

GE eHealth Solutions

An Overview of Global eHealth Initiatives and Use of IHE Profiles

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Global eHealth Overview

4 Common “Diseases”:

- rising healthcare **costs** (aging populations, chronic disease)
- **inefficiencies** (scheduling, payment)
- lack of **access** (too few doctors, especially in rural areas)
- unsatisfactory **quality** (incomplete history, medication errors, etc)

4 Common “Treatments”:

- **digitization** of health information (HIS, EMR, PACS adoption)
- longitudinal EHR (**sharing** data via standards)
- chronic disease **management** (home health, devices, etc)
- consumer **empowerment** (telemedicine, personal health records)



eHealth ecosystem

value-add eHealth solutions

advanced capabilities for enhancing individual and collective health

well/disease management

clinical trials

population management

quality reporting

comparative effectiveness

decision support

provider engagement

provider-centric access

EHR

extra-office workflows

secure messaging

patient engagement

patient-centric access

PHR

tailored content

secure messaging

health information exchange infrastructure

common infrastructure manages, collects, translates and delivers data

document sharing

discrete data exchange

security

identity management

integration tools

other services

physician office

acute care

long term care

home

labs

public health



The Rise of HIT Standards

Standards enable **predictability**

- Measurement, repeatability, reproducibility

Standards enable **specialization**

- More vendors can “plug and play” in the solution

Standards **prevent “lock in”**

- Not hostage to custom solutions

Standards **reduce costs**

- Lower install and TCO costs

Key Standards



Standards enable collaboration and lower costs



GE Participation in SDOs



IHE ITI Planning – Co-chair
IHE Cardiology – Co-chair
IHE Radiology – Co-chair
IHE Patient Care Devices – Member
IHE Patient Care Coord. – Co-chair
IHE PAM, PIX and PDQ - Editor
IHE XDS-MS - Editor
IHE XDS - Editor, Co-editor
IHE ATNA, CT, XUA, EUA, PWP - Editor
IHE XD*-Lab – Contributor



