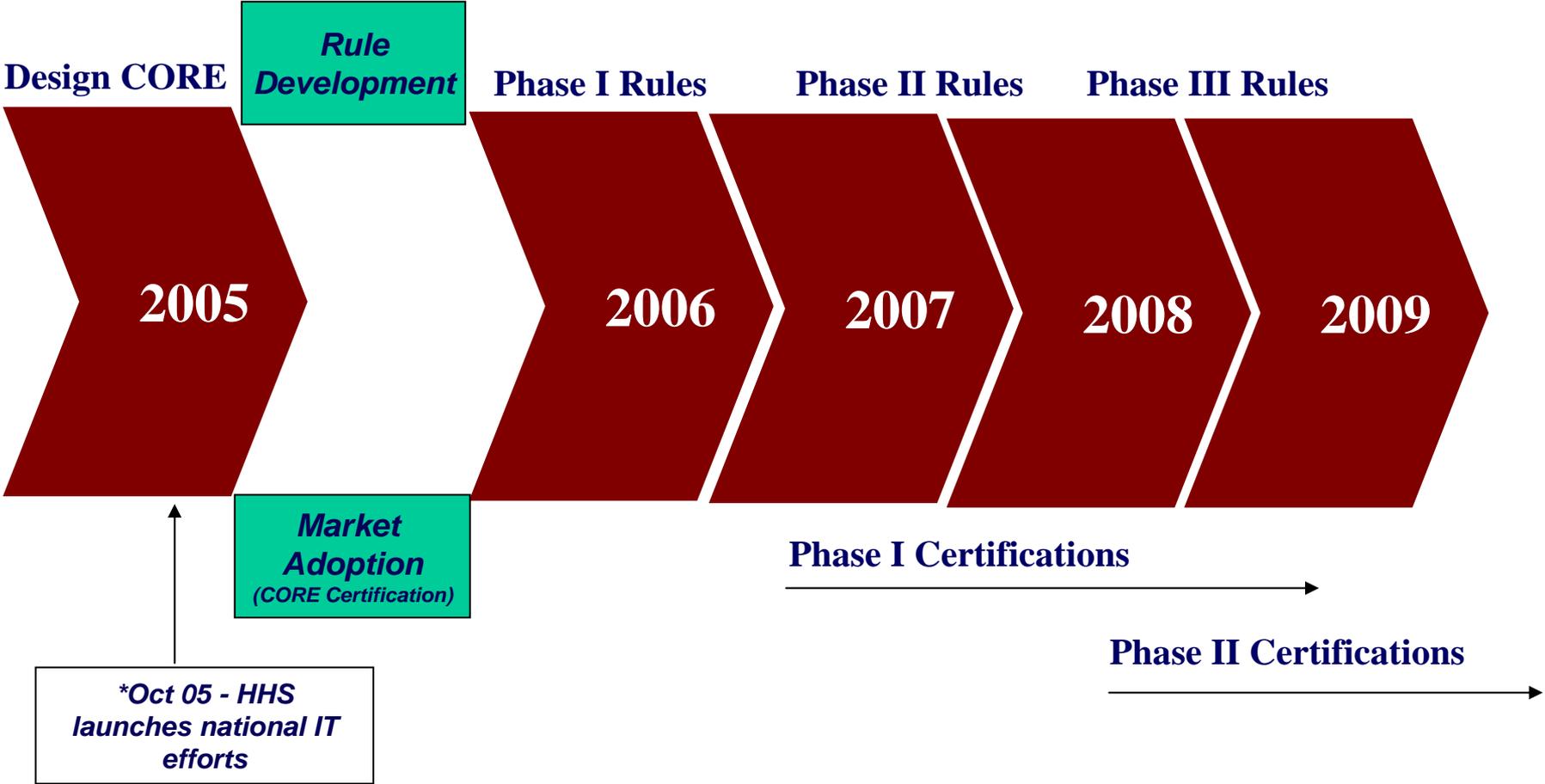simplifying healthcare administration

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CORE Mission

To build consensus among the essential healthcare industry stakeholders on a set of operating rules that facilitate administrative interoperability between health plans and providers

- Build on any applicable HIPAA transaction requirements or other appropriate standards such as HTTPS
- Enable providers to submit transactions from the system of their choice and quickly receive a standardized response from any participating stakeholder
- Enable stakeholders to implement CORE phases as their systems allow
- Facilitate stakeholder commitment to and compliance with CORE's long-term vision
- Facilitate administrative and clinical data integration

Key things CORE will not do:

- Build a database
- Replicate the work being done by standard setting bodies like X12 or HL7

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Phased Approach

Design CORE	Rule Development	Phase I Rules	Phase II Rules	Phase III Rules
2005		**2006**	**2007**	**2008**	**2009**

Market Adoption
(CORE Certification)

Phase I Certifications

Phase II Certifications

*Oct 05 - HHS launches national IT efforts

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Current Participants

- CORE participants maintain eligibility/benefits data for over 130 million lives, or more than 75 percent of the commercially insured plus Medicare and state-based Medicaid beneficiaries.

- Over 100 organizations representing all aspects of the industry:
  - 19 health plans
  - 11 providers and 5 provider associations
  - 19 regional entities/RHIOS/standard setting bodies/other associations
  - 39 vendors (clearinghouses and PMS)
  - 4 others (consulting companies, banks)
  - 7 government entities, including:
    - Centers for Medicare and Medicaid Services
    - Louisiana Medicaid – Unisys
    - US Department of Veteran Affairs
    - Minnesota Dept. of Human Services

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CORE Certification

- CORE certification is voluntary

- Binding "Pledge".
  - By signing Pledge, CORE entities agree to adopt, implement and comply with Phase I and/or II eligibility and benefits rules as they apply to each type of stakeholder business
  - The Pledge will be central to developing trust that all sides will meet expectations

- Recognizes entities that have met the established operating rules requirements

- Entities that create, transmit or use eligibility data in daily business required to submit to third-party testing (within 180 days of signing pledge); if they are compliant, they receive seal as a CORE-certified health plan, vendor (product specific), clearinghouse or provider

- *CORE-certification is required for each phase of CORE*

- Entities that do not create, transmit or send – sign Pledge, receive CORE Endorser Seal

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Certification Testing

- Based on CORE phase-specific Test Suite
  - For each rule there are standard conformance requirements by stakeholder
  - Suite outlines scenarios and stakeholder-specific test scripts by rule
  - Not testing for HIPAA compliance, only CORE operating rules; however, entities must attest that, to the best of their knowledge, they are HIPAA compliant

- CORE testing is not exhaustive, (e.g. does not include production data or volume capacity testing)

- Testing conducted by CORE-authorized certification testing entities

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Overview of CORE Requirements Phase

Transaction Type and Standard Data Content		Phase I*		Phase II*
Eligibility/ Benefits	Static *Patient Financial Responsibility,* e.g. co-pay, base deductible	X		X
	Remaining *Patient Financial Responsibility, e.g,* remaining deductible for benefit plan and 40+ service types			X
	Data to Support Financials, e.g. dates, in/out of network differences	X		X
	Use of transaction under "Basic Level" Infrastructure/Policy Requirements	X		X
	Use of transaction under "Enhanced 1" Infrastructure/Policy Requirements			X
Claims Status	Use of transaction under "Basic Level" Infrastructure/Policy Requirements			X
Infrastructure/Policy Requirements to Help Data Flow / Gain Provider Use				

Basic Level	• Policy requirements: Must offer CORE-certified capabilities to ALL trading partners
	• Infrastructure requirements:
	  ❑ Real-time: 20-seconds AND batch turn around requirements
	  ❑ System availability: 86%
	  ❑ Connectivity: Internet connection with basic HTTP – certified entity uses own specifications, e.g. SOAP with WSDL
	  ❑ Standard acknowledgements for batch and real-time, e.g. similar to fax machine acknowledgement
	  ❑ Standard Companion Guide *Format and flow*
		X		X

Enhanced 1	"Basic Level", plus, additional Infrastructure requirements:
	  ❑ Patient identification rules
	    ❑Standard error codes
	    ❑Normalizing names
	  ❑ Connectivity: Must offer two existing envelope standards using CORE-approved specifications, e.g. allows for direct connect, PHR transfers
				X

Note

*There are over 35 entities already CORE Phase I certified

*In July, CORE expects to announce the Phase II rules and the entities committed to Phase II certification

