Wes Rishel

VP & Research Area Director

12 November 2004

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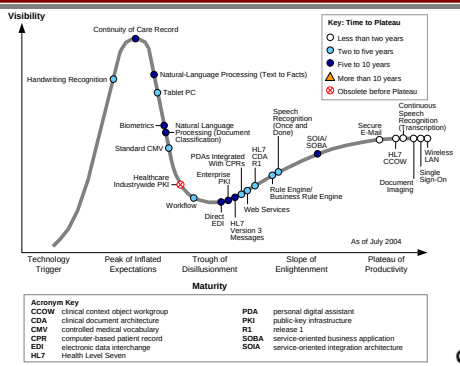
Context Setting
Gartner Healthcare Provider IT Hype Cycle 2004



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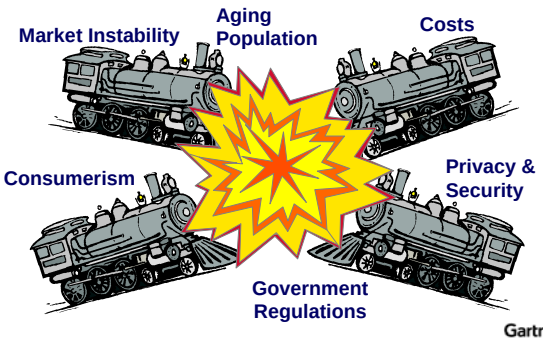
Healthcare: Heading for a Train Wreck



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Help From IT? David Brailer's 'Framework for Strategic Action'

- Inform Clinical Practice
  - Incentivize EHR adoption
  - Reduce risk of EHR investment
  - Promote EHR diffusion in rural and underserved areas
- Interconnect Clinicians
  - Foster regional collaborations
  - Develop a national health information network
  - Coordinate federal health information systems
- Personalize Care
  - Encourage use of PHRs
  - Enhance informed consumer choice
  - Promote use of telehealth systems
- Improve Population Health
  - Unify public health surveillance architectures
  - Streamline quality and health status monitoring
  - Accelerate research and dissemination of evidence

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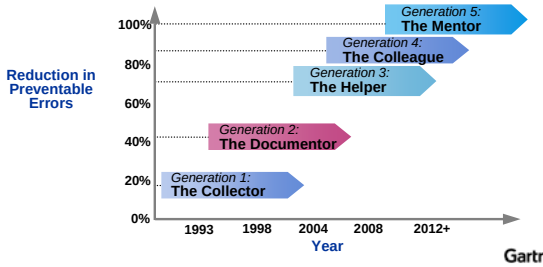
Fixing Healthcare: CPR Generation Impact on Medical Errors

"Current [medical] practice depends on ... autonomous individual practitioners, for classes of problems that routinely exceed the bounds of unaided human cognition."



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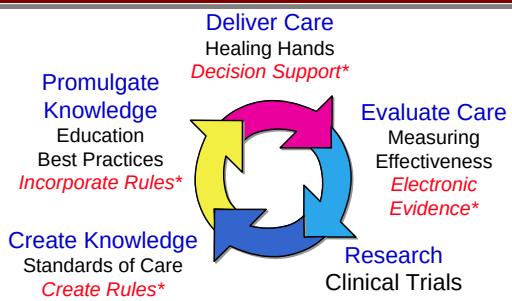
Beyond the Individual Enterprise: Shortening the Knowledge Cycle



*IT can shorten the cycle

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Son of CHIN: Regional Healthcare Information Network

The lesson of HIPAA: communicating clinical data electronically cannot be orchestrated in a single fiat.

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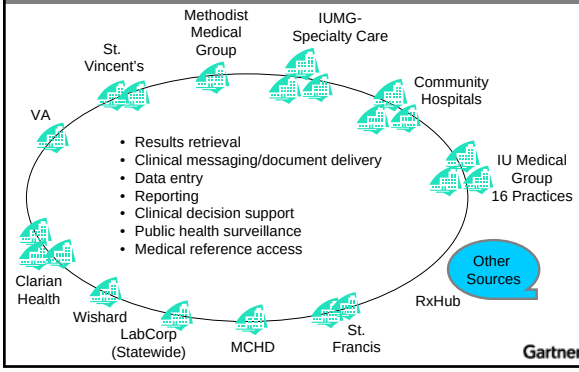
Clinical Collaboration: Indiana Network for Patient Care