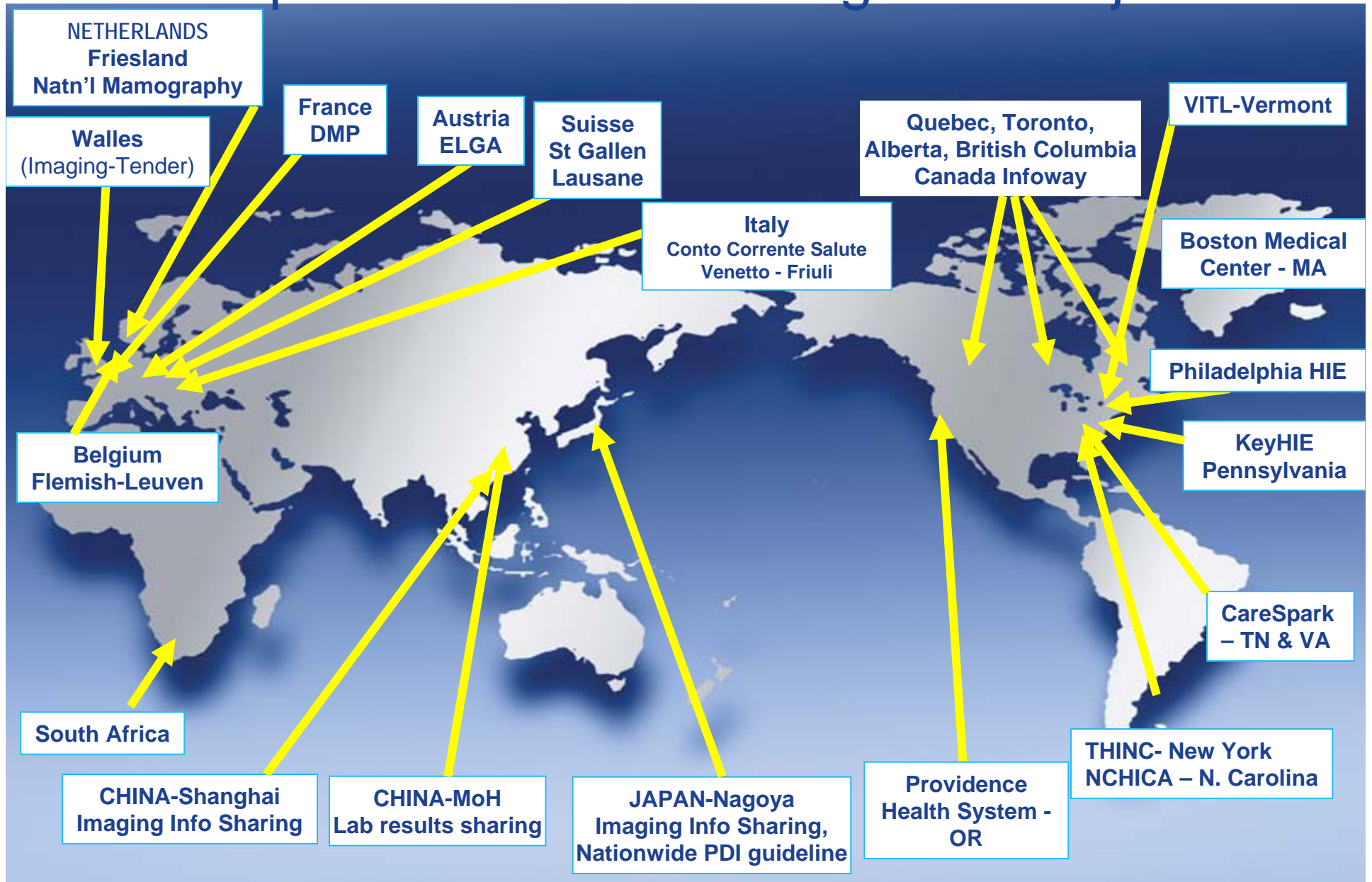
DICOM Cardiology – Co-chair



HL7 Structured Documents – Co-chair
HL7 Implementation Guide – Coeditor
HL7 Claims Attachments - Co-editor
HL 7 CCD and CRS - Co-editor
HL7 Claims Attachments - Co-editor
HL7 Architecture - Review Board
HL7 CDA - Contributor
HL7 Security - SIG - Member
HL7 Financial Management - Member
HL7 Imaging Integration - Member
HL7 ASIG - Member
HL7 Periodontal Attachment - Member
HL7 Clinical Genomics - Member

GE's unique commitment to standards

IHE, Global Standards-Based Profiles Adopted in National & Regional Projects





Canada

- Canada Health Infoway providing gated investment to accelerate development and adoption of electronic health information systems.
- Goal to have an interoperable EHR for 50% of Canadians by 2012, using international standards (**IHE**, HL7 v3).
- Multiple regional projects using XDS/XDSi (Montreal, Toronto, Alberta, British Columbia)
- Nearly all regions have plans to implement advanced applications such as CPOE, CDM, BI, clinical documentation and PHR.

“Right now I would say there’s in excess of CD\$5 billion dollars in play. We’re looking to spend about CD\$10 billion over 15 years, but the benefits are anywhere between CD\$6 -7 billion dollars on an annual basis. Where we spend a lot of money is the interconnectivity of the systems already in hospitals.”

