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# HL7 capabilities for working with GS1

Andrew Hinchley

**Board Member HL7 UK  
Integration Strategist Cerner Corporation**



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### Gs1 and HL7 Join Forces to Improve Patient Care and Safety

During the HL7 Board of Directors meeting in Cologne, executive leadership from GS1 addressed the HL7 Board and solicited opportunities for collaboration between our two organizations. Subsequent discussions led to the signing of a memorandum of understanding for GS1 and HL7 to collaborate to develop global healthcare standards to reduce medical errors and to increase the effectiveness of the healthcare supply chain.

For those not familiar with GS1, it is a not-for-profit organization dedicated to the design and implementation of global standards and solutions to improve the efficiency and visibility throughout supply chains.

GS1 is truly global, with local Member Organizations in 108 countries, and with Global Offices in Brussels, Belgium and Princeton, NJ. GS1 is driven by more than a million companies, who execute more than five billion transactions a day with the GS1 System of Standards. This makes it the most widely used supply chain standards system in the world. GS1's diversified portfolio ranges from GS1 Bar Codes to GS1 eCom (electronic commerce tools) to next generation technologies and solutions such as GS1 GDSN (Data Synchronization), EPCglobal (using RFID technologies) and traceability.

The leadership of each organization is convinced that this collaboration will benefit the healthcare community by aligning the standards development and joining forces in promoting global standards in the healthcare community. More details on our collaboration will be forthcoming.

### Newest Benefactor

We are pleased to recognize Progress Software Corporation—DataDirect Technologies Division as our newest



*GS1 President Michel van der Heijden and HL7 CEO Charles Jaffe, MD, PhD, at the signing of the MOU in Orlando, FL.*

HL7 benefactor. Their decision to join HL7 at this highest level of membership shows their commitment to HL7 and is much appreciated. We are proud to report that HL7 now has 35 benefactors, which is an all time high.

### HL7's 21st Annual Plenary and Working Group Meeting

HL7's 21st Annual Plenary and Working Group Meeting convenes September 16-21 in Atlanta, GA. This year's plenary session will take place on Monday, September 17 and is themed "HL7: Transformation in Healthcare." It will feature a keynote presentation given by John Halamka, MD, Chair of the Healthcare Information Technology Standards Panel (HITSP). Leslie Lenert, MD, Director of the National Center for Public Health Informatics at the Centers for Disease Control has also been invited to deliver a keynote address, but at press time his attendance had not yet been confirmed.

Other highlights of this year's plenary program include a presentation given by our CEO, Charles Jaffe, MD, PhD, that will cover HL7-specific transformation. In addition, we have an exciting panel session titled "HL7 as the Catalyst for Transformation of Healthcare IT around the World" that will feature speakers from across the globe.

For more information on the plenary program, please see the detailed schedule on page 6.

### WGM Calendar

I am also pleased to announce that our plans of producing one of our three working group meetings each year outside the USA will continue, including Vancouver, Canada in 2008 and Kyoto, Japan in 2009. The actual schedule of upcoming working group meetings is as follows:

- September 16-21, 2007 – Atlanta, GA
- January 13-18, 2008 – San Antonio, TX
- May 4-9, 2008 – Phoenix, AZ
- September 14-19, 2008 – Vancouver, BC, Canada
- January 11-16, 2009 – Orlando, FL
- May 10-15, 2009 – Kyoto, Japan
- September 20-25, 2009 – Atlanta, GA

