Interoperability for Health and Care

2015 Update for Provider and Payer Collaborations

HIMSS Provider-Payer Community – February 27, 2015
HealthTech Net

Joe Bormel, MD, MPH

- **Former Medical Director roles with Cerner, QuadraMed and the ONC**
- **Current Medical Management / Informatic roles with Healthline**

Two Minute Interoperability Drill

- "It's been five years and 23 billion taxpayer dollars and we absolutely don't have interoperability. My doctor left his practice last year; I changed to another doctor in the same practice, spent $50 to get my chart printed out to paper and the new doctor in the same practice has no good way to take this in. In contrast, I've been doing electronic funds transfer on my smart phone."

  – *Congressional Staffer, January 2015*

- "It's been…"
  - More than **30 years**
  - Electronic health **industry revenue cycle data,** providers → payers.
  - In the **last five years**, through government-coordinated standardization including of **clinical codes, standardized exchange, and payment reform**,
  - **more than 90% of EH and EP** attested capability to
  - **send and receive** electronic **visit summary information**
  - The current visit and not the complete chart.
  - We **have reached critical mass**."

  – Data-driven case*, January 2015*

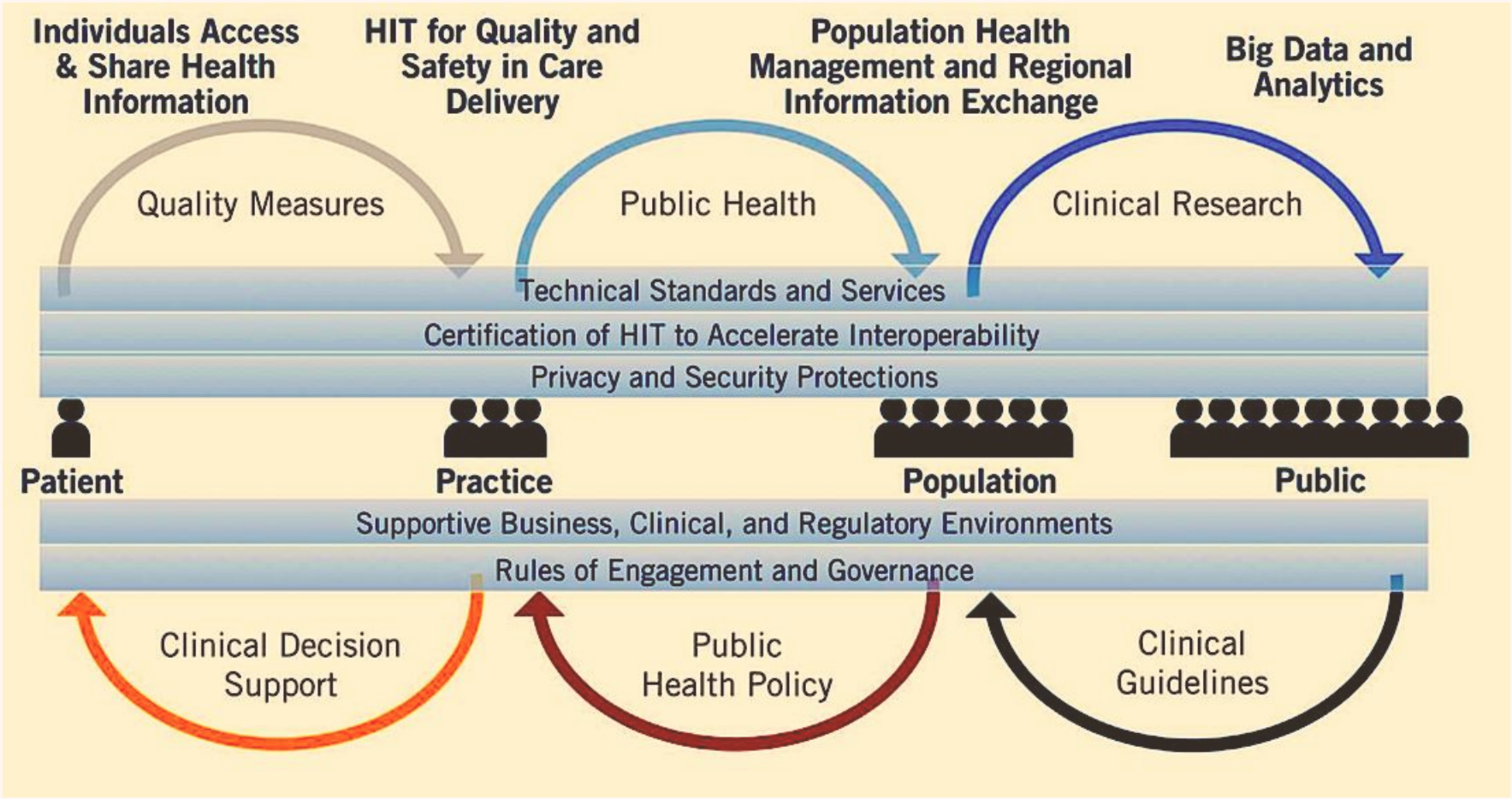
Two Minute Interoperability Drill

What's missing in the first story?

- Market Behavior
- Denominators

Ten Year Vision

The Learning Health System



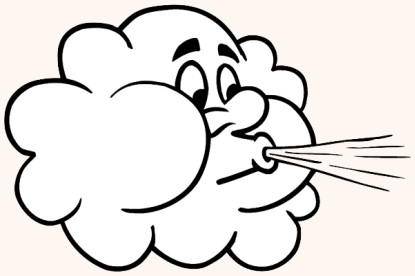
Learning Objectives

- **Challenge**
  - Understand current healthcare challenges, as they relate to the interoperable exchange of health information between consumers, providers and payers, while maintaining semantic integrity
- **Themes**
  - Understand those challenges and goals in terms of industry and government policy model and framework
- **Framework**
  - Connect the current need to deliver care efficiently with competitive quality, with care transformation under ACA

Agenda

Part One: Interoperability Concepts Defined

Part Two: Implications for Provider and Payer Collaborations



Context modeling

- "The real challenge is to "**say the right thing at the right time in the right way**." This is possible only with computational environments that take the user's **context** into account."
  - What the users are doing?
  - What they have done?
  - Where they are?
  - What they know?
  - …

Fischer G & Ostwald J. Knowledge Management: Problems, Promises, Realities, and Challenges. *IEEE Intelligent Systems*, January/February 2001, 60-72, 2001.