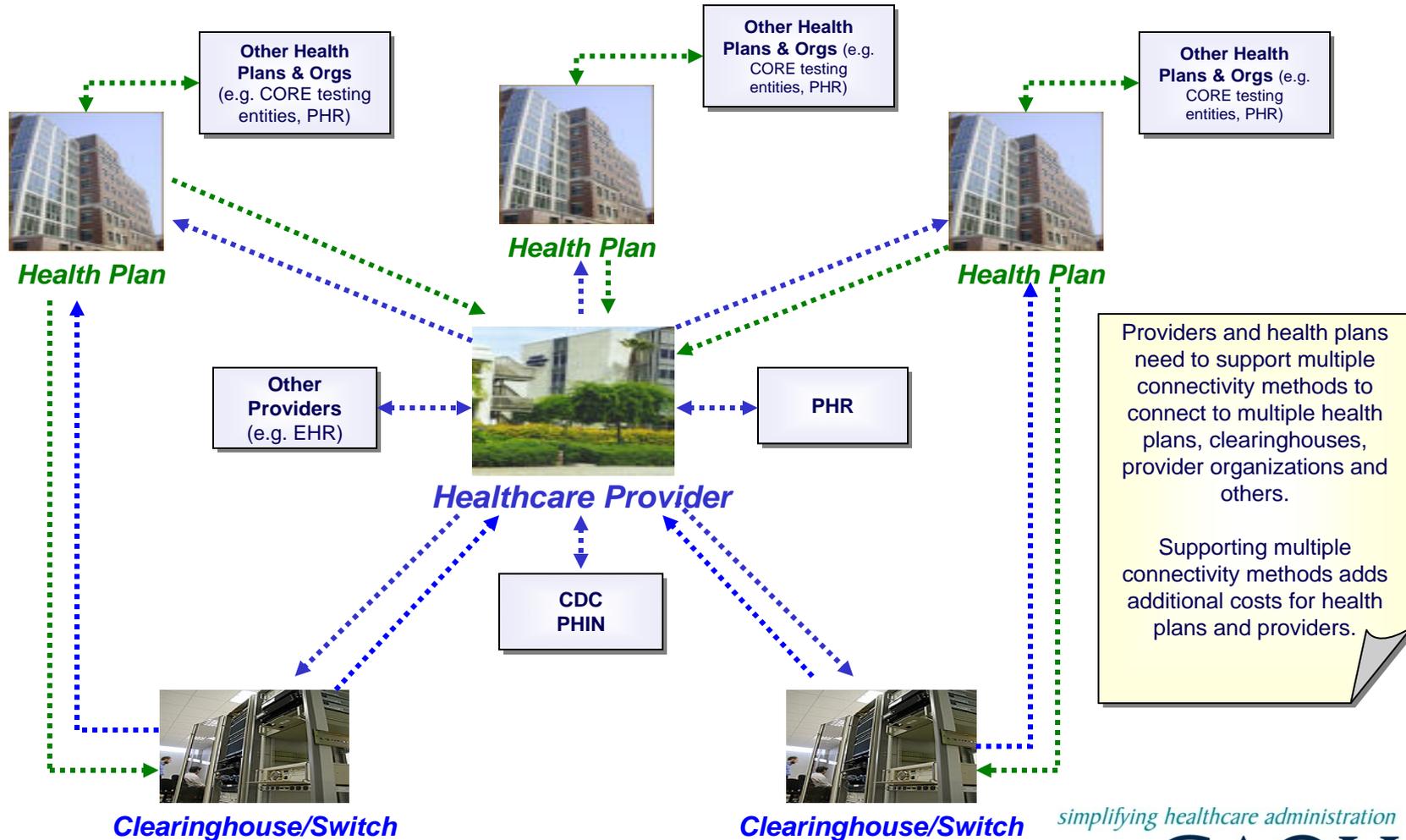* CORE-certification is for health plans, vendors, clearinghouses and large providers

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Connectivity Today

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Challenges of Healthcare Connectivity Today

Currently, multiple connectivity methods are needed across the industry…

Other Health Plans & Orgs (e.g. CORE testing entities, PHR)

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Health Plan

Health Plan

Health Plan

Other Providers (e.g. EHR)

PHR

Healthcare Provider

CDC PHIN

Providers and health plans need to support multiple connectivity methods to connect to multiple health plans, clearinghouses, provider organizations and others.

Supporting multiple connectivity methods adds additional costs for health plans and providers.

Clearinghouse/Switch

Clearinghouse/Switch

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Scope and Purpose of CORE Connectivity Phases

Phase I Highlights

- **Decision**: Connectivity is the foundation for electronic transactions and therefore CORE Phase I needs to address the process to communicate, transport, and route inquiries and responses between trading partners
  - **Benefit**: Supports healthcare movement towards at least one common, affordable connectivity platform
  - **Challenge**: Must incorporate appropriate security standards to ensure secure, reliable messaging, including authentication, non-repudiation of both origination and receipt, and message payload confidentiality.
- **Decision**: Given market implementation is one of CORE's key goals, feasibility must be a top priority as it helps to drive adoption
  - **Benefit**: Helps maintain momentum toward adoption of standard requirements.
  - **Challenge**: A less definitive rule will result in varied implementation
- **Conclusion**: CORE connectivity-specific operating rules, via a phased approach, help maintain momentum and incremental convergence on a common foundation for electronic data exchange

- **CORE Phase I Connectivity**
  - Begin movement and education in the arena
  - Established common transport protocol (HTTP/S over public Internet) and basic metadata
  - Offer a Safe Harbor (rule is supported by all CORE-certified entities for any trading partner)
  - Create an incremental "step" toward interoperability

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Scope and Purpose of CORE Connectivity Phases (cont'd)
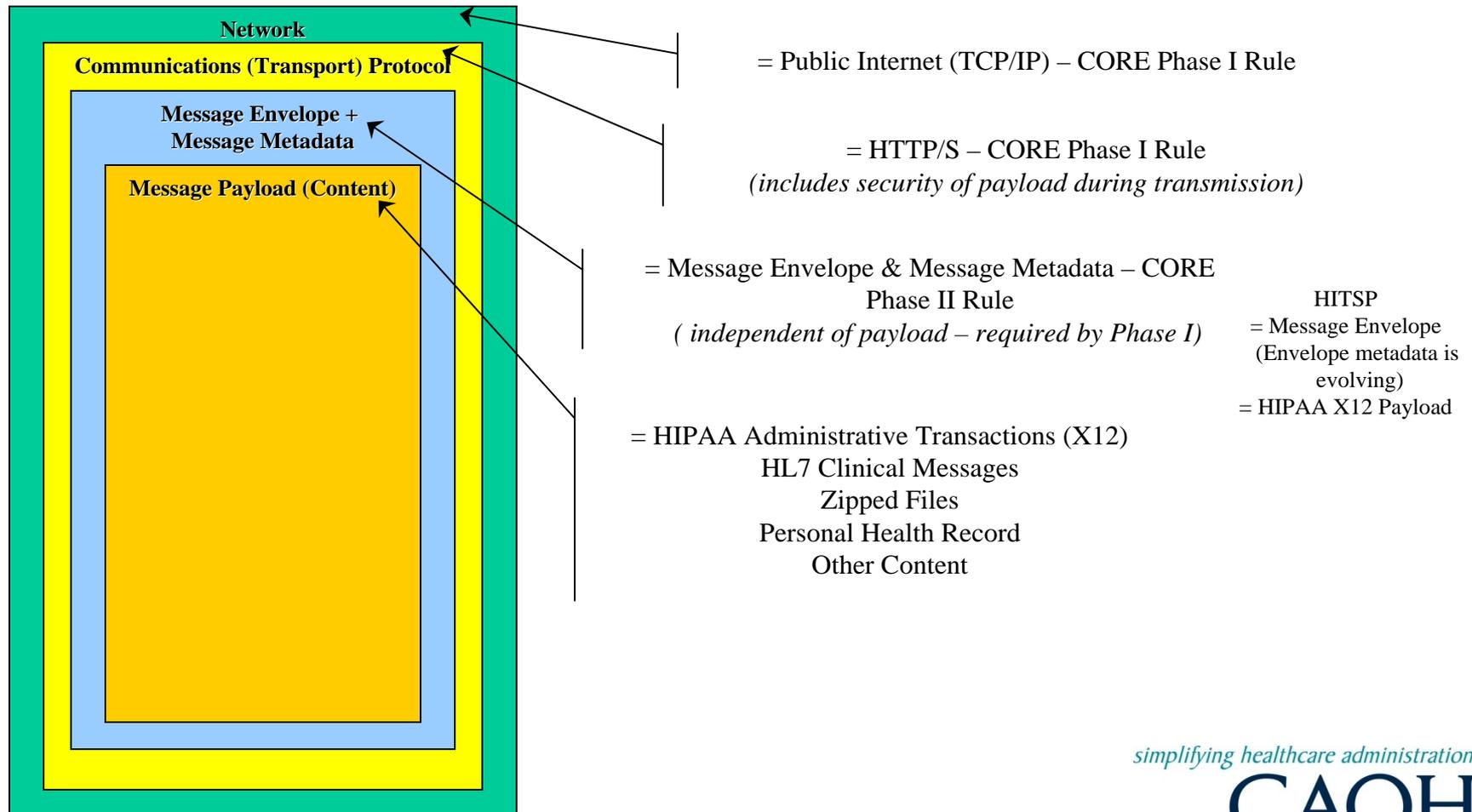
Phase II Highlights

- **Decision**: Develop a more definitive Phase II Connectivity Rule
  - Benefit: Facilitates connectivity standardization and interoperability as it can be applied across as aspects of the healthcare information exchange
  - Challenge: CORE must coordinate with its multi-stakeholder members, standards organizations and industry bodies to obtain technical review and acceptance of a rule

- **Conclusion**:
  - Relatively few healthcare industry trading partners have fully implemented Internet interoperability and most are still developing their long-term strategy, therefore, an earlier development of an interoperability rule will assist in an easier industry adoption process
  - As CORE's approach is payload agnostic, early adoption of a Phase II Rule could provide a ready foundation for the inclusion and earlier adoption of additional transaction types and could more easily incorporate evolving national connectivity standards

- **CORE Phase II Connectivity**
  - Create a more *definitive* Connectivity Rule, but still a safe harbor
  - Move toward greater interoperability
    - Envelope structure (using existing open standards)
    - Submitter Authentication
    - Envelope Metadata syntax and semantics

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Key Principles Included in CORE Connectivity Phases

- Developed using consensus-based approach among industry stakeholders and is designed to:
  - Facilitate interoperability
  - Improve utilization of electronic transactions
  - Enhance efficiency and help lower the cost of information exchange in healthcare
- Uses existing standards
- Creates a base and not a "ceiling"
  - e.g., certified entities may include additional metadata in a CORE compliant envelope to support their business needs
- Provides a "safe harbor"
  - Rule is supported/offered by any CORE-certified entity
- Phase I or II Connectivity Rules <u>do *not*</u>:
  - Require trading partners to remove existing connections that do not match the rule
  - Require that all CORE-certified entities use the CORE rule or all new connections

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CORE Phase II Rule Specifies Envelope Metadata Syntax and Vocabulary

CORE Phase II Connectivity Rule is consistent with HITSP Envelope Standard (SOAP 1.2) but is more prescriptive with metadata to facilitate interoperability of administrative transactions.

