

# Simple Interop for Healthcare in the US

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9 July 2010

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# Simple Interop for Healthcare in the US

– *or* –

*Why Does Wes Rishel Hate HIEs  
and the NHIN?*

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# The Facts of Life in Health Information Technology

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- Health information technology asynchrony
- Interoperability has a compound adoption curve
- Two models for developing standards: incremental and kerplunk
  - Incremental built the Internet
  - No proven success for kerplunk; some glorious failures
- Standards don't dictate business models
  - The best standards enable creative users to find business models

[http://blogs.gartner.com/wes\\_rishel/2010/01/02/rant-on-health-information-technology-asynchrony/](http://blogs.gartner.com/wes_rishel/2010/01/02/rant-on-health-information-technology-asynchrony/)

# Healthcare “Simple Interop” Is

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- Easily adopted across a wide range of technologies
- Easily adopted across different levels of technology adoption
- Incremental
  - “Quick” rollout can be accomplished to meet the meaningful use interoperability measure minima for Stage 1
  - “Extensive” rollout improves scalability, increases breadth of information exchange enough to handle minima for Stage 2
- Avoids organizational and technical complexity associated with trust issues
- Not chained to the roll-out of EHRs, HIEs or large-scale NHIN
- A basic platform for incremental introduction of HIE-like services
- A “pathway” to the large-scale NHIN
- Might be thought of as an important part of “NHIN Light”

# The Propositions

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*“Quick” Simple Interop is sufficient to enable a large number of practices and hospitals to meet Stage 1 interoperability minima.*

- Transitions of care
- Structured labs
- 2012 transmission of conformance and quality measures

*“Extensive” Simple Interop is sufficient to meet Stage 2 interoperability requirements, as well as we currently understand them*

- PHR
- Higher minima for existing interop measures

# The Goal (A Challenge): Start by Doing *Slightly* Better Than the Fax Machine

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	<u>Fax</u>	<u>Simple Interop</u>
Ubiquity	Everywhere	As good as email and Web
Required Technology Level	Easy	As easy as email and Web
Memorable Addressing	Phone number	Email address
Directory	Not usually (call and ask)	Future consideration
End-point authentication	Minimal	Better
Secure transmission	Switched network	Internet encryption
Organizational or personal Trust	Ad hoc	Ad Hoc
Structured data	No	Optional
Send to: Person	Often	Often
Send to: Computer	Sometimes	Often
Send to: Business function	Often	Often

# Payload:

## MIME Based Using These Principles

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- Standards profiles such as HITSP C32 are supported
- There is no requirement to use structured payload standards when exchanging information among health Internet nodes
  - PDFs and plain-text allowed and expected
  - However meaningful use criteria, trading partner agreements or inter-vendor agreements will no-doubt make certain structures required for specific purposes
- Simple mail clients handle structured data as file attachments
- Experimental or IANA-issued Internet media types per profile

Payload:

## Upward Compatibility in Structured Formats

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- Strongly urge developers of structured formats to offer free, easily installed “readers” (equivalents to Acrobat reader) to enable email recipients to interpret files with structured content
- Entities that define profiles for structured formats are encouraged to achieve reasonable upwards compatibility
- Where upwards compatibility is not achieved transmitters are encouraged to include redundant payload packages.
- A strong preference that every emailed MIME package contains at least one human-readable part (think about the transition from plain-text to HTML email)



# Simple Interop:

## Three Models for Sharing Identifiable Patient Data

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### Routine Care

- Information sharing about a patient occurs following well-established patterns for the treatment of the patient
  - Implicit consent
- Provider organizations know one another or have ways of establishing trust
- No central index of patients or data → no required automatic patient ID mapping

### PHR

- Patient controlled
  - Patient uses PHR to aggregate their own data and disburse it as seen fit
  - PHR aggregates inputs about the patient from multiple sources

# Simplifying Assumptions

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- The communicating organizations are known to one another by practice patterns or explicit business agreements
- Organizations trust one another to identify and authenticate users
- Governance is most likely informal (“Fax-machine governance”)
- The organizations determine consent issues off-channel
- There is no need for a module that is dynamically verifying the consent rules or otherwise using technology to enforce governance agreements
- Interoperation does not depend on an intermediary to
  - Map patient identity
  - Map transaction formats or codes

(The above notwithstanding some EHRs and other clinical systems may rely on third-party products to do mapping before transmitting information)

- There is no need for standard transaction audit-file format or an independent audit logging server
- All routing of transactions is provided by the Internet domain name service; there is no requirement for special healthcare transaction routers.

## Summary of Simple Interop

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- Three exchange approaches
  - Person-to-person
  - Automated transmission of information from one information system to another
  - Computer to person (e.g., sending diagnostic reports to physicians without an EHR)
- All “push” use cases where the policy authorization is covered by HIPAA or other laws
- Limited “pull” cases where the requester of data and the source of data are known to one another or can determine to their satisfaction that the request is valid and covered by policy.
  - Perhaps pull = push consent and then receive pushed information
- Designed not to support ad hoc lookup of patient data

# Value-Adds of HIEs with NHIN Interconnections

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- Maintaining a common patient index
- Providing the trust mechanism, software interfaces, access control and consent mechanism that enables lookup information
- Developing a common trust agreement that all parties can accept.
- An interface to consumer advocates that will assert their role protecting the interests of the patients.
- A common software channel and active support to enable multiple data sources (e.g., labs and hospitals) to send results to multiple recipients and provide both senders and receivers a single point of contact for troubleshooting.
- Mapping imprecise recipients data (e.g., taking a physician name as the recipient of the lab result and determining whether to deliver the result by fax, on-line lookup or structured transmission to the EMR).
- Aggregating data at a community or state level for measuring quality, epidemiology, and other programs.
- **NHIN direct does not compete with HIEs; it is basis on which an HIE adds value.**

## **Invention:**

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- **Does not consist in creating out of void,**
- **but out of chaos**