CIRD
Clinical Informatics Research & Development

Interoperability Example:

Heart Failure Context

- Traditional Revenue Cycle Context – ***What CFO needs to know***

Base MS-DRG	Base MS-DRG Description	IPPS Cases	ALOS	Average Charges	Average Payment	Average Cost	Case Mix Index
293-292-291	Heart failure & shock	230	4.8000	$71,913	$10,694	$14,950	1.1598
195-194-193	Simple pneumonia & pleurisy	188	5.5479	$74,320	$10,160	$14,795	1.0711
872-871	Septicemia or severe sepsis w/o MV 96+ hours	179	6.9832	$105,207	$15,668	$21,331	1.6067
470-469	Major joint replacement or reattachment of lower extremity	127	3.7874	$108,116	$19,658	$22,727	2.0582

- Clinical Context --- ***What CMO needs their providers to know***

how was it diagnosed,
what is the current EF,
what is the status of the coronary arteries,
what is the medication regimen (what has and has not worked),
who is the cardiologist (if there is one),
when was the last cardiology visit,
what is the ideal weight, etc.

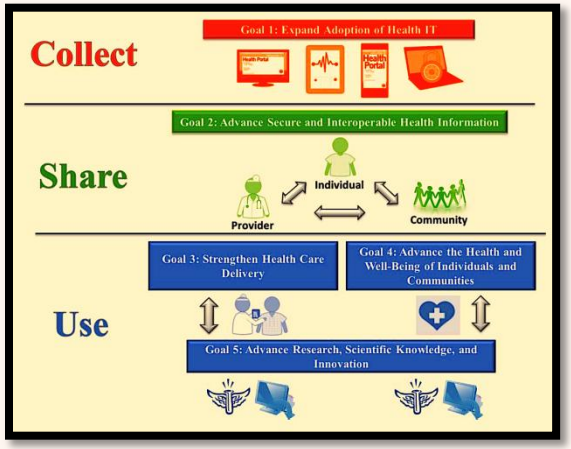
Source of "Clinical Context needs: Recent 2014 listserv thread from AMDIS

Interoperability Definitions

- **Simple**

The transport and effective use of things, from one party to another. Things are information, electrical plugs, cell phones, services (e.g. APIs) and commercial services (e.g. Uber Ride Sharing, Flywheel, Lyft).

- **ONC**
  - IEEE definition "the ability of two or more systems or components to **exchange** information and to **use** that exchanged information"
  - "Exchange and Use" → "Collect, Share, Use"
  - Ease: "without special efforts on the part of the customer"



Interoperability Metaphors

- Comparative
  - Railroad Specifications
  - Cell Phones / Networks
  - International Electrical Plugs
  - “Public” APIs (see JASON Task Force)
  - ~~Hailing any cab from any smartphone~~
- Valuation Thinking
  - Standardize the platform and don’t build
  - Glass
    - Half-Full versus Half-Empty
    - Value of the milk in the glass

Interoperability

May mean different things:

Interoperability

From Wikipedia, the free encyclopedia

Interoperability is the ability of making systems and organizations work together (inter-operate). While the term was initially defined for information technology or systems engineering services to allow for information exchange,[1] a more broad definition takes into account social, political, and organizational factors that impact system to system performance.[2]Task of building coherent services for users when the individual components are technically different and manage by different organizations[3]

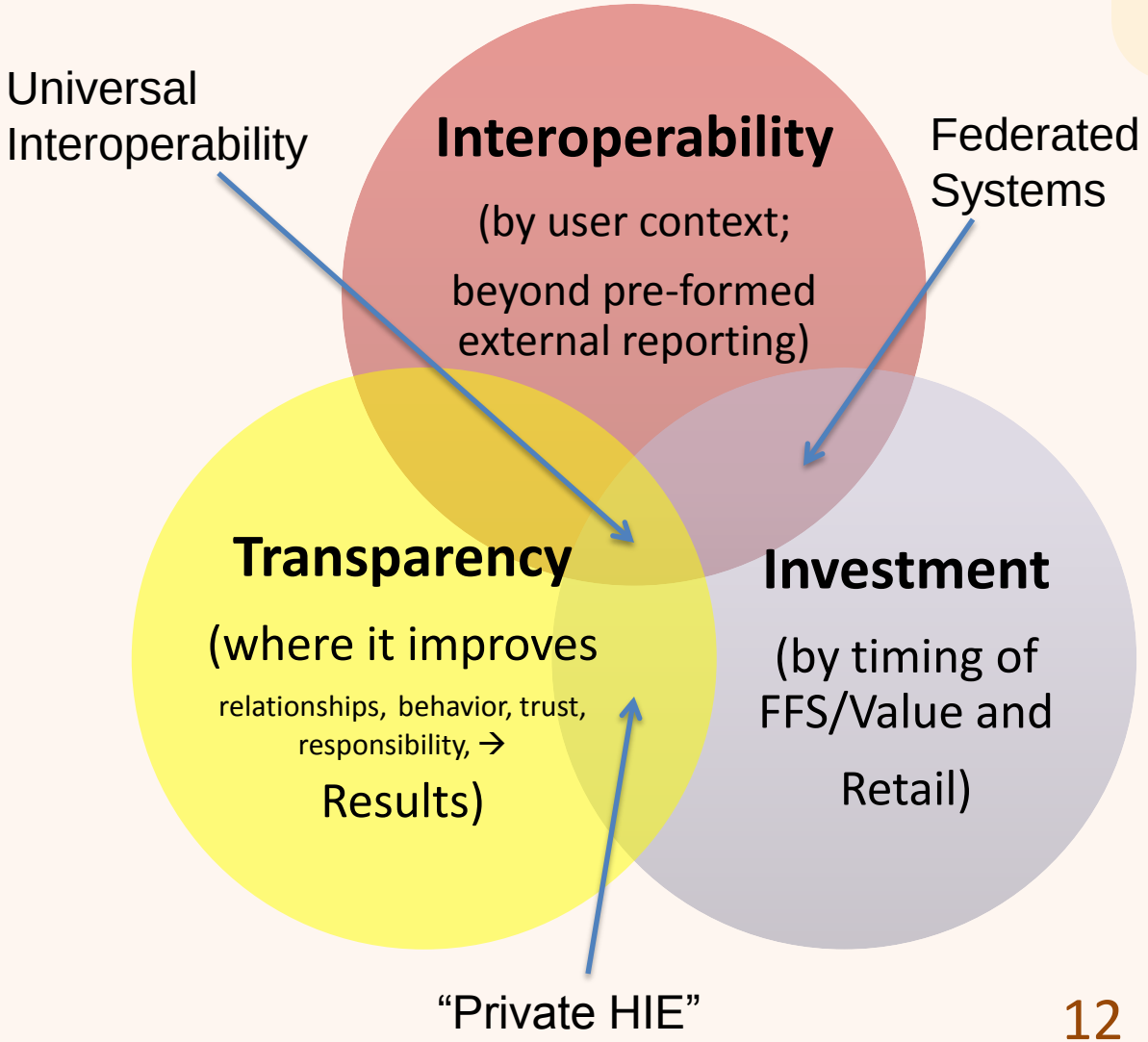
Contents [hide]