Network

Communications (Transport) Protocol

Message Envelope + Message Metadata

Message Payload (Content)

= Public Internet (TCP/IP) – CORE Phase I Rule

= HTTP/S – CORE Phase I Rule
(includes security of payload during transmission)

= Message Envelope & Message Metadata – CORE Phase II Rule
(independent of payload – required by Phase I)

HITSP
= Message Envelope
(Envelope metadata is evolving)
= HIPAA X12 Payload

= HIPAA Administrative Transactions (X12)
HL7 Clinical Messages
Zipped Files
Personal Health Record
Other Content

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CORE Phase I Connectivity

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CORE Phase I Connectivity Rule Overview

- **CORE-certified entities must support HTTP/S 1.1 over the public Internet as a transport method for both batch and real-time eligibility inquiry and response transactions**

- **Real-time requests**
  - A single inquiry or submission which elicits either an error response or the appropriate X12 message
- **Batch requests, submissions and response pickup**
  - For batch submissions, the response must be only the standard HTTP message indicating acceptance or rejection
- **Security and authentication data requirements**
  - By using HTTP/S protocol, information is encrypted by a session-level private key negotiated at connection time
- **Response time, time out parameters and re-transmission**
  - If HTTP Post Reply Message not received within 60 sec, a duplicate transaction should be sent no sooner than 90 seconds
  - No more than 5 duplicate transactions should be sent within 15 minutes
- **Response message options & error notification**
  - Authorization errors
  - Batch submission acknowledgement
  - Real-time response or response to batch response pickup
  - Server errors

NOTE: CORE Rules are a base and not a ceiling

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CORE Phase I Connectivity Rule: Challenges

- As expected, the long-term level of rule specificity to enable connectivity interoperability was not yet achieved. Significant variations in:
  - Names for Phase I metadata, names and location for other critical metadata
  - Message envelope structure
  - Authentication methods
  - Routing approaches
  - Security related information

- CORE Phase I was intended as an incremental "step" toward interoperability

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CORE Phase I "Real World" Implementations

Entity	Message Envelope	Authentication
Health plan A	WS (SOAP + WSDL schema I)	WS-Security
Clearinghouse A	HTTP POST: name/value pair	User/password
Clearinghouse B	HTTP POST	User/password
Clearinghouse C	HTTP POST with MIME	User/password encoded in MIME
Clearinghouse D	WS (SOAP+WSDL schema II)	User/password basic authentication
RHIO A	WS(SOAP+WSDL schema III)	Digital signature with X.509 certificate
RHIO B	MIME	User/password encoded in MIME

Note: Small sampling, range in variation is great

CORE Phase I Lessons Learned

- Industry has many connectivity approaches (proprietary and non-proprietary) with large installed bases

- Stakeholders are ready to come together and build consensus on connectivity methods for interoperability

- CORE Phase I is a step in the right direction – from proprietary and/or private networks, to public Internet (HTTP/S)

- While having a uniform transport standard is an important first step, many variations exist within CORE Phase I compliant implementations - interoperability requires a more definitive rule

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CORE Phase II Connectivity Rule

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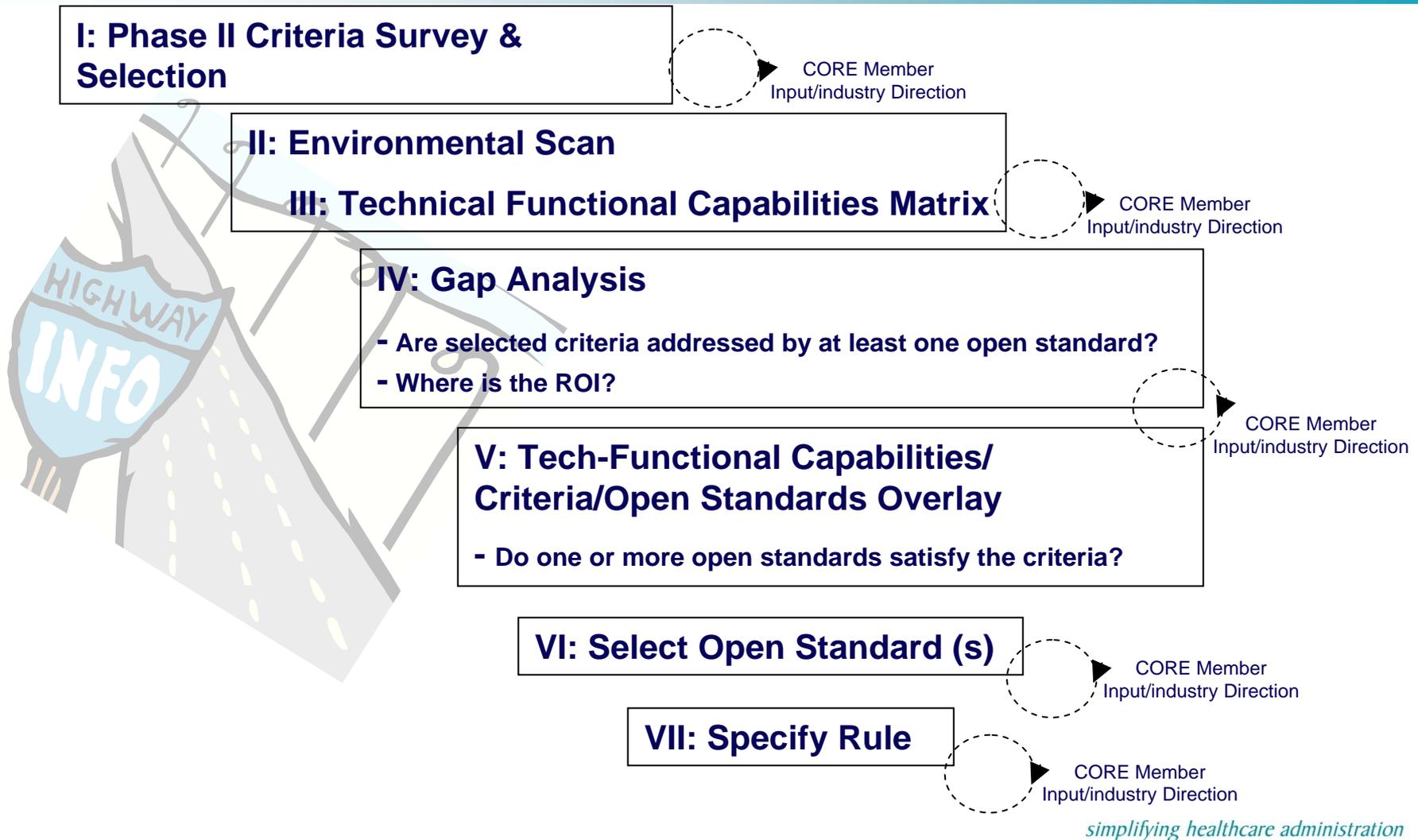# CORE Phase II Decision: Definitive Connectivity Rule

Key Rationale*

- As expected, variations existed in Phase I Connectivity Rule Implementation

- Creating a more definitive rule will facilitate connectivity standardization, and can be applied equally across the healthcare information exchange, such as clinical transport messaging as a key CORE goal is to be payload agnostic

- A definitive rule will assist in accelerating industry interoperability

- A definitive rule will help create momentum toward a connectivity foundation for the industry

Methodology

- Make decisions based on criteria, open standards, environmental scan, member inputs and CORE goal to gain implementation

Not a comprehensive list

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CORE Phase II Connectivity Rule Roadmap Overview

I: Phase II Criteria Survey & Selection

CORE Member Input/industry Direction

II: Environmental Scan

III: Technical Functional Capabilities Matrix

CORE Member Input/industry Direction

IV: Gap Analysis

- **Are selected criteria addressed by at least one open standard?**
- **Where is the ROI?**

CORE Member Input/industry Direction

V: Tech-Functional Capabilities/ Criteria/Open Standards Overlay

- **Do one or more open standards satisfy the criteria?**

VI: Select Open Standard (s)

CORE Member Input/industry Direction

VII: Specify Rule

CORE Member Input/industry Direction

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CORE Phase II Connectivity Rule Development:

Examples of Analysis Artifacts

Phase II Connectivity Artifact:
Criteria Survey and List of Selected Criteria

<u>Goal:</u> Gather stakeholder feedback to establish rule criteria

- Technical business goals
  - Supports rules based routing
  - Supports Real time (request/reply, or synchronous) transaction processing
  - Supports Point-to-Point message exchange
  - Supports Batch (or asynchronous) message exchange
- Security goals
  - Supports identification
  - Supports submitter authentication, with ability to encrypt
  - Supports HIPAA security regulations
- Messaging goals
  - Payload agnostic (to enable interoperability)
  - Message metadata
- Implementation business principles
  - Language neutral (e.g., payloads like X12, HL7 have language specific envelopes that vary in metadata content and position)
  - Platform neutral

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NOTE: This is not a comprehensive list

Phase II Connectivity Artifact:
Criteria Ranking

<u>Goal:</u> Evaluate, rank and prioritize criteria

- Feedback from CORE Participants on:
  - Relative importance of criteria
    - Essential, or Must have
    - Important, or Should have
    - Not essential
  - Member recommendation for criteria additions:
    - e.g., Message format may be clearly and precisely specified in a standard way
- Criteria ranking examples:
  - Supports real-time (synchronous) messaging – almost all responders marked this as an essential criterion
  - Supports broadcast messaging – most responders marked this as a non-essential criterion