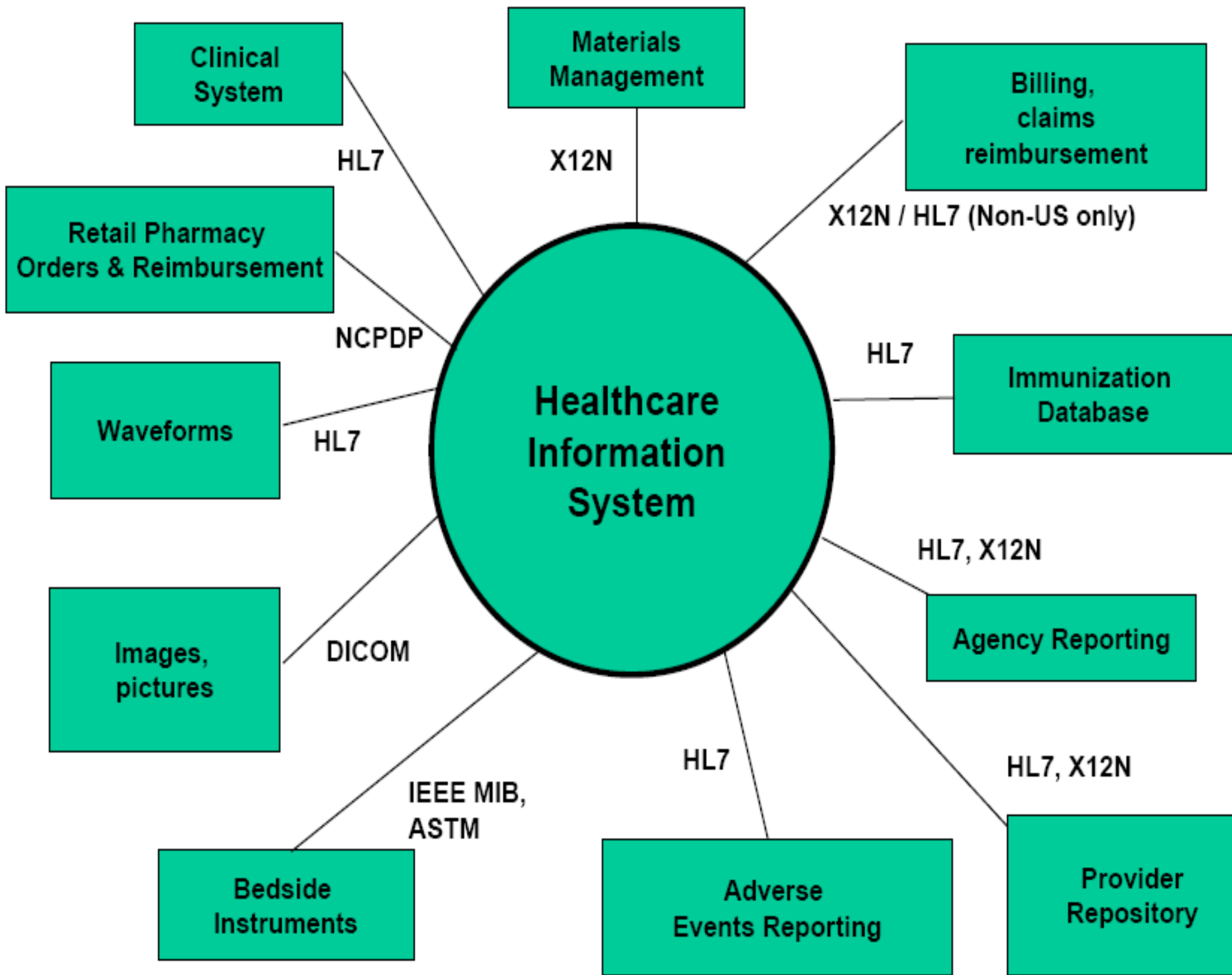


# Agreements/MOUs

- \* Accredited Standards Committee X12 — ASC-X12
- \* American Dental Association — ADA
  - o ADA Joint Project Statement
- \* American Society for Testing Materials — ASTM
- \* CEN/TC 251
- \* Clinical Data Interchange Standards Consortium — CDISC
- \* Digital Imaging and Communication In Medicine — DICOM
- \* eHealth Initiative — eHI
- \* Institute for Electrical and Electronic Engineers — IEEE
- \* Integrating the Healthcare Enterprise — IHE
- \* Medbiquitous
- \* National Council for Prescription Drug Program — NCPDP
- \* OASIS
- \* Object Management Group — OMG
- \* University of Nevada Las Vegas — UNLV
- \* College of American Pathologists - SNOMED International Division — SNOMED

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# Committees & Special Interest Groups