*Richard Alvarez, CEO
Canada Health Infoway
ZocDoc Interview, August 12, 2009*



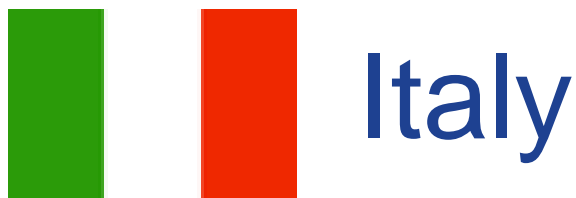
France

National DMP Project:

- Deployment of PHR for all French citizens – includes data from and connects hospitals, pharmacies, GP practices, labs
- ✓ **IHE XDS architecture at the core**
- Budget: US\$70MM for Phase 1, US\$14MM per year
- Phase 1 will last for 5 years :
 - ✓ 13 million records (20% of population)
 - ✓ 160,000 GPs, 2,800 hospitals, 1,900 labs



imagination at work



Azienda Sanitaria Locale n. 4 Chiavarese

An Italian Health Bank

- Creating an open-source implementation of the IHE XDS profile.
- In service since January 2006.
- 4 Hospitals and 500 physician offices.
- EMRs import and export documents from their local records.
- All products required to pass the IHE European connectathon in April 2005.
- Patients chose to join through one of their care providers
- Infrastructure includes:
 - ✓ XDS Registry
 - ✓ XDS Repository shared at the regional level
 - ✓ PIX for patient ID linking



imagination at work



Switzerland



- MPI network of 10 public hospitals, St. Gallen canton
 - 500,000 citizens
 - 270,000 in-patients/year
- 4 hospital regions plus 1 geriatric hospital
- Decentralized patient registration
- **IHE PIX/PDQ standards**
- Other projects underway



imagination at work



Netherlands

- The Electronic Medical Record Foundation (EZDA) of Amsterdam is leading the implementation of an Amsterdam wide XDS-I based radiology network to allow exchanges of radiology information.
- The Academic Medical Center of Rotterdam and the foundation "RijnmondNet" lead the implementation of an XDS based HIE accross the hospitals in the Rotterdam area.
- The Dutch national breast screening project. XDS is in clinical use among 3 hospitals. With pilot completion, extension planned starting in 2010.
- Access to Prescriptions and Medical summaries nation-wide through AORTA infrastructure.



imagination at work



Austria



- Austrian National project launched in 2007 (ELGA) with step-wise introduction of structured and coded content with HL7 CDA based IHE Content Profiles.
- Ministry of Health backing of IHE conformance through the IHE-European Connectathon.
- Deployment of XDS infrastructure among 7 Austrian Regions federated through IHE-XCA (consistent with NHIN).
- Three regions now on-line with XDS infrastructure in 2010 (main one being Lower Austria).
- Lower Austria with 1.8 Million patients on-line sharing CDA documents among 27 connected hospitals with 5 different EHR vendors. IHE profiles in use: XDS, PIX, XDS-SD, ATNA, XUA, BPPC.