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Phase II Connectivity Artifact: Environmental Scan

Goal: Educate participants on industry's envelope standards adoption and industry trends

- Compilation of envelope standards in use by major players in the US-based health care industry
  - Standards Development Organizations (e.g., IETF, W3C, OASIS, HL7, X12, NCPDP)
  - Government Entities/Initiatives (e.g., CDC PHIN, HHS HITSP)
  - Private Organizations/Initiatives (e.g., RxHub, SureScripts, IHE)

- Also reviewed international trends
  - Canada
  - Norway
  - UK

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Phase II Connectivity Artifact:
Mapping of Criteria to Open Standards

<u>Goal</u>: Map CORE Phase II criteria to open standards to aid in selecting standards that meet the criteria

- Initial mapping artifacts:

  - Mapping of criteria to technology functional capabilities

  - Mapping of technology functional capabilities to open standards

- Overlay

  - Combination of mappings, to obtain criteria to open standards mappings

  - Helped in identifying:
    - standards gaps (e.g., message throttling was not addressed by any open standard)
    - standard groups that addressed most of the criteria
    - standards that meet very few criteria (e.g., CGI, AS2)

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CORE Phase II Short Listed Standards:
Real-world Implementation Examples / Questionnaire

Goal: Obtain real-world implementation perspectives from CORE members in response to a common set of questions that were based on CORE Phase II Criteria and Glossary

- Support for real time transaction processing
- Support for asynchronous message exchange
- Support for large batch transaction files
- Payload independence
- Language and platform neutrality
- Support for submitter authentication (encrypted)
- Implementation environment characteristics
- Interoperability
- Extensibility
- Implementation Cost/Effort level

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CORE Phase II Definitions: Glossary of Terms

<u>Goal</u>: Expand CORE Phase II glossary of terms, use definitions from well recognized standards organizations like IETF, W3C and OASIS

Examples of terms in glossary:	Discussions on performance, interoperability highlighted the need for greater clarity of several terms:
Message metadata **Acknowledgments** **Network error handling** **Payload, Payload agnostic** **Request/Reply Message exchange** **Sender, Receiver** **Transport protocol**	**Synchronous processing** **Asynchronous processing** **Large Volume Transactions** **Large batch** **Interoperability** **Extensibility** **Open Standards** **Standards Definition Organization (SDO)** **Safe Harbor**

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CORE Phase II Connectivity Rule, Conformance Requirements and Rationale

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CORE Phase II Connectivity Rule Overview

- **Open Standards**
  - Message Envelope
    - SOAP 1.2 + WSDL + MTOM
    - HTTP + MIME Multipart
  - Submitter Authentication
    - Username/Password (WS-Security Username Token)
    - X.509 Certificate over SSL (two-way SSL)
- **Envelope Metadata**
  - Field names (e.g., SenderID, ReceiverID)
  - Field syntax (value-sets, length restrictions)
  - Semantics (suggested use)
- **Error Handling, Auditing**
- **Conformance Requirements for Stakeholders**
  - Envelope
  - Authentication

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Phase II Connectivity: Rationale for Two Envelope Standards

- Decision on supporting two message envelope standards
    - SOAP+WSDL
        - Well aligned with HITSP and HL7
        - Lends itself to future rule development using Web-services standards for more advanced requirements (e.g., reliability)

    - HTTP MIME Multipart
        - Relatively simple and well understood protocol framework
        - CORE-certified entities have already implemented HTTP as part of Phase I

    - Incremental "phased" approach:
        - Facilitates adoption in a market that is still maturing
        - Facilitates interoperability relative to the current state of envelope standard variability in the marketplace

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Phase II Connectivity: Envelope Conformance
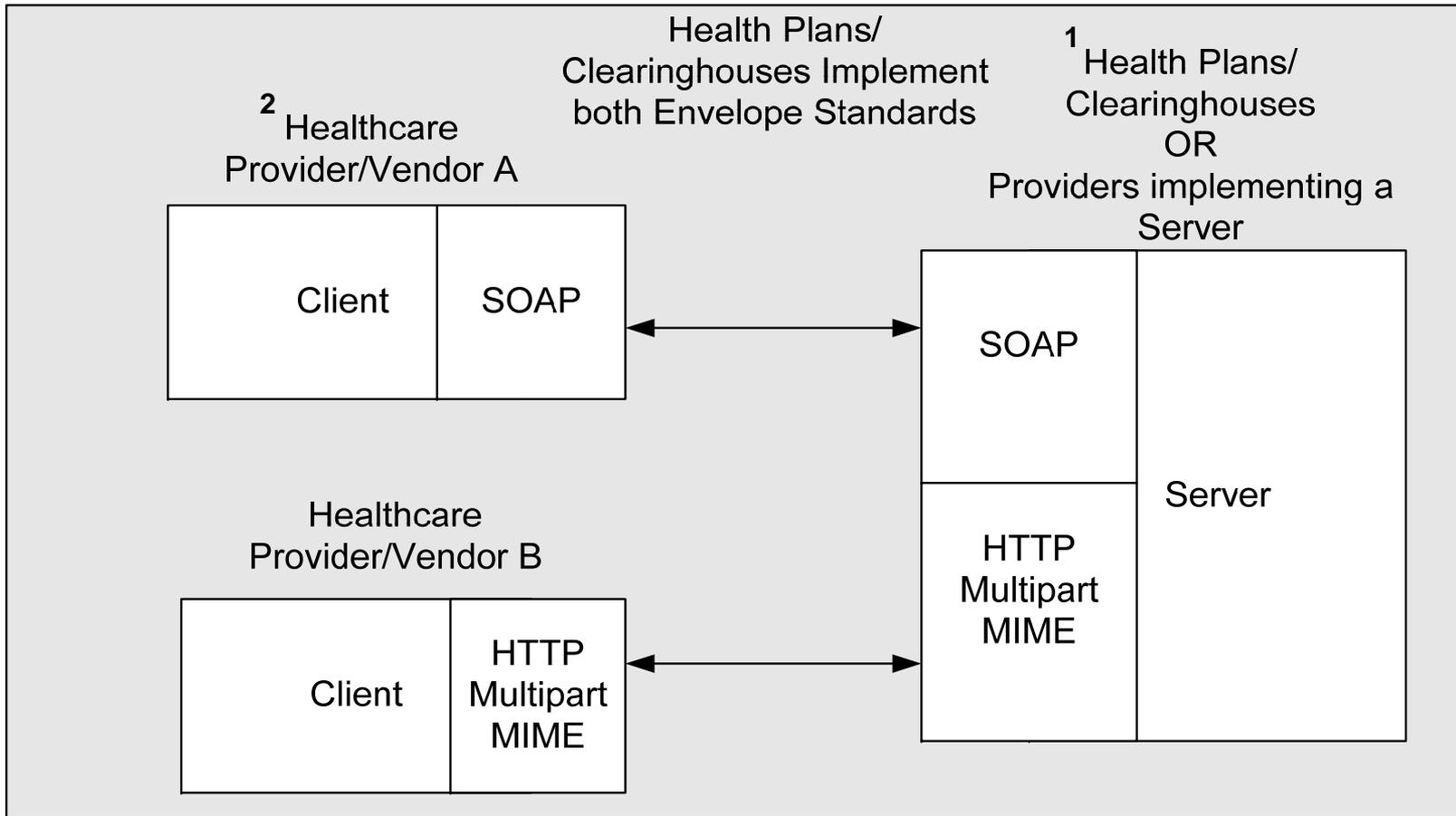
1 *Health Plans, Health Plan Vendors, Clearinghouses or Providers implementing a server must support both envelope standards*
2 *Providers and Provider Vendors acting as a client need only support one of the envelope standards*