The HIMSS Board approved the following definition of interoperability on April 5, 2013:

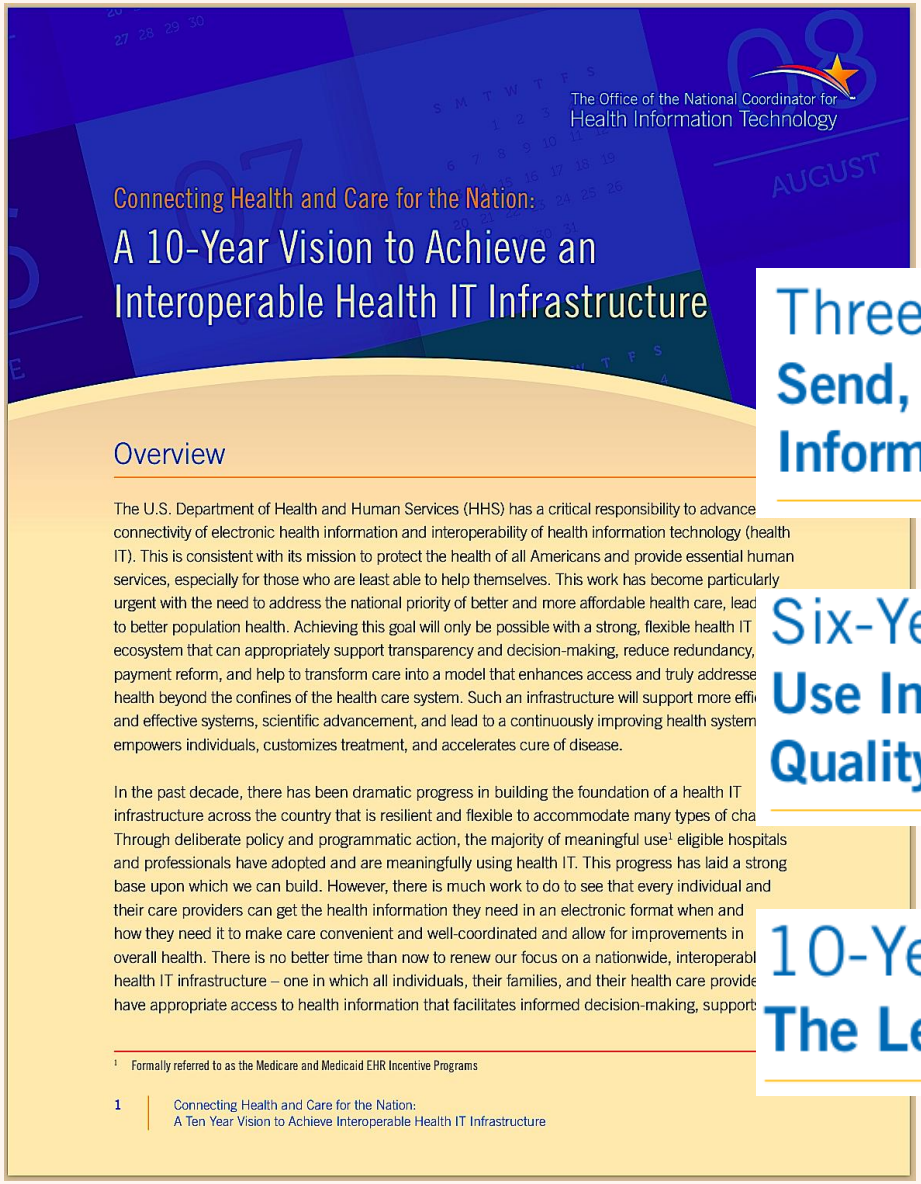
In healthcare, interoperability is the ability of different information technology systems and software applications to communicate, exchange data, and use the information that has been exchanged. Data exchange schema and standards should permit data to be shared across clinicians, lab, hospital, pharmacy, and patient regardless of the application or application vendor. Interoperability means the ability of health information systems to work together within and across organizational boundaries in order to advance the effective delivery of healthcare for individuals and communities. There are three levels of health information technology interoperability: 1) Foundational; 2) Structural; and 3) Semantic.[12]

http://en.wikipedia.org/wiki/Interoperability

Interoperability Definitions



ONC Concept Paper - June 2014



The Office of the National Coordinator for Health Information Technology

Connecting Health and Care for the Nation:

A 10-Year Vision to Achieve an Interoperable Health IT Infrastructure

Overview

The U.S. Department of Health and Human Services (HHS) has a critical responsibility to advance connectivity of electronic health information and interoperability of health information technology (health IT). This is consistent with its mission to protect the health of all Americans and provide essential human services, especially for those who are least able to help themselves. This work has become particularly urgent with the need to address the national priority of better and more affordable health care, lead to better population health. Achieving this goal will only be possible with a strong, flexible health IT ecosystem that can appropriately support transparency and decision-making, reduce redundancy, payment reform, and help to transform care into a model that enhances access and truly addresse health beyond the confines of the health care system. Such an infrastructure will support more effi and effective systems, scientific advancement, and lead to a continuously improving health system empowers individuals, customizes treatment, and accelerates cure of disease.