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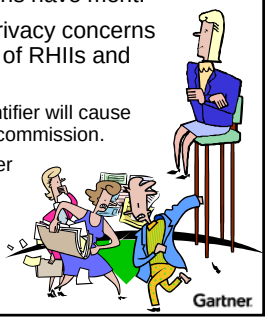
Privacy: A Blessing, a Curse, and an Architectural Fact of Life

- There is ample evidence to demonstrate that patients' privacy concerns have merit.
- Compromises to assuage privacy concerns will place limits on the utility of RHIIs and the NHII for many years.
  - Lack of a national patient identifier will cause some errors of omission and commission.
  - Providers will want control over the release of data to other providers not known to them.



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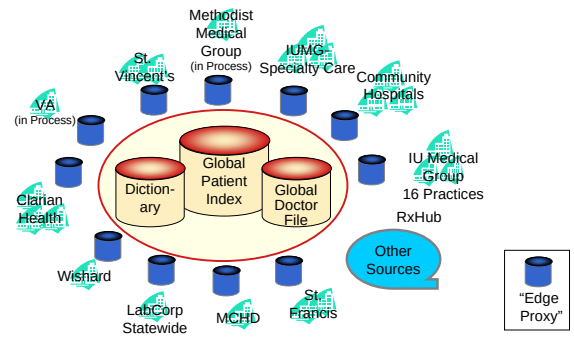
Indiana Network for Patient Care Architecture



Source: INPC

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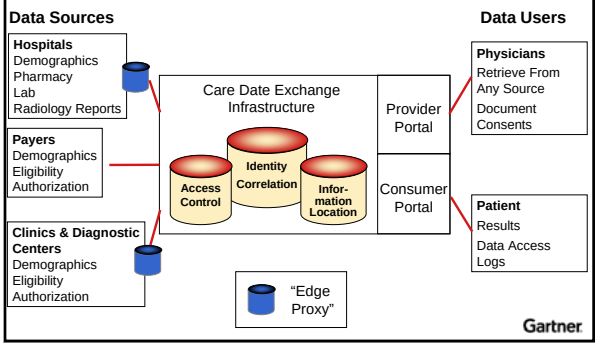
Santa Barbara County, California: A Similar Architecture for an RHII



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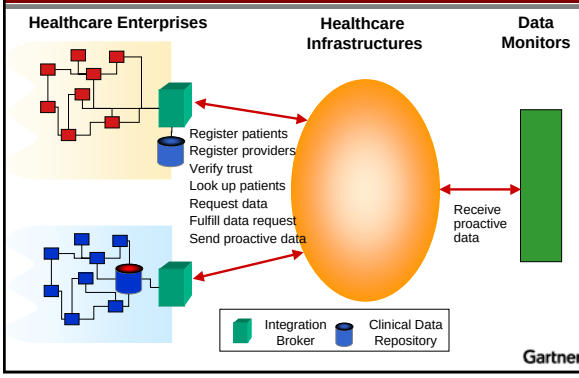
It's About the Edge Interfaces and Edge Proxies



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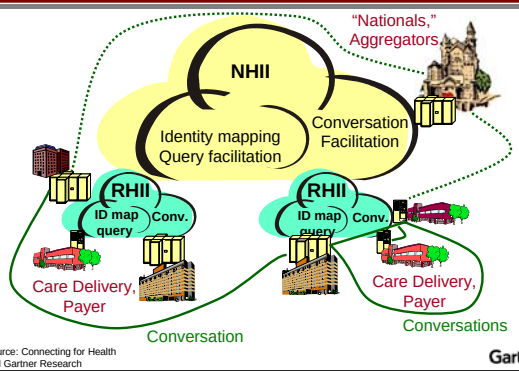
National Health Information Infrastructure: A Common 'Infoway'



Source: Connecting for Health and Gartner Research

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Pay for Performance: A Funding Source for RHINs?