imagination at work

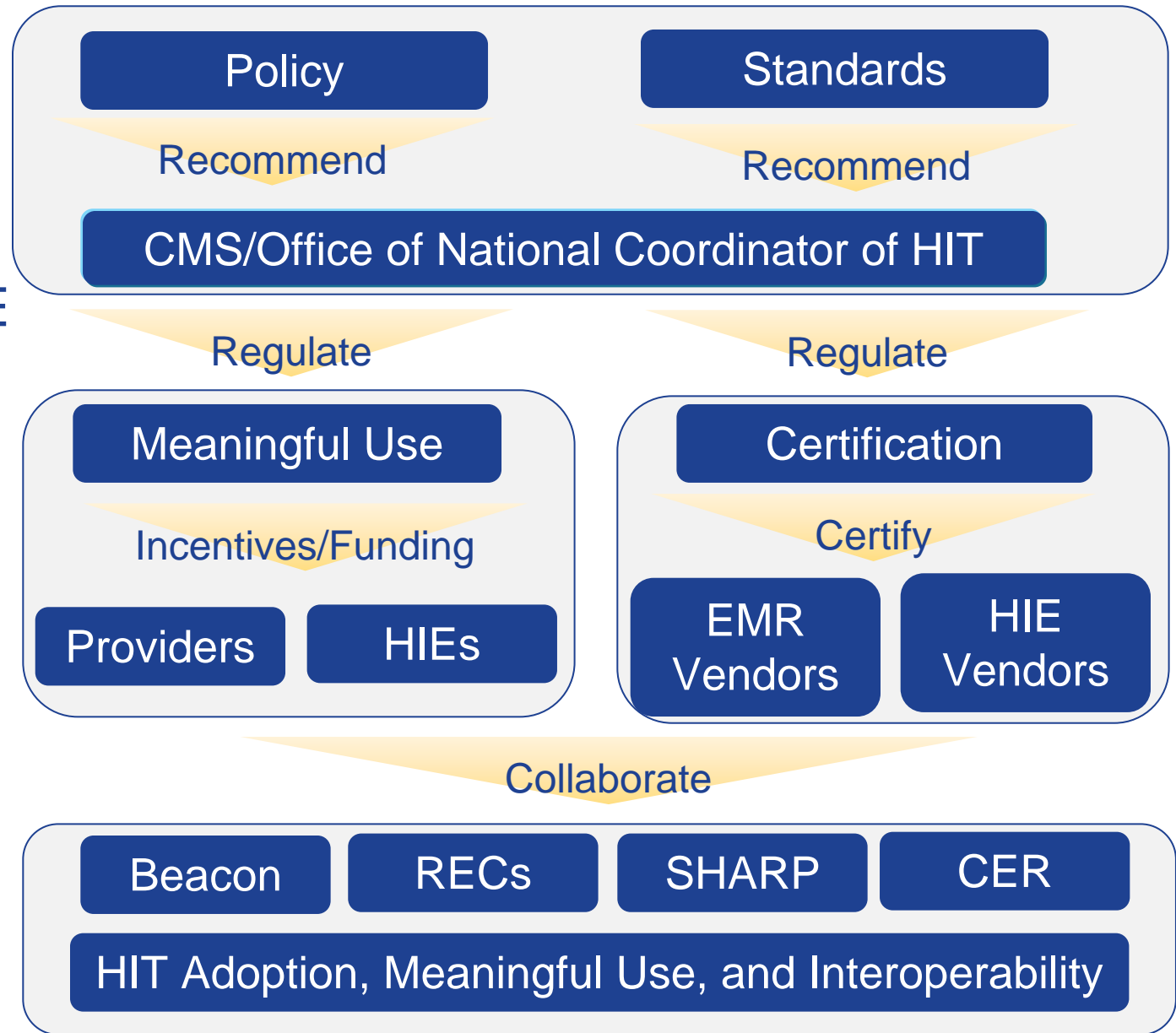


United States