In the past decade, there has been dramatic progress in building the foundation of a health IT infrastructure across the country that is resilient and flexible to accommodate many types of cha Through deliberate policy and programmatic action, the majority of meaningful use[1] eligible hospitals and professionals have adopted and are meaningfully using health IT. This progress has laid a strong base upon which we can build. However, there is much work to do to see that every individual and their care providers can get the health information they need in an electronic format when and how they need it to make care convenient and well-coordinated and allow for improvements in overall health. There is no better time than now to renew our focus on a nationwide, interoperabl health IT infrastructure – one in which all individuals, their families, and their health care provide have appropriate access to health information that facilitates informed decision-making, support

[1] Formally referred to as the Medicare and Medicaid EHR Incentive Programs

1 | Connecting Health and Care for the Nation: A Ten Year Vision to Achieve Interoperable Health IT Infrastructure

Three-Year Agenda:

Send, Receive, Find, and Use Health Information to Improve Health Care Quality

Six-Year Agenda:

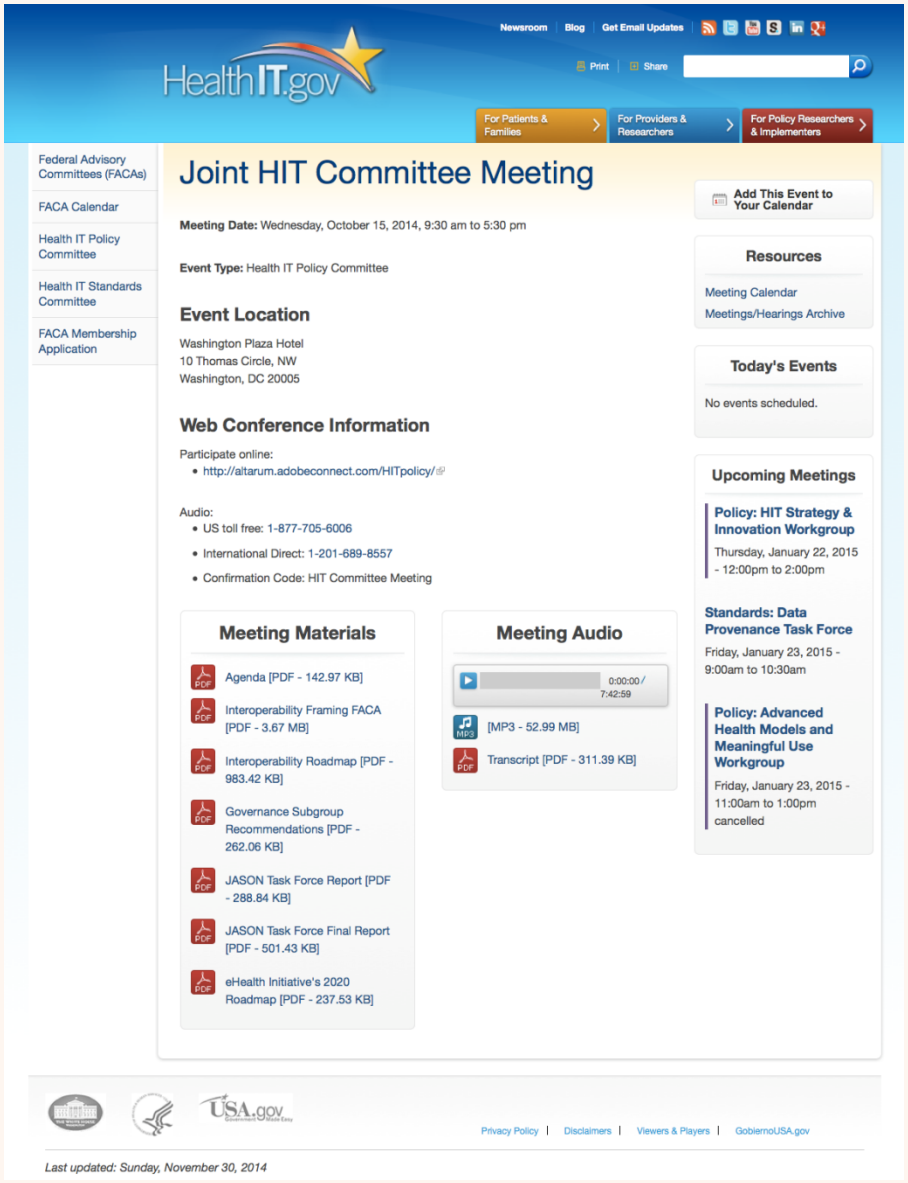
Use Information to Improve Health Care Quality and Lower Cost

10-Year Agenda:

The Learning Health System

http://www.healthit.gov/sites/default/files/ONC10yearInteroperabilityConceptPaper.pdf

ONC Framing – October 2014



Erica Galvez

Interoperability and Exchange Portfolio Manager, ONC

http://www.healthit.gov/facas/calendar/2014/10/15/joint-hit-committee-meeting

Five Building Blocks

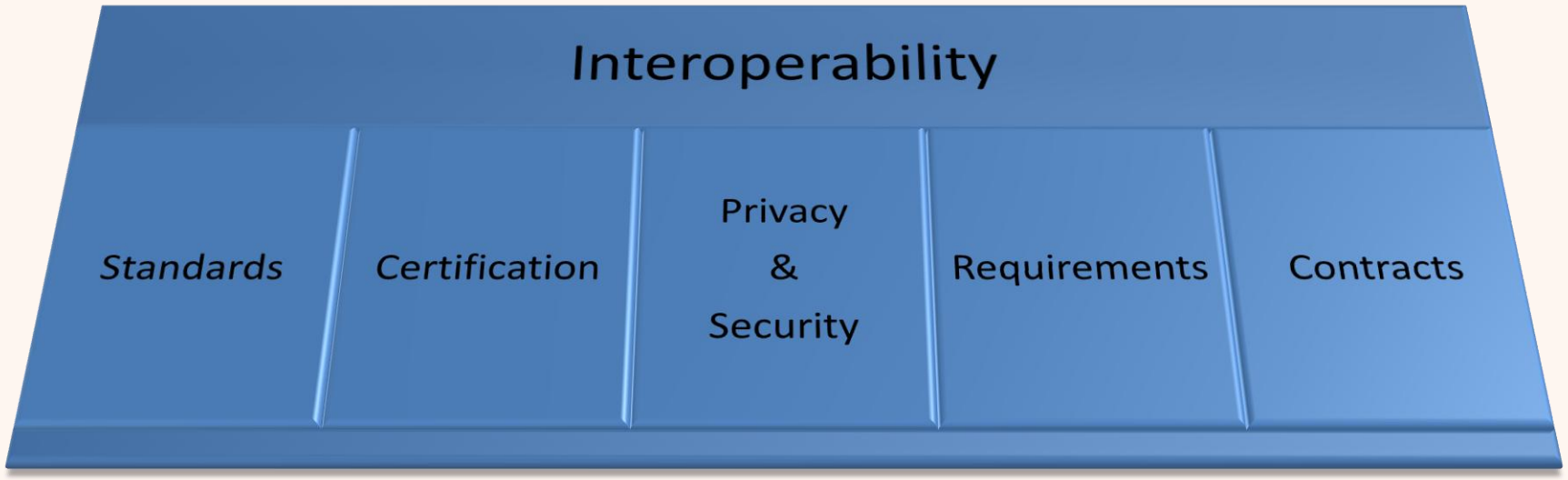
How will we get there?

