The Interoperability Challenge

What should we focus on?

January 2015
Penn State Great Valley Conference Center

Catherine Britton
Hans Buitendijk
Today’s Talking Points

• **Interoperability is an essential capability** to enable transparent access to data across the continuum of care, patients, and research/analytical environments. *It is a means to an end*, not the end itself.

• Considering the experiences and challenges since the introduction of the 2011 Edition certification criteria and standards in support of the EHR Incentive Program:
  – What should we focus on next to improve on the state of interoperability?
  – Which process, standards, and regulatory challenges must we overcome to move the needle?

• We will provide some thoughts, ideas, and perhaps some provocative perspectives on how to make practical progress.
Interoperability is *a means to an end*

- Focusing on the goal and process support for the goal can be more important than focus on exchange standards only; e.g.,
  - Medication Reconciliation emphasized interoperability:
    - Exchange of medication lists
    - Consumption of appropriate medications
    - Standards well defined and validated
  - But securing clinical processes was the bigger challenge to medication reconciliation adoption than were technology challenges.

*Start with the end in mind.*
Interoperability is *a means to an end*

- Not focusing on interoperability makes us miss the boat; e.g.,
  - CPOE has the promise of speeding quality care: decision support on order entry, ubiquitous order availability, avoidance of transcription / communication errors.
  - Key organizations declared 100% CPOE adoption, but don’t have any interfaces in place which delays orders, requires transcription.
  - Without interoperability the value of CPOE is severely limited

*Start with the end in mind.*
Interoperability is a means to an end

- What we communicate and how it is communicated defines (enables or limits) the goal achievement

- DIRECT SMTP is mandated for patient transmission of health data.
  - But support does not exist for secure person identification.
  - Sunk real and opportunity costs into efforts toward an impractical and incomplete standard mandate that, in the end, did not achieve the goal: View Online, Download, and Transmit

- Documents have defined standards: C-CDA
  - But documents are not always appropriate, or one generic CCD is not always appropriate
  - Data element level queries may be more appropriate, perhaps in combination with summary documents
  - If what I need is active medications, is a full document too much?

Not an end itself.
So....?

• Interoperability is a *means to an end*:
  – Start with the end in mind.
  – Not an end itself.

• Therefore:
  – **Define the goal** – what is the end?
  – **Derive and validate the processes** to meet that goal
  – Define/apply the interoperability methods and standards that **support the goal most efficiently**
And then...

• Recognize that interoperability must evolve incrementally to be efficient and effective.
  – Focused, practical progression will do more to successfully improve on interoperability than a rush to the finish line
  – “Build it and they will come” without verification of appropriateness to goal and process support risks wasted time and effort.

• Imposing the pain of innovation, the inevitable learning, **ON ALL** is demoralizing and diverts our focus from more important and effective efforts.
What is “The End”?  

- Quality improvement and cost containment via Care Coordination through: 
  - full health record available to and contributed by  
  - all stakeholders, including patients,  
  - where/to whom it’s needed,  
  - when it’s needed,  
  - in the form it’s needed.  

- That is a tall order. Prioritization and derivation needed.  
  - Nothing is Free, Bandwidth is limited. **Do the most important things, well.**
Example: View, Download, & Transmit

• The End:
  – Patient Engagement in their healthcare to enable better health.
  – Establish patient-portal affinity for further engagement; e.g., provider communication, patient generated health data

• The Means:
  – EHR – Portal connectivity missing – Creating portal proliferation
  – No infrastructure for patients – no certificates.
  – C-CDA document type/content inappropriate in some cases as specified or process supported (e.g., all results, problems, etc.)
  – Patient desire / ability to participate not adequately defined

• The Result:
  – Providers implementing multiple portals. Patients having multiple access points and no affinity.
  – Providers unhappy with content/process of C-CDA. Patients?
  – “Transmit” does not work.

• The Recommendation:
  – Establish trusted person identity framework
  – Establish edge protocols for EMR-Portal interoperability to support consolidation
  – Establish provider discretion and vet value of C-CDA implementation
Example: Public Health

• The End:
  – Federal and State insight into population health to manage overall health status and combat outbreaks. (comprehensive push)
  – Provider and patient access to patient data to make appropriate point-of-care decisions (effective view)

• The Means:
  – Patient identity and privacy and security not harmonized.
  – Any one patient’s data may be in many repositories.
  – Incomplete contribution by providers; e.g., neighborhood pharmacies
  – Multiple federal implementation guide options to push data to the state and federal level registries, with multiple state variances that are not synchronized.