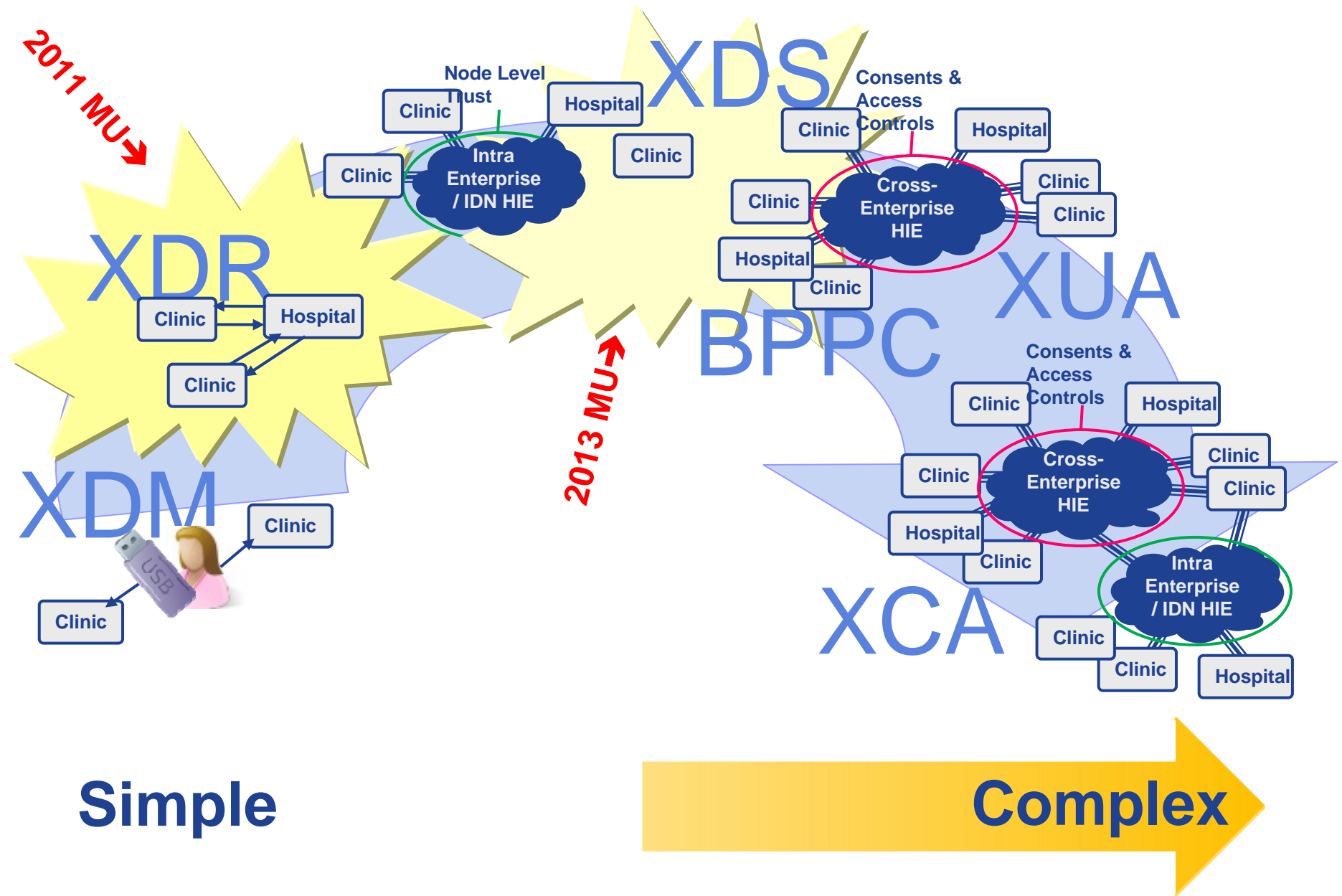
How the US government is driving adoption of EMR and HIE