It will take a strategic and focused effort by the federal government, in collaboration with state, tribal, and local governments and the private sector. We will aim to develop a shared agenda that focuses on five critical building blocks for a nationwide interoperable health information infrastructure:

1. Core technical standards and functions
2. Certification to support adoption and optimization of health IT products and services
3. Privacy and security protections for health information
4. Supportive business, clinical, cultural, and regulatory environments
5. Rules of engagement and governance

These building blocks are interdependent and progress must be incremental across all of them over the next decade to realize this vision. We will develop a more comprehensive set of use cases and goals for three, six and ten-year timeframes that will guide work in each of the building blocks, including alignment and coordination of prioritized federal, state, tribal, local, and private sector actions.

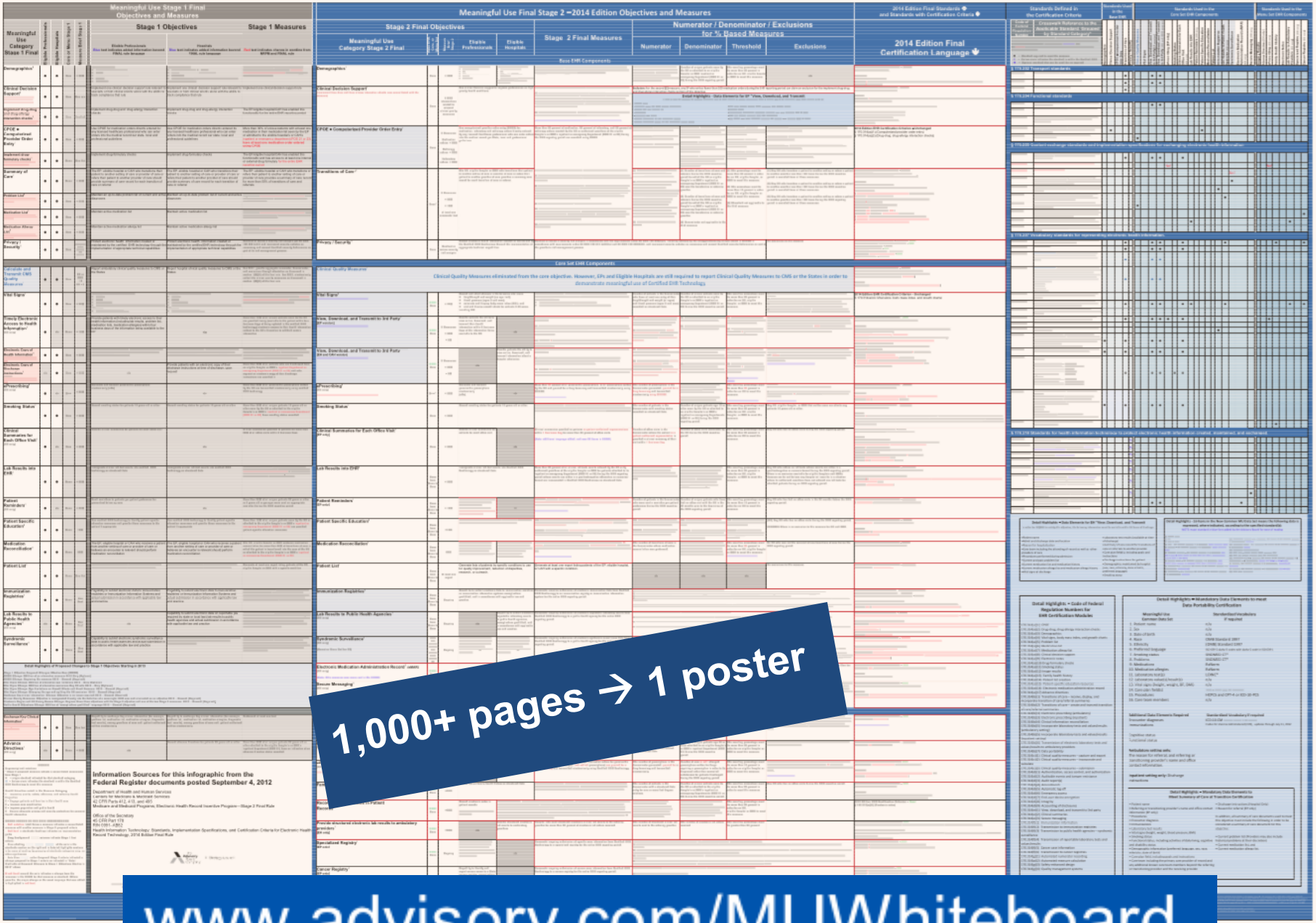
Five Building Blocks



What Do The Standards Look Like?