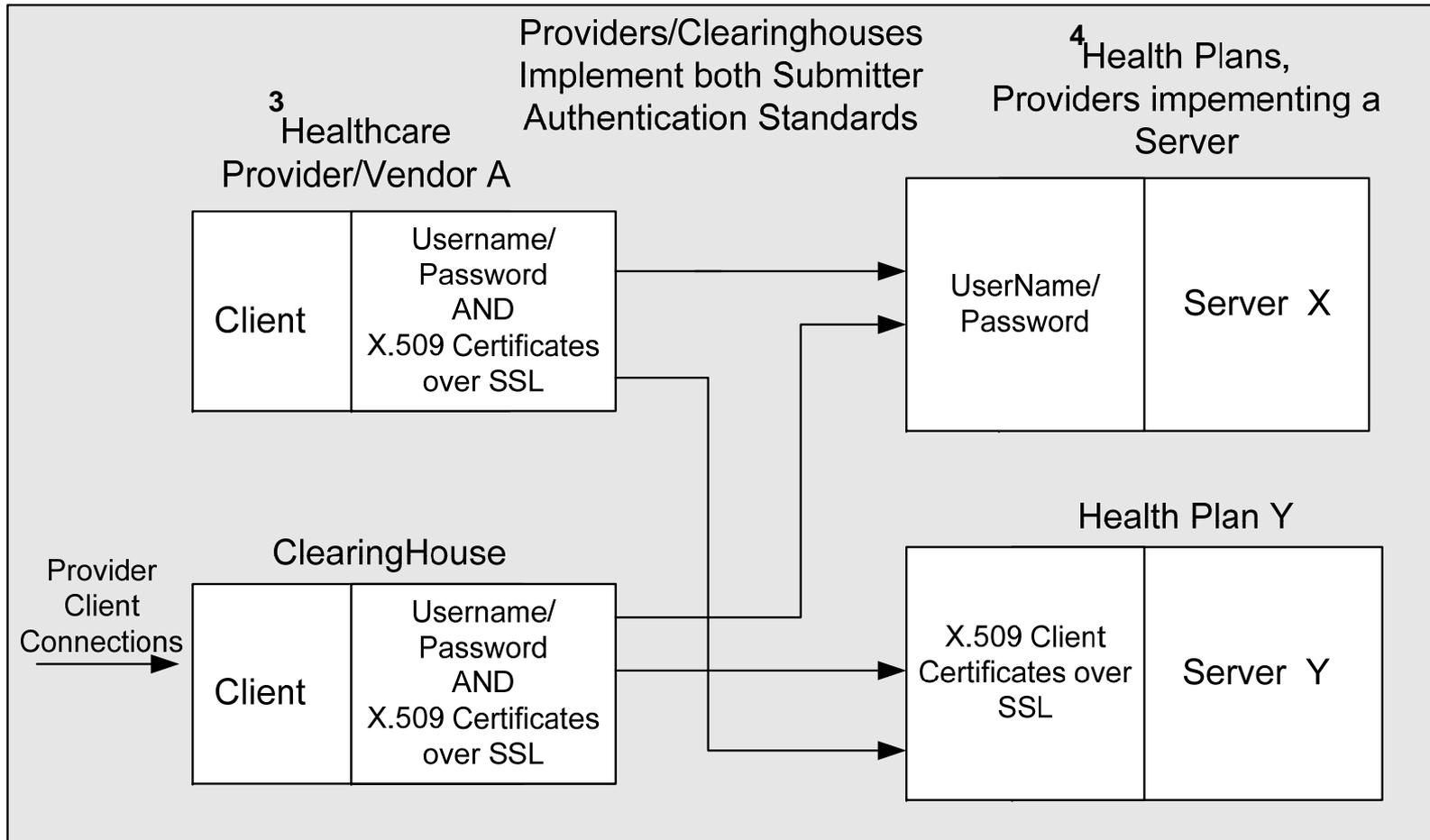*simplifying healthcare administration*

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Note: Standards are paired with a metadata list; Refer to Rule for definition

Rationale for Envelope Standard Basic Conformance Requirements

- Health Plans/Clearinghouses are typically "Servers" and Health Providers are typically "Clients"

- Servers can accept more client connections by supporting two envelope standards (big improvement from the current state of industry)

- Server sites typically have higher technical expertise than Client sites. Increased complexity of supporting two envelope standards may not be significant for Server sites.

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Phase II Connectivity: Submitter Authentication

Providers/Clearinghouses Implement both Submitter Authentication Standards

3 Healthcare Provider/Vendor A

| Client | Username/Password AND X.509 Certificates over SSL |

4 Health Plans, Providers impementing a Server

| UserName/Password | Server X |

Provider Client Connections

ClearingHouse

| Client | Username/Password AND X.509 Certificates over SSL |

Health Plan Y

| X.509 Client Certificates over SSL | Server Y |

3 *Providers, Provider Vendors or Clearinghouses acting as a client must both submitter authentication standards*

4 *Health Plans, Health Plan Vendors or Providers implementing a server need only support one submitter authentication standard*

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* Refer to Rule for definitions

Rationale for Submitter Authentication Standards and Conformance Requirements

- **Standards**
  - <u>Username/password</u>: Simple, ubiquitous
  - <u>X.509 Certificate over SSL</u>: Aligned with HITSP/IHE (ATNA)

- **Conformance Requirements**
  - Health-Plans/Clearinghouses act as "Servers". Health Providers act as "Clients"
  - Server implementations manage identities, credentials, hence more complex to support both authentication methods at Server
  - Client implementations only install their own credentials for each connection to Health-Plan/Clearinghouse, hence simpler to support two authentication methods at Client

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Phase II Connectivity: Metadata Will be Outside the Payload

Concept applied in Phase I, and confirmed again in Phase II

Rationale
- Facilitates connectivity standardization as well as administrative and clinical integration

- Accelerates industry interoperability

- Entities are able to do auditing and authentication without parsing payload/bring payload into their system

- Payload agnostic
  - Allows CORE's connectivity rules to evolve to future phases independent of payload standard evolution; in other CORE rules, e.g. Data Content, adoption of payloads are promoted for content
  - Supports approach of other national initiatives

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Envelope Metadata Requirements

- Metadata provides the ability to
    - Identify both sender and receiver
    - Authenticate sender and authorize access
    - Identify type of payload
    - Route payload to the correct receiver entry point for the type of payload
    - Audit date/time of message
    - Specify payload size in either kilo or megabytes

- Metadata must be independent of the payload (content) {*CORE Phase I Decision*}
    - Does not require receiver to examine payload

- Metadata needs to be standardized for
    - Metadata element names
    - Intended use of each metadata element (as agreed to by the trading partners)
    - Requirement for presence of each metadata element (required/optional)
    - Structure of message envelope

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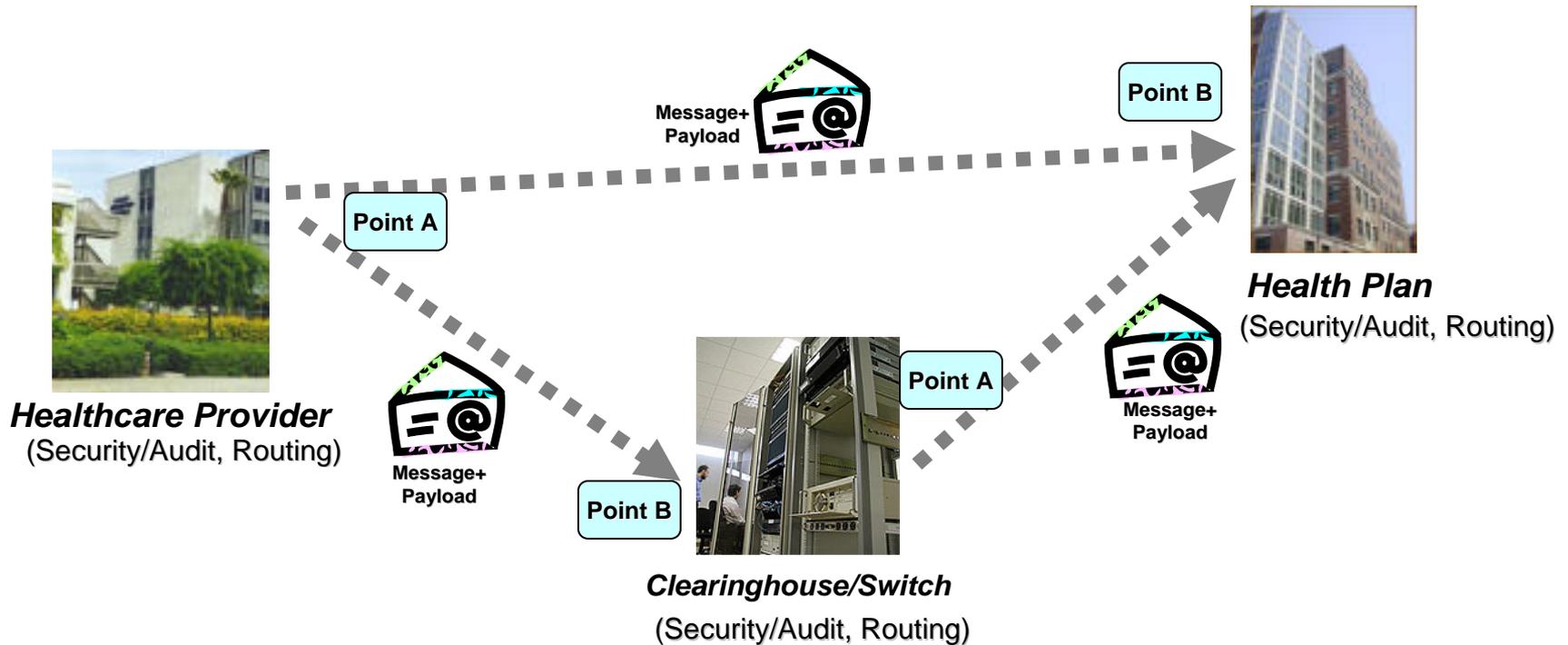
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Phase II Connectivity: Envelope Metadata

Challenges of Payload-Specific Metadata

- Not all metadata is present in all types of payload

    – Some payload standards are content-focused with no transport/message metadata

- Different payloads use different structure, position, syntax, semantics for the same metadata

    – HL7 and X12 message structures are different

    – Standards for different payload types are evolving independently of one another

Intended Use of Metadata in CORE Phase II

All message exchanges are point-to-point even when the message goes through one or more intermediaries before receipt by the ultimate end point.