It's all about **Meaningful Use**

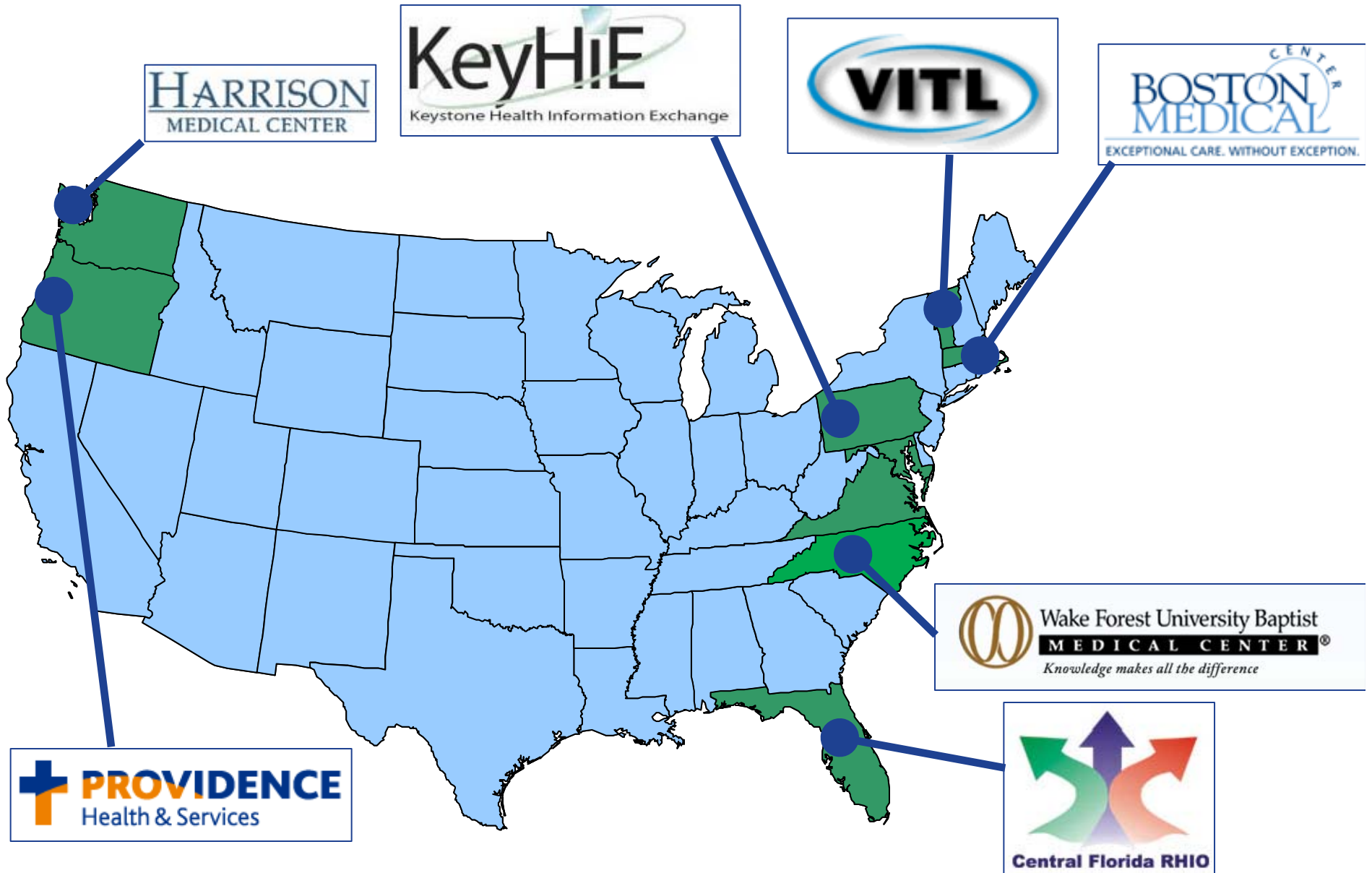
Interim Final Rule has been issued, with requirements to be updated every two years



IHE Health Information Exchange Spectrum



GE eHealth customers using IHE



GE eHealth customers using IHE



Connecting physicians and healthcare professionals in a 31 counties in central and northeastern Pennsylvania

- ✓ 13 member organizations
- ✓ Data from 8 hospitals and 31 clinics
- ✓ Used in 3 emergency departments and 3 primary care clinics
- ✓ 2.6 million patient records
- ✓ 345,000 patient authorizations
- ✓ Support the IHE framework



Addressing critical needs across Vermont as a that non-profit organization operates as a public-private partnership

- ✓ Medication history to clinicians in the ER
- ✓ Chronic disease management - patient data from EMR's to data center
- ✓ Lab results electronically delivered to Physicians' EMRs
- ✓ Adherence to Integrating the Healthcare Enterprise (IHE) framework & Healthcare Information Technology Standards Panel (HITSP)



A private, not for profit, 626 licensed bed, academic medical center emphasizing community based care

- ✓ Boston HealthNet 1995, includes BMC, Boston Univ School of Medicine, 15 Community health centers.
- ✓ Community Information Exchange (CIE) focus on sharing (IHE-XDS) medications, problems, allergies, and lab results.
- ✓ Access directly from physician's EMR
- ✓ eReferral portal utilizes the CIE base infrastructure.

