Interoperability: A CIO's Perspective

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Defining "Interoperability"

**What:** Getting relevant patient information to the clinician who needs it

**How:** Moving the right information between providers, health systems, and patients.

**Scope:** Includes data, context, communication, trust, permissions, usability
What we need
What we have
All these principles are needed for national interoperability to be realized.

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Core information

Core highly standardized and mandatory data requirements for key HL7 documents that...

❖ all certified systems can send and receive
❖ without custom translation or mapping.

Semantics

"Apples to Apples" is required for all codes and data communicated.

Example problem: LOINC lab results using different test equipment and reagents.
Optional data

Optional extensions allow for innovation in a standardized way.

Ensure extensions do not lessen Core Data usefulness.

Over time, common extensions should be standardized and made part of the core - example PDMPs.
Core Principles

- Open Standards
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- Use cases (scenarios) drive what data is needed
- Data requirements for each use case are standardized.
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Example Use Cases
- Acute patient care
- Transition of care
- Chronic care management
- Patient access/engagement
- Care coordination
- Payer coordination/authorization
- Population health management
- Public Health
- Health researcher
- Device integration - hospital, personal, IoT (internet of things) devices.
Core Principles

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- **Universality**
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For EMRs

Implementations of a transaction and use case must work universally

- with any trading partner
- using any brand/version of a certified system
- without further implementation costs.

For networks

Any HIE must be able to participate and interconnect fully without unreasonable barriers to entry for core functions.
Core Principles

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Patient Identification

❖ patient privacy, 100% accuracy.

Non-repudiation

❖ can we trust the data. (Encryption, block chain?)

Sender/receiver validation -

❖ This is done on a limited scale now by most HIEs.
❖ Universal certificate authorities could support HIEs, DIRECT, and APIs.
Authorization

- How to establish the receiver has a treating relationship (or other appropriate relationship) with the patient?
  - Has patient disallowed access?
  - National standard for authorization.

Indemnification

- Should not be made a victim of government penalties if hacked and fully compliant with regulations.
- Especially a concern with APIs.

Core Principles

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HIEs not required?

- Trust functions traditionally provided by HIEs but...
- Could be provided by single or redundant independent services on the internet
- Could support trust functions for both HIEs and for newer models like DIRECT, APIs, FIHR
For EHRs

❖ "A" should only need the "address" of "B" to communicate.

❖ Each new trading partner should require
  ❖ no new interface mapping by technical IT staff, no compendiums.
  ❖ no new implementation fees by EMR or interface providers,
  ❖ no new costs for each trading partner added, or each new scenario or document exchanged with existing trading partners.

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## Core Principles

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<td>Open Standards</td>
<td>❖ All HIEs must seamlessly interconnect</td>
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<td>❖ Leverage the standard national trust systems, including patient identification, sender/receiver identification, authorization systems, and full support of core standards, etc.</td>
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<td>❖ Support record locator requests across HIEs</td>
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<td>❖ Solutions must be standards based, not proprietary to ensure competition.</td>
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<td>Seamless Communication</td>
<td>❖ ONC Interoperability roadmap</td>
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<td>❖ Sequoia project</td>
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EMR Requirements

- Send and receive all core documents and data fields defined for each supported scenario.
- Ignore optional data if it cannot be used.
- Select and present needed information in context for the clinician.
- Automatically process/analyze received data for clinical alerts and related purposes.
- Users should not have to read through a formatted Summary of Care to find the nuggets of information they seek.

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How do we get there?

**Slow path 1** - gradually develop standards over many years following the CMS Interoperability Roadmap

**Slow path 2** - quick vendor capabilities development (such as Commonwell, Care Anywhere), then slow migration to standards and universality

**Slow Path 3** - continued expansion of DIRECT and APIs to support more scenarios and documents, and solidify standards.
How do we get there?

The faster path?

- a "moonshot" approach with industry-wide standards, participation, adoption, and buyer enforcement.

Who will provide the leadership?
Help us get there

Thank you