Point B

Message+
Payload

Point A

Health Plan
(Security/Audit, Routing)

Healthcare Provider
(Security/Audit, Routing)

Message+
Payload

Point A

Point B

Message+
Payload

Clearinghouse/Switch
(Security/Audit, Routing)

Multi-hop message exchange is not a Phase II requirement

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CORE Connectivity: Metadata

<u>Decision:</u> For simplicity, use same metadata for request and response

- Payload Type
- Processing Mode
- Payload Length
- Payload ID
- Time Stamp
- User Name
- Password
- Sender Identifier
- Receiver Identifier
- CORE Rule Version
- Checksum
- Error Code
- Error Message

***See CORE Phase II Rule for detailed descriptions, intended use for each element**

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Value and Benefit of ……

A common shared vocabulary for electronic messaging
= Standard Metadata (e.g., SenderID, Date)

⬇

Standard metadata in a structured envelope
= Interoperability (e.g., XML Schema)

⬇

A standard message structured using a schema
(e.g., WSDL)
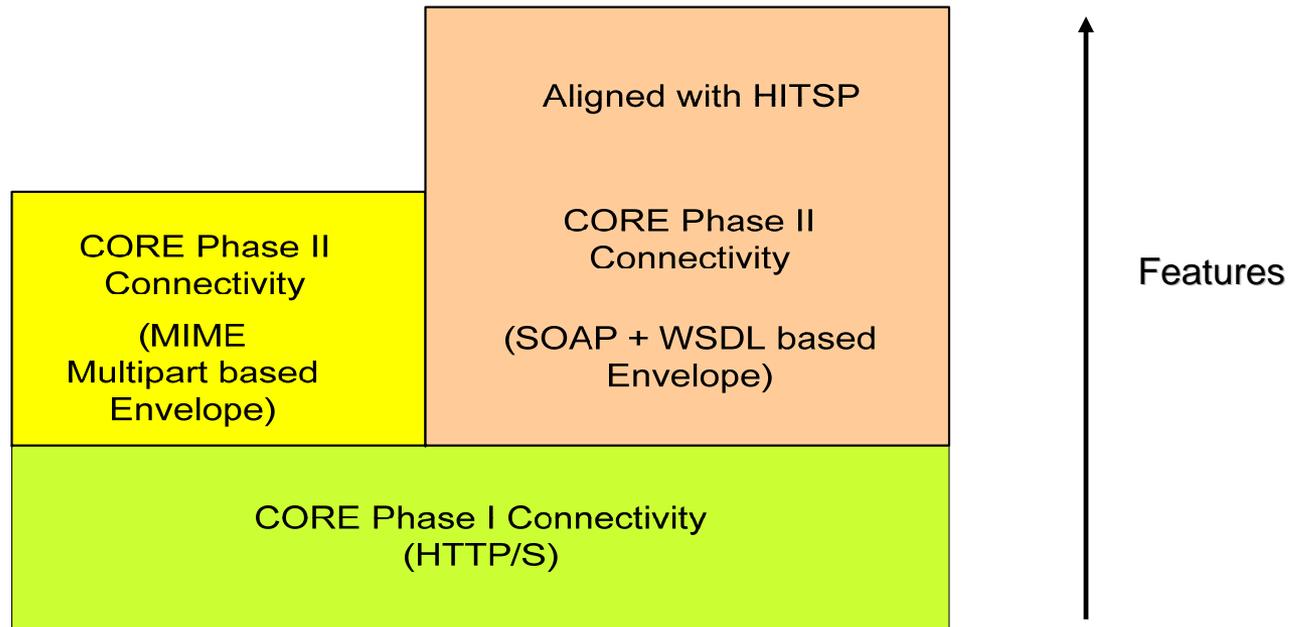= Automated Processing of Message and Payload

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Coordinating with Industry-Wide Initiatives

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CORE Phase II: Key Outreach to Standards Organizations and Other Industry Initiatives
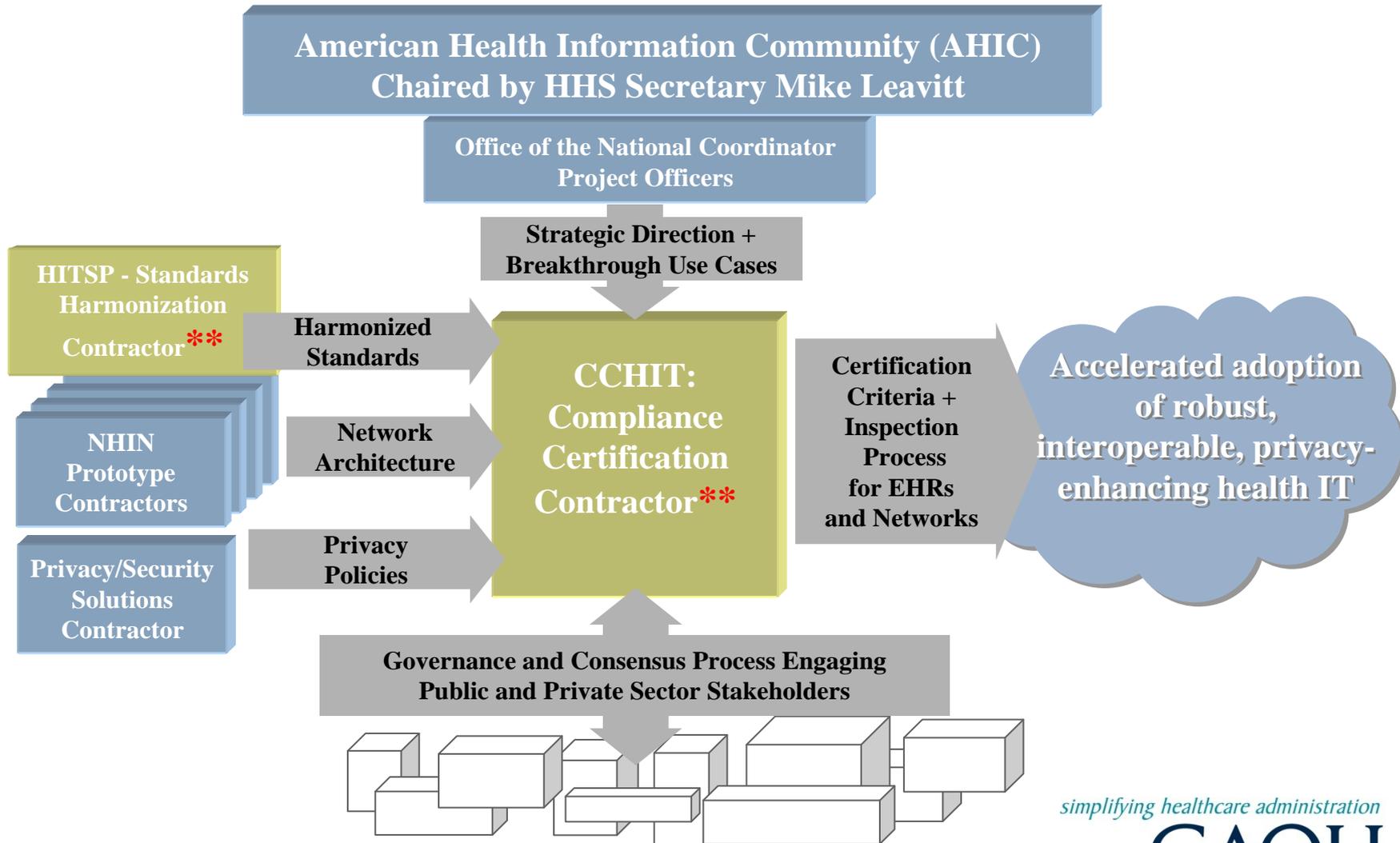
- Detailed review and discussions have occurred
  - HITSP and IHE
    - IHE Profiles
      - HL7v2 to use MLLP + Audit Trail and Node Authentication (ATNA)
      - HL7v3 to use SOAP over TLS with ATNA
  - HL7
    - Standards recommended for transport
      - HL7v2 MMLP
      - HL7v3 SOAP+WSDL
      - HL7v3 ebMS
  - RxHub and SureScripts
  - X12 and X12/WEDI RTA Communications Work Group
  - International efforts

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Connectivity: CORE Phase II Rule Builds on CORE Phase I

Aligned with HITSP

CORE Phase II Connectivity

(SOAP + WSDL based Envelope)

CORE Phase II Connectivity

(MIME Multipart based Envelope)

CORE Phase I Connectivity (HTTP/S)

Features

- Both the CORE Phase II envelope methods support CORE Phase II Metadata
- Both the CORE Phase II envelope methods have significant use among CORE members
- SOAP+WSDL envelope is aligned with HITSP direction.
- CORE Phase II Rule goes "beyond" HITSP in envelope metadata specificity to facilitate interoperable implementations, and to bring key ROI.

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CCHIT and HITSP Roles Within HHS Health IT Strategy, CORE Involvement

American Health Information Community (AHIC) Chaired by HHS Secretary Mike Leavitt

Office of the National Coordinator Project Officers

Strategic Direction + Breakthrough Use Cases

HITSP - Standards Harmonization Contractor**

Harmonized Standards

NHIN Prototype Contractors

Network Architecture

Privacy/Security Solutions Contractor

Privacy Policies

CCHIT: Compliance Certification Contractor**

Certification Criteria + Inspection Process for EHRs and Networks

Accelerated adoption of robust, interoperable, privacy-enhancing health IT

Governance and Consensus Process Engaging Public and Private Sector Stakeholders

**Indicates where CORE is involved

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CORE and Information Transparency

Common Goals

	CORE	HITSP
Objective	Achieve market change by creating, disseminating & maintaining operating rules that enable healthcare providers to quickly & securely obtain reliable healthcare eligibility/benefits and other administrative information.	Achieve widely accepted & readily implemented standards that enable widespread interoperability among healthcare information technology systems, especially as they interact with a NHIN (Nationwide Health Information Network).
Organization	Founded by CAQH with the vision of giving providers access to eligibility/benefits, and then other administrative information, before or at the time of service using the electronic system of their choice for any patient or health plan. 100+ organizations participating representing 75% of commercially insured plus Medicare and some Medicaids.	Founded by HHS Office of the National Coordinator (ONC) designed to provide the process within which affected parties can identify, select & harmonize standards for communicating healthcare information.
Focus	Administrative & financial transactions (using existing standards, e.g. HIPAA).	Clinical messages as required by Use Case Requirements created by AHIC (American Health Information Community) and administrative
Geographic Scope	National	National
Standards Harmonization	Multi-stakeholder, consensus-based. CORE Work Groups/Subgroups create business cases for data exchange and then identify & write operating rule for existing standards that meet established goals. Use and build upon HIPAA adopted X12 implementation guides/other X12 standards and incorporate standards from other SDOs into CORE operating rules (e.g., W3C, OASIS, IETF).	Multi-stakeholder, consensus-based. Technical committees identify, select & harmonize standards for communicating healthcare information. Incorporates standards from other organizations into HITSP Interoperability Specification & other HITSP specifications (e.g., HL7, IHE, W3C, OASIS, IETF, NCPDP, CORE Phase I rules).