• The Result:
  – Continued development costs for duplicate and/or conflicting implementations driving costs up, reducing investment in other things, while not achieving the end goals

• The Recommendation:
  – Establish person identity framework
  – Ensure value / completeness of available data
  – Curtail additional push standards where value does not warrant expense
  – Establish record location and valuable view interoperability for provider-patient point of care goal
  – Consider health agency communication of best practice guidance? Infobutton?
Example: ToC vs Continuity of Care vs Closed Loop Referral

• The End:
  – Not clear? … or maybe not aligned?
  – Market movement toward continuity of care – making health data available in HIEs for authorized when and in the form other providers needed – I push, you pull
  – TOC is push of information to directed person(s)/venue(s) known when the patient transfers but does not secure the referral/transfer (CLR) nor make the information available for unpredicted destinations

• The Means:
  – Transport nicely defined with DIRECT. XDR/SOAP defined as cost effective option
  – Lacked provider directories and trust frameworks making directed recipient routing inefficient and challenging for P&S

• The Result:
  – Push only, thus not fully fitting Transitions of Care, Continuity of Care
  – No “order” for referral(s)/transfer with C-CDA as the payload so no means for tracking the referral source, destination, accomplishment
  – Provider concerns with C-CDA implementation similar to VoDT
  – Patient identity / matching challenges for efficiency and accuracy

• The Recommendation:
  – Vet and align goal(s)
  – Vet and align workflow processes and related interoperability method within the goal(s), always push, push and pull, “order” and “result” or “acknowledge”?
  – Establish person identity, directory and trust frameworks
Example: Upcoming UDI

• The End:
  – High level value propositions defined
  – Order, implant, and track the right device for the right patient, across care venues and oversight stakeholders.

• The Means:
  – Device identity established. Good start.
  – Use Cases / process flows from ordering to selecting/patient verification, documentation at point of care, communication to EMR, communication to other venues/providers/registries/vendors not defined
  – Supporting Standards promoted or evolving without vetted view of use case and process flow

• The Result:
  – MU measures so far promoting “lists”.
  – Anticipated device information capture approach forecasts workflow, process, and interoperability gaps.

• The Recommendation:
  – Vet the prioritized goal(s) relative to other initiatives
  – Establish the use cases / process flows
  – Establish the end-to-end interoperability standard coverage and appropriateness to the use cases and goal(s) through clear implementation guides and associated test tools
Example: Interoperability we are not talking about, but maybe we should?

- How about basic and effective UI interoperability? Leveraging:
  - Patient identity
  - Provider identity
  - Trust framework
  - Record location
  - Efficiency of context sharing
  - So at least a provider can view to act if not process to act?
What is involved?

• Directories – *Who is who?*
• Record Location – *Where is the data?*
• Trust framework – *Who is allowed to access and use?*
• Workflow – *When to Push or Pull?*
• Payload – *What to communicate? How is it needed?*
  – Syntax - Format
  – Semantic - Terminology
• Transport – *How does it get from here to there?*
• Edge Behavior – *What to do with it?*
• Infrastructure – *Is it practical and reliable?*
What process makes interoperability successful?

- **Use Case Elaboration** – Focus on practical, sustainable goals and processes that support them
- **Proof of Concept** – Demonstrate Value. Validate process.
- **Pilots** – Refine implementation guidance to practical, implementable solutions
- **Testing** – Validate software AND provider adherence
- **Maturation** – Honing large-scale roll-out beyond pilots
- **Staged Roll-Out** – Wide, national adoption through attestation programs
What is missing?

• Focus.

• Process validation. Incentives.

• Unambiguous implementation guides and corresponding testing tools

• Sustainable infrastructure

• Patience
In Summary

• Vet an aligned set of prioritized use cases. Keep the end in mind!
  – Increase the Signal to Noise ratio. Curtail activity in the “noise” to allocate resources to what will move the needle.
  – ENGAGE! Comment to the NPRM, ONC 10 year Interoperability roadmap…

• Ensure the “must haves” are in place:
  – Process support/incentive
  – Person identification
  – Trust framework
  – Reliable infrastructure

• Use Public-Private organizations to drive definition of standards / implementation guides AND associated testing tools

• Establish interoperability incubation programs
  – From idea to guide to connectathon to pilot(s) to initial roll-out to national roll-out

• Avoid “build it and they will come” approaches that curtail innovation or risk investment without outcome achievement
Contact Information

• Catherine Britton
  – catherine.britton@siemens.com

• Hans J Buitendijk, M.Sc., FHL7
  – hans.buitendijk@siemens.com