Capitation, Fixed-Price Contracts, Withholds — 1990s

- Lack of trust
- Misaligned incentives
- Lack of information
- No consensus on performance metrics
- Lack of collaborative technology

Pay for Performance — 2000s

- Opportunity for collaboration
- Opportunity for incentive alignment
- Clinical information becoming available
- Information exchange technology available
- Payer-driven incentives for information exchange technology

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Structured vs. Textual Data

Discrete data fields

- Coded designations for each, e.g., serum potassium
- Supports: trending, decision support, aggregation for "evidence-based medicine," public health surveillance, etc.
- Mostly available from direct instruments and after-the-fact coding

Natural language or images

- Dictated text or, worse, handwritten notes
- Intended for interpretation by a human
- The primary format for most medical record data with long-term value
- Increasingly "semistructured"

The Big Questions: Will doctors create structured data through improved user interfaces? Will computers comprehend natural language with the certainty required for decision support?

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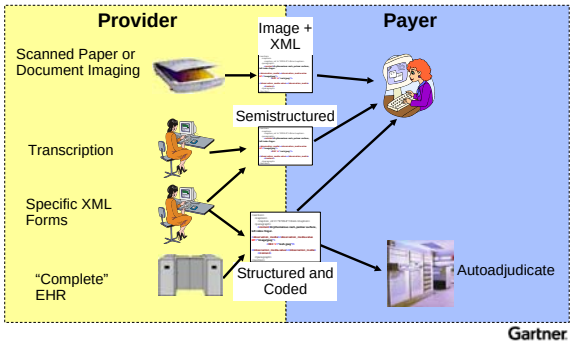
HIPAA Claims Attachments: Standards Model for the 'unHIPAA'



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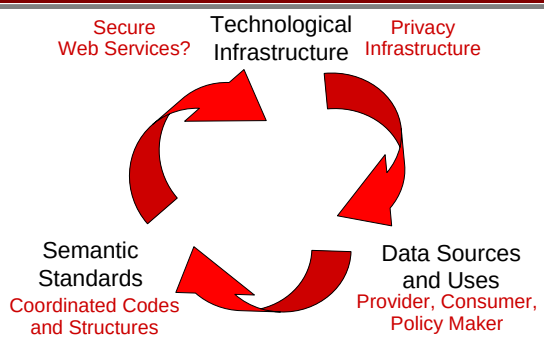
Information Ecology



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Health Level Seven

- ANSI-accredited Standards Development Organization
- Established 1987
- Approx. 2100 members
- 24 affiliates in Europe, Asia-Pacific, South America, Africa

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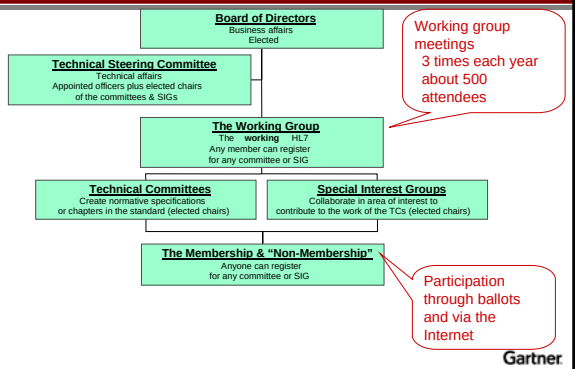
HL7 Organization



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Some HL7 Technical Committees

- Modeling & Methodology
- Patient Care
- Orders & Observations
- Electronic Health Record
- Structured Documents: Clinical Document Architecture (CDA, Structured Product Labeling*)
- RCRIM: Regulated Clinical Research Information Management

*Expected to be cited in and FDA regulation

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Some HL7 Special Interest Groups

- Genomics
- Clinical Guidelines
- Patient Safety
- Community Based Health Services
- Public Health and Emergency Response
- Imaging Integration
- Medication
- Attachments

A.K.A. "ASIG"

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ANSI Requirements

- Stipulations
  - Openness – anyone materially affected by the proposed standard can participate
  - Balance of interest – equal representation from the various constituencies
- Enforcement
  - Review of all by-laws changes
  - Certification of balloted standards
  - Biannual audit of procedures and record keeping