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Work Products

CORE	HITSP
Phases of **operating rule packages** built on existing standards to make transactions more predictable & consistent regardless of technology.	**Interoperability Specifications** specifying clinical message content and other security, privacy, infrastructure & connectivity specifications addressing the requirements of various AHIC Use Cases.
Scope of initial work product (Phase I and Phase II): • Data content for eligibility & benefit transactions (financials) • Claims status transactions • Real time response time requirements • Use of standard X12 acknowledgements • System availability • Connectivity • Companion Guide	Scope of initial work products (first set of interoperability specifications): • Consumer Empowerment PHR Registration Summary Content – Note: Incorporates CORE's Phase I Data Content Rule • EHR Lab Results Reporting • Biosurveillance • Patient Demographics Query • Patient ID Cross-reference • Other components
Technology/Vendor Agnostic	Technology/Vendor Agnostic
Gains market adoption via 1)the voluntary CORE certification/testing process, 2) and working with HITSP and CCHIT to have CORE rules recognized/incorporated. Over 40 organizations are CORE-certified, with CORE-certified health plans serving over 63 million Americans.	**Gains market adoption** by having 1) Interoperability Specifications recognized by Federal government, who incorporates rules into Federal Register / government requirements for contracting, 2) and by having CCHIT incorporate HITSP requirements. CCHIT and HITSP are in the process of determining roadmap for CCHIT to require recognized HITSP Specifications.

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Certification & Compliance

CORE	HITSP (via CCHIT)
Entities that create, use or transmit eligibility & other administrative transactions undergo certification testing by two neutral authorized CORE Certification Testing Vendors.	Vendor EHR products incorporating HITSP specifications undergo comprehensive certification testing by CCHIT (Certification Commission for Healthcare Information Technology).
A CORE Certified Seal, specific to their stakeholder type (e.g., health plan, provider, clearinghouse, vendor) is awarded to entities successfully completing CORE certification testing. A CORE Certification Seal assures trading partners that the systems meet basic conformance requirements for transaction content, connectivity and other CORE rules.	HITSP work products get "certified" via CCHIT. CCHIT Certified^{SM} electronic health records (EHR) assure physicians and other providers—and others in the marketplace—payers, purchasers and consumers—that the products meet all basic criteria for functionality, interoperability and security. CCHIT's draft long-term plan also recognizes their intention to work with some organizations like RxHub, CORE, etc.
Certification testing voluntary – no-to-low cost.	Certification voluntary - fee-based.
CORE is a base, not a ceiling, and it is hoped that entities will do more than CORE requires.	HITSP is a base, not a ceiling, and it is hoped that entities will do more than what CCHIT/HITSP require.

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Connectivity & Security

CORE

- Pushing for incremental adoption towards industry-shared long-term vision

- Develops a single "safe harbor" connectivity rule requirement using existing transport & enveloping standards from recognized SDOs
  - Safe harbor allows for other connectivity methods so market can mature at a reasonable rate

- Safe harbor is connectivity payload agnostic – can be used for HIPAA and other transactions

- Builds requirements in phases given market maturity and focus on implementation/certification

HITSP

- Setting industry long-term vision

- Develops different transport, enveloping & security specifications using standards from recognized SDOs

- Different connectivity specifications as required by Use Case and type of information being exchanged

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Transport Specifications

CORE – Phase I

- Already adopted in marketplace - addressed decisions for Transport based on a set of Guiding Principles, including being complementary to ONC efforts

- HTTP over the public Internet (a TCP/IP-based network) with basic security
  - More than 44 Phase I CORE Certified health plans, clearinghouses, providers, vendors
  - For many entities, especially health plans and providers, Phase I was a significant leap

HITSP

- HITSP adopts various IHE Integration profiles, each of which incorporates one or more transport standards
  - Vendors demonstrate implementation at annual Connectathon & HIMSS Interoperability Showcase; later maybe tested by CCHIT?

- Each of the transport standards implemented for different information exchanges as specified in HITSP; Transport standards widely implemented by vendors with HL7-based products
  - HTTP* over public or private networks
  - TCP/IP* public or private networks
  - SMTP* (email)

Use of these is not mutually exclusive. HITSP components specify which transport is to be used for a specific information exchange. For example, SMTP is required to be used for the Notification of Document Availability message transport.

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Enveloping Specifications

CORE- Phase II

- Two "safe harbor" envelopes
  1. **HTTP MIME Multipart + Metadata**

     And

  2. **SOAP v1.2 + WSDL + Metadata**
     - Health plans & health plan vendors *must* implement both
     - Providers & provider vendors *must* implement one
     - Clearinghouses *must* implement both

- Both enveloping specifications use the same set of CORE-specified metadata

- Phase II will be a significant leap for most entities – learning curve in connectivity is steep

HITSP

1. HL7 MLLP* (Minimal Lower Layer Protocol) - widely implemented for HL7 v2.x messages over a network, e.g., lab results reporting

2. SOAP v1.1 +WSDL + Metadata – as defined in IHE XDS.a Integration Profile

3. SOAP v1.2 + WSDL + Metadata – as defined in the IHE XDS.b Integration Profile

# Interoperability Standards Evolution in the Healthcare-IT Industry

FUTURE????

INDUSTRY MOVEMENT FOR CHANGE......

Security Standards
TLS 1.0, Audit, Node Authentication,
Consistent Time, SAML 2.0

Envelope Metadata for
Administrative
Transactions

HITSP

CORE Phase II

HTTPS with SOAP 1.2 and WSDL

HTTPS with
MIME-multi-part

CORE Phase I

HTTP with basic
security "S"

HTTP

TCP/IP,
MLLP

NOW → *Nothing, proprietary, or company-specific interpretation of various standards .....clearinghouses translate **or entities spend significant resources on each trading partner connection***

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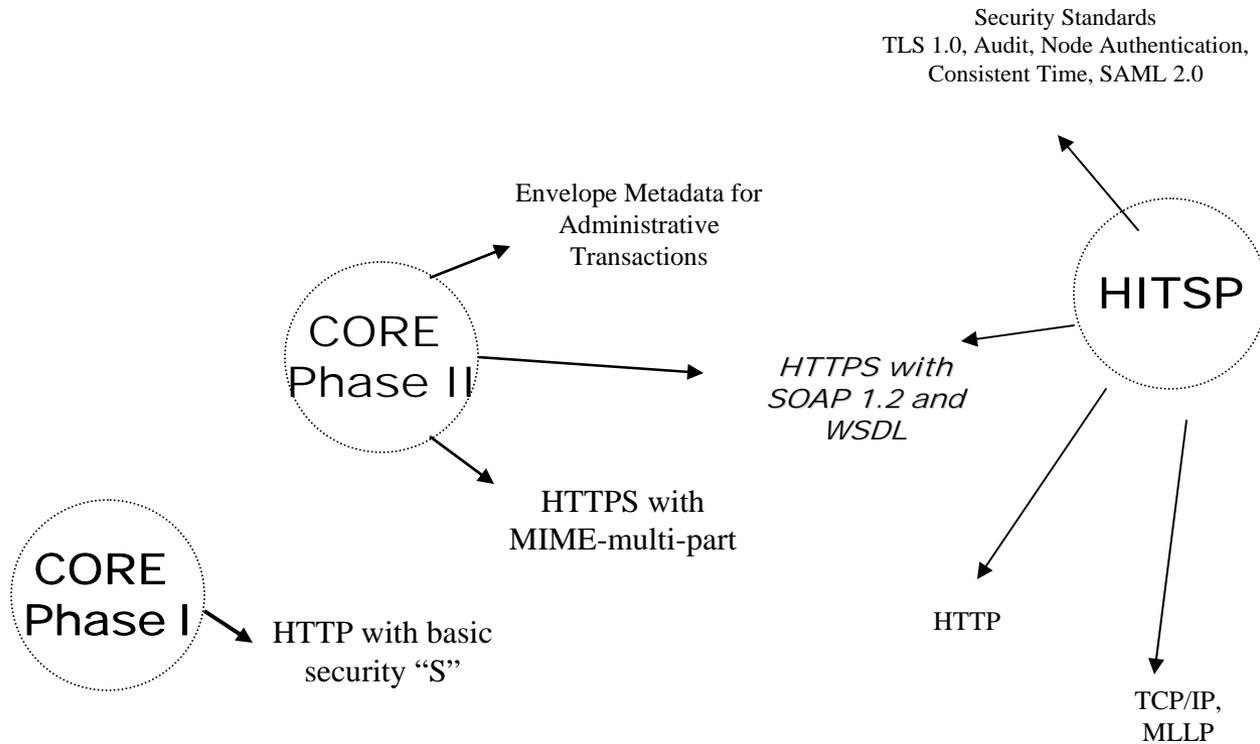
Transmission Security

CORE

- Phase I and Phase II rules require SSL (Secure Sockets Layer)
- Phase II extends Phase I Rule by clearly articulating authentication methods.
    - Client certificate over SSL is one of the two node authentication methods

HITSP

- Requires TLS (Transport Layer Security)
- Node authentication uses TLS with client certificates

Transport Layer Security (**TLS**) and its predecessor, **Secure Sockets Layer** (**SSL**), are cryptographic protocols that provide secure communications on the Internet for such things as web browsing, e-mail, Internet faxing, instant messaging and other data transfers. There are slight differences between SSL and TLS, but the protocol remains substantially the same.