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- **Anatomic Pathology**
- **Anesthesia**
- **Architecture Review Board\*\***
- **Arden Syntax**
- **Attachments**
- **Cardiology**
- **Common Message Element Types\*\*\***
- **CCOW\***
- **Clinical Decision Support\***
- **Clinical Genomics**
- **Clinical Guidelines**
- **Community Based Health Services**
- **Conformance**
- **Infrastructure & Messaging\***
- **Education\*\***
- **Electronic Health Records\***
- **Electronic Services\*\***
- **Emergency Dept.**
- **Financial Management\***
- **Government Projects (US)**
- **Imaging Integration**
- **Implementation\*\***
- **International Affiliates\*\***
- **Java**
- **Laboratory**
- **Health Care Devices**
- **Marketing\*\***
- **Medical Records/ Information Management\***
- **Modeling & Methodology\***
- **Orders & Observations\***
- **Organization Review\*\***
- **Outreach for Clinical Research\***
- **Patient Administration\***
- **Patient Care\***
- **Patient Safety**
- **Pediatric Data Standards**
- **Personnel Management\***
- **Pharmacy**
- **Process Improvement\*\***
- **Public Health & Emergency Response**
- **Publishing\*\***
- **Regulated Clinical Research Information Management (RCRIM)\* (formerly Clinical Trials)**
- **Scheduling & Logistics\***
- **Security\***
- **Service Oriented Arch.**
- **Structured Documents\***
- **Technical Steering Committee\*\***
- **Templates**
- **Tooling\*\***
- **Vocabulary\***
- **XML**

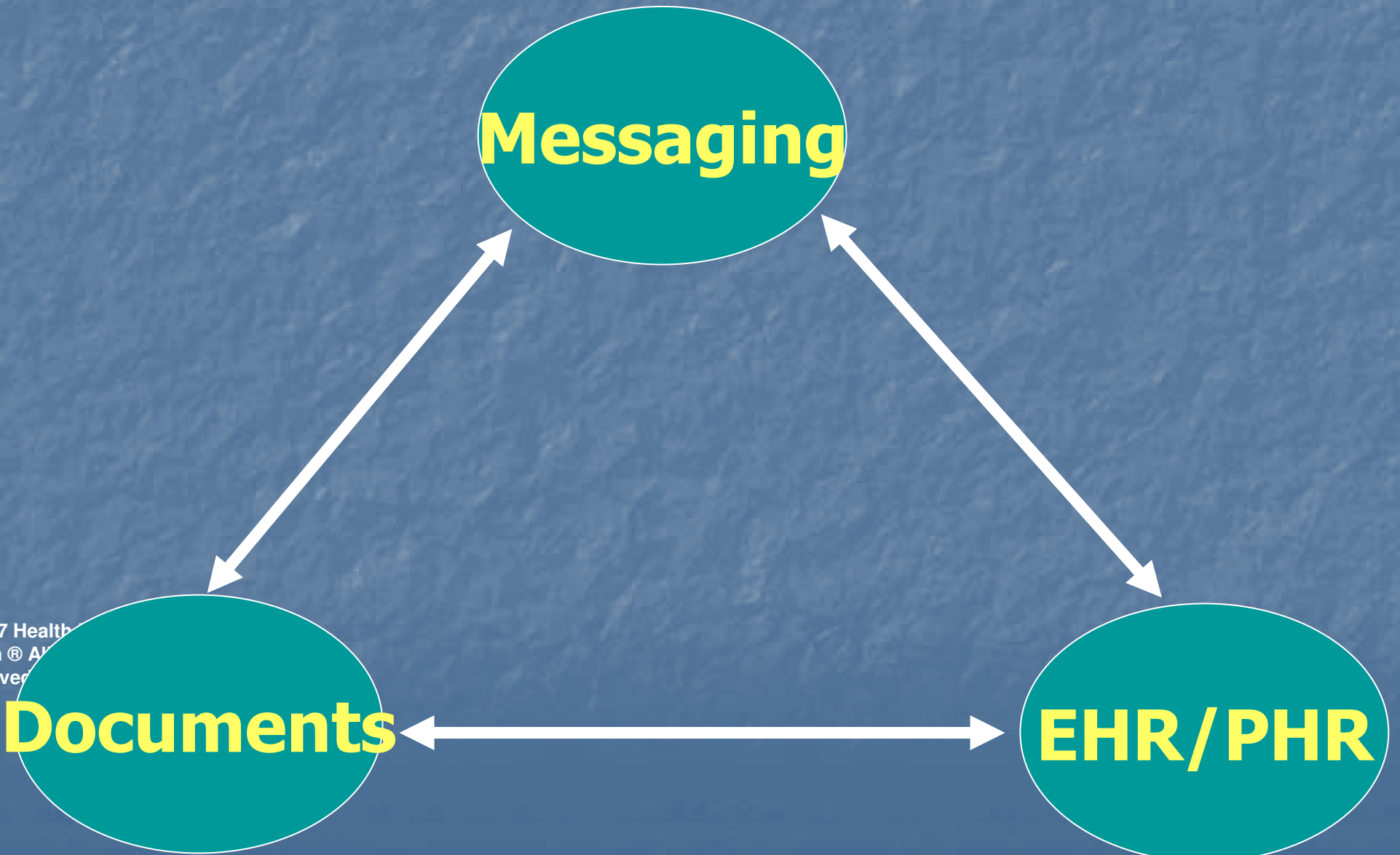
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\* Technical Committees, \*\* Board Committees, \*\*\*Task Force