Standards Defined in the Certification Criteria		Standards Used in the Base EHR					Standards Used in the Core Set EHR Components																	Standards Used in the Menu Set EHR Components								
Code of Federal Regulation Number	Crosswalk Reference to the Applicable Standard, Grouped by Standard Category*	Demographics	Clinical Decision Support	CPOE – Computerized Provider Order Entry	Transitions of Care	Privacy / Security	Clinical Quality Measures	Vital Signs	View, Download, and Transmit to 3rd Party [EP version]	View, Download, and Transmit to 3rd Party [EH and CAH version]	ePrescribing [EP only]	Smoking Status	Clinical Summaries for Each Office Visit [EP only]	Lab Results into EHR	Patient Reminders [EP only]	Patient Specific Education	Medication Reconciliation	Patient List	Immunization Registries	Lab Results to Public Health Agencies [EH only]	Syndromic Surveillance	Electronic Medication Administration Record (eMAR) [EH only]	Secure Messaging [EP only]	Imaging Results	Advance Directives [EH only]	ePrescribing [EH only]	Family Health History	Electronic Notes	Lab Results to Ambulatory Providers [EH only]	Specialized Registry [EP only]	Cancer Registry [EP only]
*NOTE - In this table when a standard is referenced only by the Code of Federal Regulation number in another standard, for ease of reading, the Advisory Board has added the standard name or explanation in **bold blue** font. The **red font** indicates a change from the NPRM in this column and a delete standard in the final rule. ● = Standard required to meet the measure ○ = Hollow circle indicates the standard is within the Certified EHR ● = Optional standard that can be used but no required																																
§ 170.202 Transport standards																																
§ 170.202(a)	ONC Applicability Statement for Secure Health Transport				●				●	●																						
§ 170.202(b)	ONC XDR and XDM for Direct Messaging Specification				●				●	●																						
§ 170.202(c)	ONC Transport and Security Specification				●																											
§ 170.204 Functional standards																																
§ 170.204(a)	Accessibility. Standard. Web Content Accessibility Guidelines (WCAG) 2.0, Level A Conformance								●	●																						
§ 170.204(b)	HL7 Version 3 Standard: Context-Aware Retrieval Application (Infobutton)																															
§ 170.204(b)(1)	Implementation specifications. HL7 Version 3 Implementation Guide: URL-Based Implementations of the Context-Aware Information Retrieval (Infobutton) Domain																															
§ 170.204(b)(2)	Implementation specifications. HL7 Version 3 Implementation Guide: Context-Aware Knowledge Retrieval (Infobutton) Service-Oriented Architecture Implementation Guide		●													●																
§ 170.204(c)	Clinical quality measure by measure data. Data Element Catalog, (incorporated by reference						●																									
§ 170.205 Content exchange standards and implementation specifications for exchanging electronic health information																																
§ 170.205(a)(3)	Standard. HL7 Implementation Guide for CDA® Release 2: IHE Health Story																															

www.advisory.com/MUWhiteboard


1,000+ pages → 1 poster
www.advisory.com/MUWhiteboard

Agenda

Part One: Interoperability Concepts Defined

Part Two: Implications for Provider and Payer Collaborations

Where Does This Leave Providers and Payers?

In summary so far:

- **Progress**
- **Programs**
- **Data Limitations**
- **Data Processing**
- **People**
- **Unprecedented Change**

Providers and Payers
don't have the option of managing the existing system or standing still

"We must live by the 3 foot rule"

"One can't simply manage an existing system, for the unstable environment continually threatens to render any given structure and set of policies out of synch with its demands and opportunities."

Peter B. Vaill, *Managing as a Performing Art*, Jossey-Bass, Inc. 1989

Interoperability at 3 Feet

Consumer Price Transparency – WellMatch Health

https://www.wellmatchhealth.com/

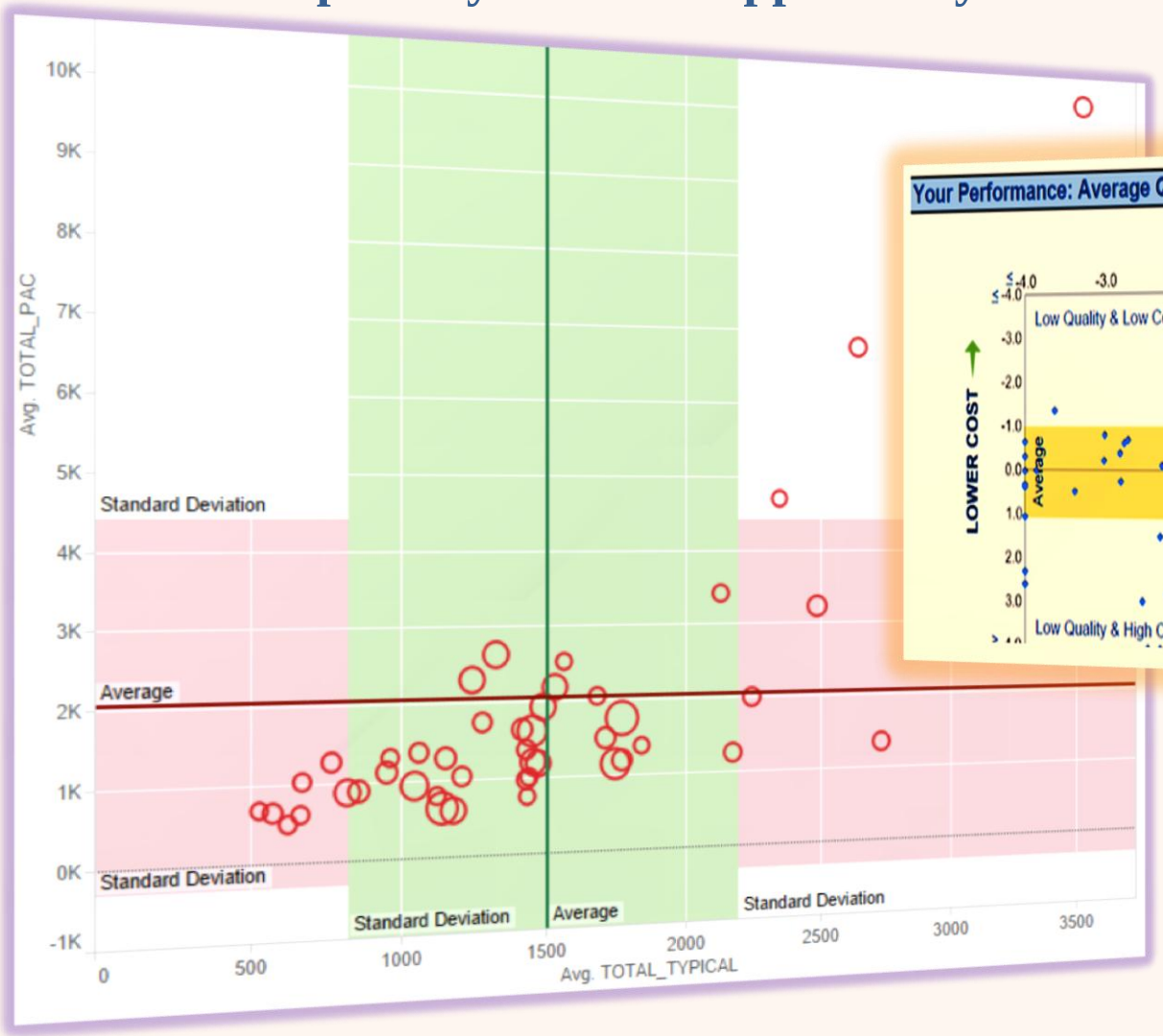
- Cost and Complications, resulting from the transparency created by interoperability create increased need to understand and track costs, quality and access, by both providers and payers.
- The Weather context problem: Varying contexts can make summarizing and interpreting price data both powerful and, in some cases, misleading.
- "Race to the bottom" and data quality requires heightened vigilance

Claims + EHR – Multiple Provider/Payer initiatives to improve longitudinal views and improve coding specificity

- Improving clinical data capture and reporting, to improve transitions of care, ICD-9/10 specificity and reimbursement under HCC code is greatly aided by interoperable systems and standards
- New, unproven workflows are required (Med Rec was easy?)