Source: http://en.wikipedia.org/wiki/Secure_Sockets_Layer
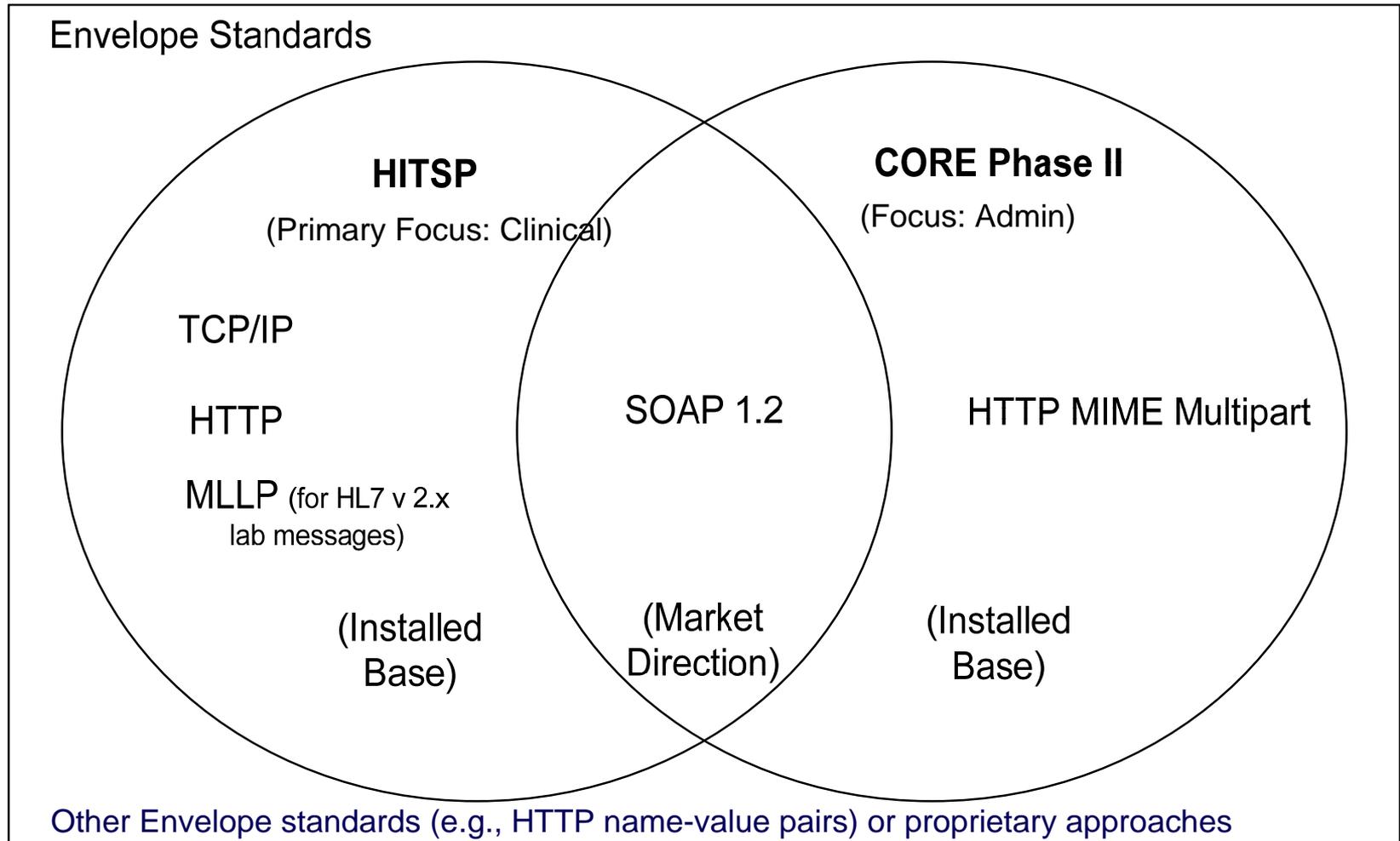
Authentication

CORE

- UserName & Password
  and/or
- X.509 Digital Certificate
- Other Security, Privacy and Infrastructure Specifications, e.g.
  - Audit Trail

HITSP

- X.509 Digital Certificate
- Other Security, Privacy & Infrastructure Specifications
  - Non-repudiation of Origin
  - Consistent Time
  - Audit Trail & Node Authentication
  - Secured Communications Channel
  - Collect & Communication Security Audit Trail

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CORE Phase II Connectivity Rule – Standards Alignment with HITSP Envelope Standards

Envelope Standards

HITSP

(Primary Focus: Clinical)

CORE Phase II

(Focus: Admin)

TCP/IP

HTTP

MLLP (for HL7 v 2.x lab messages)

SOAP 1.2

HTTP MIME Multipart

(Installed Base)

(Market Direction)

(Installed Base)

Other Envelope standards (e.g., HTTP name-value pairs) or proprietary approaches

Installed Base: Large segment of the industry currently has software installed that uses the envelope method.
Market Direction: Industry activity is moving in the direction of adopting this envelope method.

Potential CORE Phase III Connectivity Priorities

- **Further enhancement of Connectivity rules**
  - Convergence on single envelope standard if possible
  - Convergence on single authentication standard if possible
  - Re-evaluate some of the criteria that were deferred in CORE Phase II. e.g.,
    - Multi-hop messaging
    - Publish/Subscribe and Broadcast messaging
    - Payload level encryption

- **Moving forward, CORE intends to maintain its alignment with HITSP and other industry initiatives – industry coordination is critical for success**

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Note: CORE Technical Work Group Chairs (from Siemens and BCBSNC)
are available for discussions as well as a range of CORE participants

CORE resources assigned to HITSP specific to connectivity:

Rachel Foerster   **Raja Kailer**
Senior CAQH Consultant, BIG   *CAQH Consultant, CSC*

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Current CORE Participants

- **Health Plans**
    - Aetna, Inc.
    - AultCare
    - Blue Cross Blue Shield of Michigan
    - Blue Cross and Blue Shield of North Carolina
    - BlueCross BlueShield of Tennessee
    - CareFirst BlueCross BlueShield
    - CIGNA
    - Coventry Health Care
    - Excellus Blue Cross Blue Shield
    - Group Health, Inc.
    - Harvard Pilgrim HealthCare
    - Health Care Service Corporation
    - Health Net, Inc.
    - Health Plan of Michigan
    - Horizon Blue Cross Blue Shield of New Jersey
    - Humana Inc.
    - Independence Blue Cross
    - UnitedHealth Group
    - WellPoint, Inc.
- **Providers**
    - Adventist HealthCare, Inc.
    - American Academy of Family Physicians (AAFP)
    - American College of Physicians (ACP)
    - American Medical Association (AMA)
    - Catholic Healthcare West
    - Cedars-Sinai Health System
    - Greater New York Hospital Association (GNYHA)
    - HealthCare Partners Medical Group
    - Mayo Clinic
    - Medical Group Management Association (MGMA)
    - Mobility Medical, Inc.
    - Montefiore Medical Center of New York
    - New York-Presbyterian Hospital
    - North Shore LIJ Health System
    - Partners HealthCare System
    - University Physicians, Inc. (University of Maryland)

- **Government Agencies**
    - Louisiana Medicaid – Unisys
    - Michigan Department of Community Health
    - Michigan Public Health Institute
    - Minnesota Department of Human Services
    - Oregon Department of Human Resources
    - United States Centers for Medicare and Medicaid Services (CMS)
    - United States Department of Veterans Affairs
- **Associations / Regional Entities / Standard Setting Organizations**
    - America's Health Insurance Plans (AHIP)
    - ASC X12
    - Blue Cross and Blue Shield Association (BCBSA)
    - Delta Dental Plans Association
    - eHealth Initiative
    - Health Level 7
    - Healthcare Association of New York State
    - Healthcare Billing and Management Association
    - Healthcare Financial Management Association (HFMA)
    - Healthcare Information & Management Systems Society
    - LINXUS (an initiative of GNYHA)
    - National Committee for Quality Assurance (NCQA)
    - National Council for Prescription Drug Programs (NCPDP)
    - NJ SHORE
    - Private Sector Technology Group
    - Utah Health Information Network (UHIN)
    - Utilization Review Accreditation Commission (URAC)
    - Work Group for Electronic Data Interchange (WEDI)

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Current CORE Participants (continued)

- **Vendors**
  - ACS EDI Gateway, Inc.
  - athenahealth, Inc.
  - Availity LLC
  - CareMedic Systems, Inc.
  - ClaimRemedi, Inc.
  - Claredi (an Ingenix Division)
  - EDIFECS
  - Electronic Data Systems (EDS)
  - Electronic Network Systems (ENS) (an Ingenix Division)
  - Emdeon Business Services
  - Enclarity, Inc.
  - First Data Corp.
  - GE Healthcare
  - GHN-Online
  - Health Management Systems, Inc.
  - Healthcare Administration Technologies, Inc.
  - IBM Corporation
  - InstaMed
  - MedAvant Healthcare Solutions
  - MedData
  - Microsoft Corporation
  - NASCO
  - NaviMedix

  - NextGen Healthcare Information Systems, Inc.
  - Passport Health Communications
  - Payerpath, a Misys Company
  - RealMed Corporation
  - Recondo Technology, Inc.
  - RelayHealth
  - RxHub
  - Secure EDI
  - Siemens / HDX
  - SureScripts
  - The SSI Group, Inc.
  - The TriZetto Group, Inc.
  - VisionShare, Inc.

- **Other**
  - Accenture
  - Foresight Corp.
  - Omega Technology Solutions
  - PNC Bank
  - PricewaterhouseCoopers LLP

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