Every 5 years

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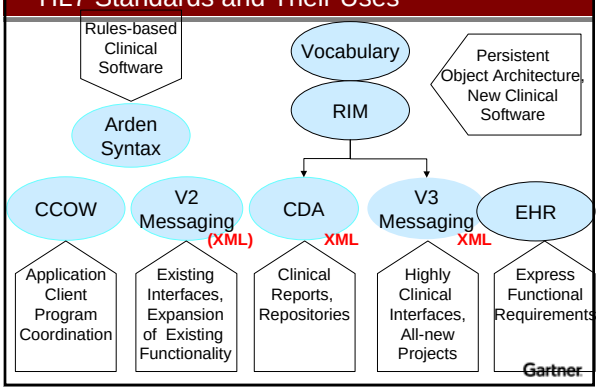
HL7 Standards and Their Uses



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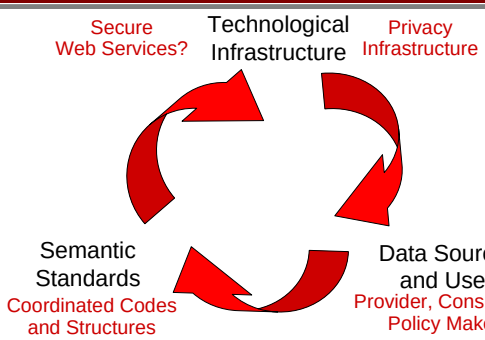
Lessons We Have Learned: Information Ecology



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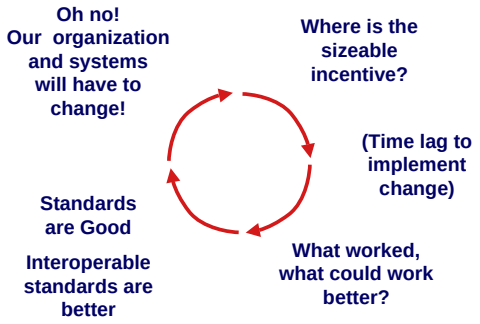
Lessons We Have Learned: Cycles and Incentives



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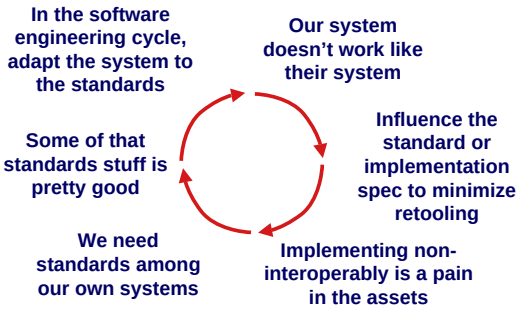
Lessons Vendors Have Learned: Cycles and Adoption



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Recommendations for Interoperable Standards

- Choose your battles well
  - specific targets with clearly defined benefits
  - accept that industry will be slow to adopt benefits based on competitiveness
  - recognize/create stakeholder incentives in a capital poor industry
  - build on existing systems
  - pilot projects
  - allow time for system evolution

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Recommendations for Interoperable Standards

- Follow accepted industry consensus approaches
  - … but compensate for the limitations of volunteer organizations
- Break the mentality of "don't put off to tomorrow what you can put off to the next fiscal year"
  - participation in consensus standard process
  - phased compliance
  - this-year incentives
  - (pilot projects)

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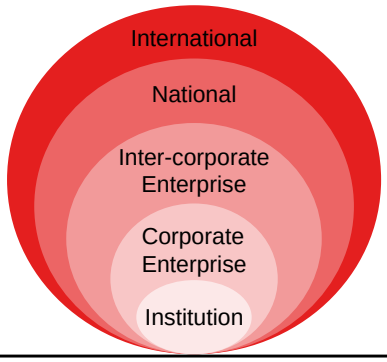
Clinical Standards Moving in Ever-Increasing Circles



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Will HL7 (or any consensus standard) Ever be "Plug and Play"?

- No
  - too general
  - supports too many use cases
  - not the whole picture (e.g., vocab & transport)
  - the economics are frequently against it
  - V 2 too successful in the US
  - *a consensus organization does not have the standing to enforce a specific interpretation of the standard*
- Yes
  - V3 + RIM + Vocab *enables* standards that approach full semantic interoperability (and a potential combinatorial explosion)
  - Organizations with the standing to enforce the standard for specific use cases have an easier job with this potent tool
  - Look for uptake
    - Where text can evolve to text + codes
    - overseas
    - in the US for new, highly clinical interfaces
    - in sync with the development cycles of products

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