Interoperability

Transparency: Clinical Opportunity and Risk:

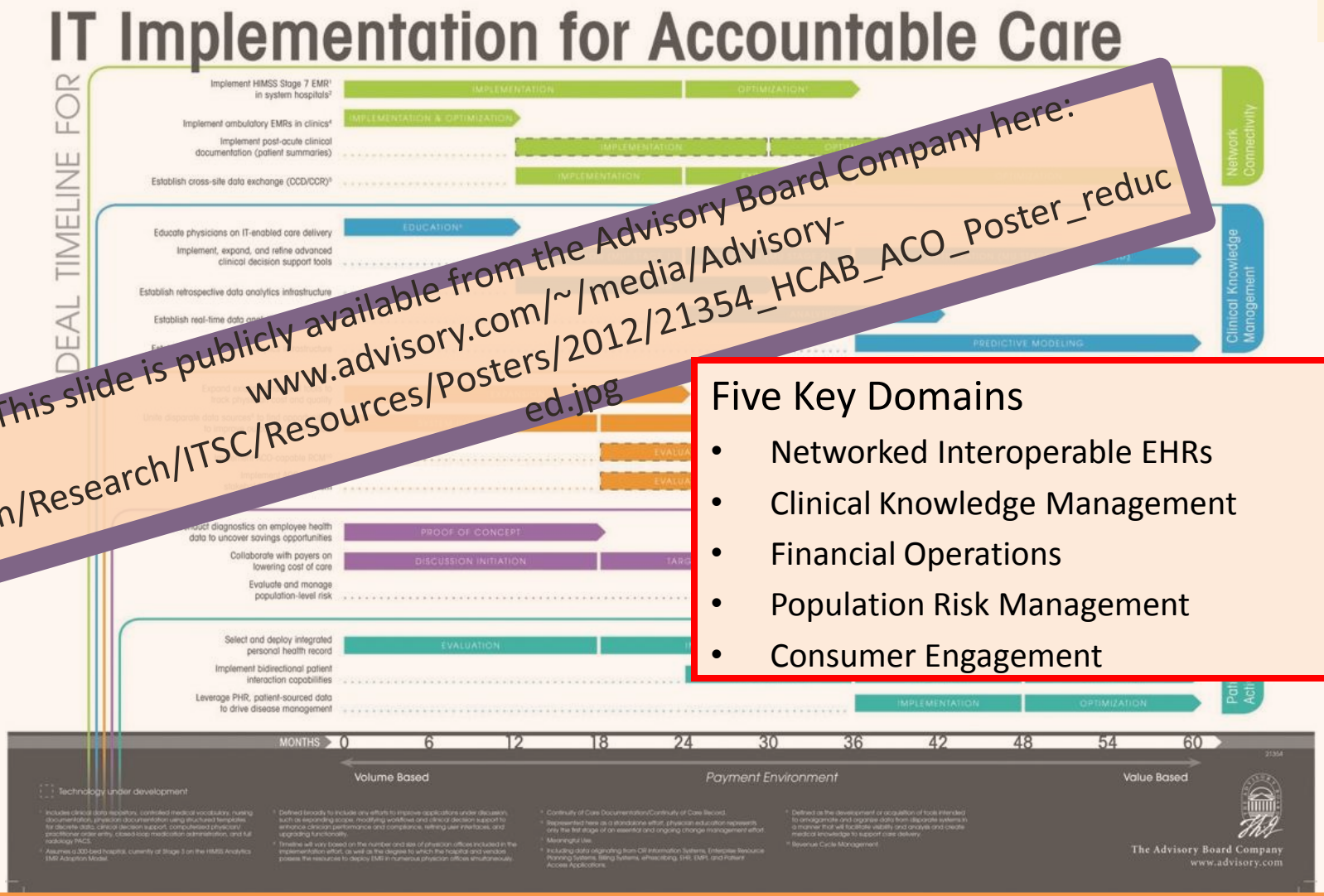


Reference: portal.cms.gov

Reference: Health Care Incentives Improvement Institute
http://www.hci3.org/content/ecr-analytics

Interoperability at 3 Feet

examples



This slide is publicly available from the Advisory Board Company here:
www.advisory.com/~/media/Advisory-com/Research/ITSC/Resources/Posters/2012/21354_HCAB_ACO_Poster_reduced.jpg

Five Key Domains

- Networked Interoperable EHRs
- Clinical Knowledge Management
- Financial Operations
- Population Risk Management
- Consumer Engagement

5 Key Domains and 5 Building Blocks, Simultaneous Motion

Advances in interoperability require management oversight and program coordination that wasn't previously necessary or possible.