GE eHealth customers using IHE



Connecting physicians and healthcare professionals in a 31 counties in central and northeastern Pennsylvania

✓ 13 member organizations

**CCD Sharing
Care Coordination**

care clinics

✓ 2.6 million patient records

✓ 345,000 patient authorizations

✓ Support the IHE framework



Addressing critical needs across Vermont as a that non-profit organization operates as a public-private partnership

✓ **Med History**
✓ **CDM** ent
✓ **Lab Workflow**

✓ Lab results electronically delivered to Physicians' EMRs

✓ Adherence to Integrating the Healthcare Enterprise (IHE) framework & Healthcare Information Technology Standards Panel (HITSP)



A private, not for profit, 626 licensed bed, academic medical center emphasizing community based care

✓ **Collaborative Charting**
✓ **eReferral**

Sharing medications, problems, allergies, and lab results.

✓ Access directly from physician's EMR

✓ eReferral portal utilizes the CIE base infrastructure.

GE eHealth customers using IHE

HARRISON MEDICAL CENTER

Harrison Medical Center, WA has grown from a small community hospital to the region's busiest medical center, 400 bed hospital, and bought Centricity EMR for their 125 community doctors.

- ✓ Selected GE to connect inpatient EMRs (Eclipsys, McKesson, etc) to outpatient EMR and "HealthLink" community network to enhance patient care
- ✓ Currently just kicking off their implementation

PROVIDENCE Health & Services

Providence is a not-for-profit network of hospitals, health plans, physicians, clinics, how health services and affiliated health services.

- ✓ Selected GE HIE Services to connect their inpatient clinical system (McKesson) with their ambulatory EMR (Centricity EMR)
- ✓ Operational for March 2010

GE eHealth customers using IHE

HARRISON
MEDICAL CENTER

Harrison Medical Center, WA has grown from a small community hospital to the region's busiest medical center. 400 bed hospital

Interoperability

GE-Eclipsys

McKesson, etc) to outpatient EMR and "HealthLink" community network to enhance patient care

✓ Currently just kicking off their implementation

 **PROVIDENCE**
Health & Services

Providence is a not-for-profit network of hospitals, health plans, physicians, clinics, and health services and

**Collaborative
Charting**

GE-McKesson

✓ Operational for March 2010

GE Customer Use of IHE/HITSP Standards

Customer Name	Clinical Content (CDA)		Infrastructure Transport		Infrastructure Security/Privacy	
	CCD	XDS-Lab	XDS	PIX/PDQ	ATNA	BPPC
VITL	Live	Live	Live	Live	Live	Live
Keystone HIE (KeyHIE)	Live	Future	Live	Live	Live	Live
Providence	Implementation	Future	Implementation	Live	Live	Live
Boston Medical Center	Live	Future	Live	Live	Live	Live
Central Florida	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation
Harrison Medical Center	Implementation	Implementation	Implementation	Implementation	Implementation	Implementation

Live
Implementation
Future

In summary – IHE is the sensible choice

4 reasons validated in the US and globally:

- Faster, easier to connect systems from multiple vendors:
 - ✓ Most EMRs support or will soon support IHE/HITSP profiles
 - ✓ Allows inpatient and ambulatory EMRs to evolve separately
- Maintain over time infrastructure vendor independence:
 - ✓ Prevents vendor “lock in” (proprietary interoperability)
- Complies with current MU (IFR) and anticipated future rules
- Reduced HIE deployment and operational costs

GE walks the talk: IHE support for these applications:

- ✓ Centricity Enterprise (Hospital EMR)
- ✓ Centricity EMR (Physician Office EMR)
- ✓ Centricity RIS-IC (Radiology)
- ✓ Centricity Enterprise Archive (Imaging & Document Archive)
- ✓ eHealth Information Exchange (eHealth Infrastructure)

Thank you for your attention.

Questions?

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