Five Building Blocks of Interoperability

- Standards
- Certification
- Privacy & Security
- Requirements
- Contracts

Five Key Domains

- Networked Interoperable EHRs
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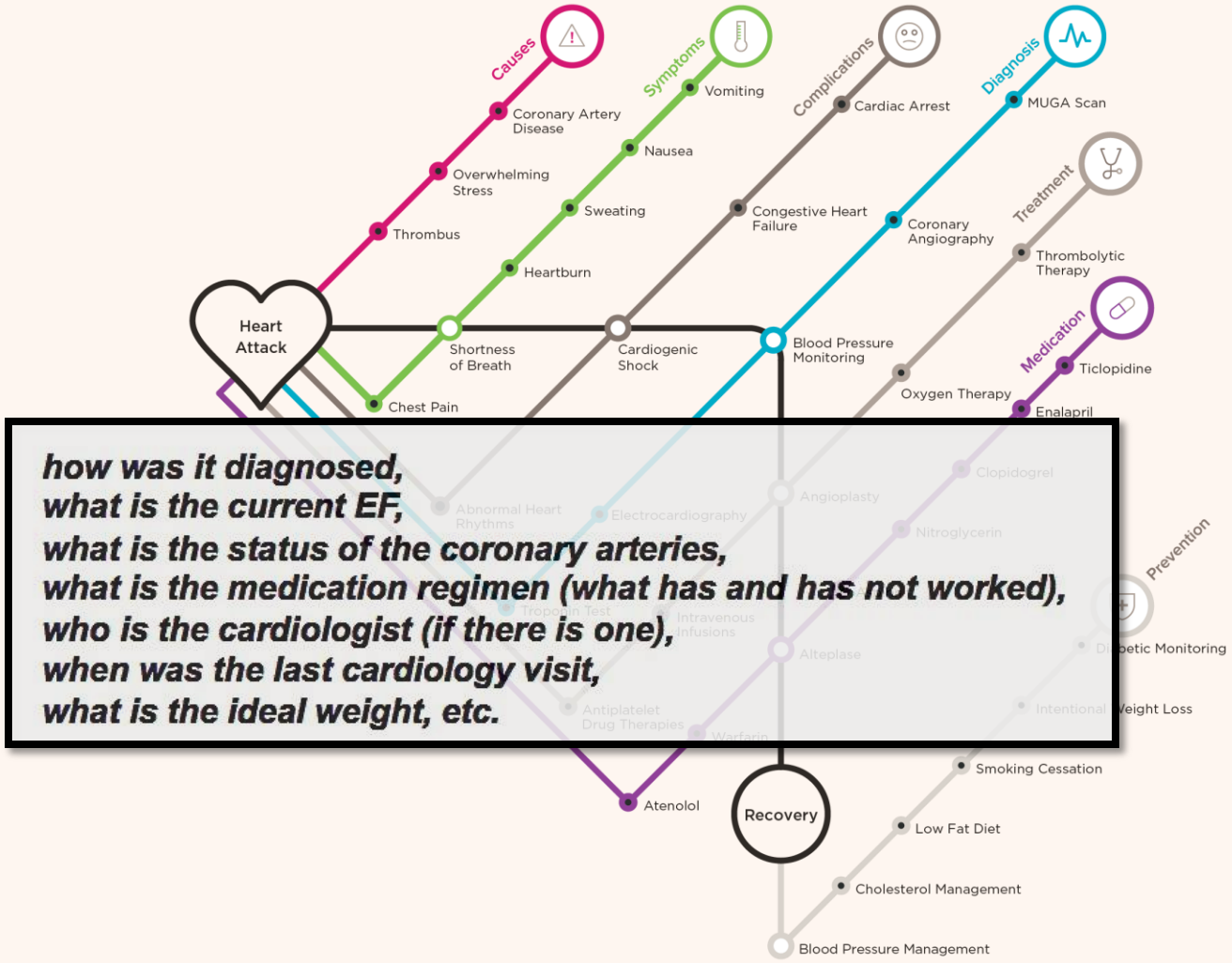
Bridging The Domains

Clinical Summarization using Healthcare Taxonomies
Mapping Semantic Relationships, From Curated Knowledge Bases



how was it diagnosed,
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who is the cardiologist (if there is one),
when was the last cardiology visit,
what is the ideal weight, etc.

See ‘Our Story’ at http://corp.healthline.com/about-us/ for more information

Interoperability – Analytics:

(Materials drawn from a January 2015 webinar from The Advisory Board Company – Health Care IT Advisor, by director Jim Adams - http://www.advisory.com/expert-directory/jim-adams)

From Individual Inputs to Consumer Products

Designing Around Purchaser Preferences

Current Health Care Production Model

- Office Visits
- Imaging
- Lab
- Emergency Care
- Inpatient Procedures
- Outpatient Procedures
- Wellness Programs
- Long-Term Care
- Pharmacy

Product Packaging

Shoppable Procedures
Diagnostics, surgery, follow-up care, planned treatments

Emergent Care
Low-to-mid acuity urgent care, emergency care

Enhanced Management
Care/disease management, wellness, ongoing primary care

Source: Health Care Advisory Board interviews and analysis.

Preparing for the Coming Change: An Overview of the Healthcare Analytics Market

Interoperability – Analytics:

Note: Traditional Growth and New Growth Channels

Capturing New Channels of Growth

Key Decision-Makers in Traditional and New Growth Channels

Secure Enrolled Lives — *Win Share of Volumes*

Traditional Growth Channels

Entrenched Payer ← **Established Provider** → Relationship-Based Referring Physician

New Growth Channels

Custom Network Builder
Activated Employer
Vulnerable Payer
Exchange Operator
Accountable Physician Entity
Individual Insurance Shopper

→ **Care Delivery Network** →

Cost-Conscious Referring Physician
Price-Sensitive Consumer

From January 2015 webinar from The Advisory Board Company – Health Care IT Advisor, by director Jim Adams - http://www.advisory.com/expert-directory/jim-adams)

Use Deliberate Criteria to Choose Your BI Approach

Match the Approach to Your Organization's Strengths and Goals

1 Enterprise Development Platform

Broad-based functional capability to use as a basis for self development to support a belief that analytics is a differentiator

2 Analytics-as-a-Service

Application (often bundled with infrastructure) including process and analytic components, for aggregation and comparison

3 Point Solutions

Stand-alone components with narrow but deep subject matter expertise

4 EMR Subsystem

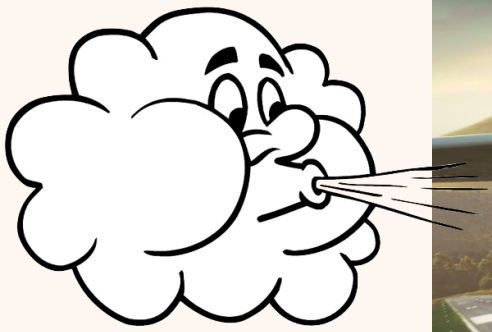
Analytic and process routines tightly integrated with the transaction systems

From January 2015 webinar from The Advisory Board Company – Health Care IT Advisor, by director Jim Adams - http://www.advisory.com/expert-directory/jim-adams)

Source: Health Care IT Suite research and analysis

Hazards with Interoperability

- Not new
- Economic model
- Asymmetrical risk assumption
- Trust
- Address process
- Identify risks in interoperability and address/mitigate
- In all communications, the context of the listener is the key



Discussion

Interoperability for Health and Care

2015 Update for Provider and Payer Collaborations

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