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# HL7 –messaging - now only one dimension of what HL7 does

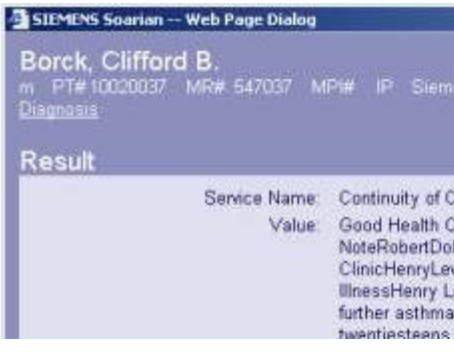
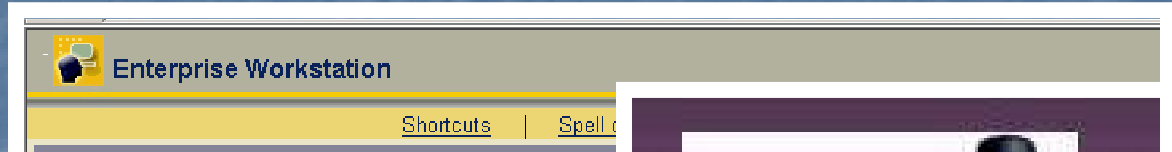




# CDA: A Document Exchange Specification

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- This is a CDA
- and this
- and this
- and this
- and this
- and this





# Body: Human-readable report

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## ■ Any type of clinical document

- H&P
- Consult
- Op note
- Discharge Summary...

## ■ Format: tif, PDF, HTML, XML

- Paragraph
- List
- Table
- Caption
- Link
- Content
- Presentation

Good Health Clinic Consultation Note - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

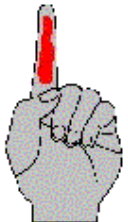
file:///C:/Documents%20and%20Settings/Alschuler Associates, LLC - stan... CDA Sample Documents

### Vital Signs

Date / Time	April 7, 2000 14:30	April 7, 2000 15:30
Height	177 cm (69.7 in)	
Weight	194.0 lbs (88.0 kg)	
BMI	28.1 kg/m <sup>2</sup>	
BSA	2.05 m <sup>2</sup>	
Temperature	36.9 C (98.5 F)	36.9 C (98.5 F)
Pulse	86 / minute	84 / minute
Rhythm	Regular	Regular
Respirations	16 / minute, unlabored	14 / minute
Systolic	132 mmHg	135 mmHg
Diastolic	86 mmHg	88 mmHg
Position / Cuff	Left Arm	Left Arm

### Skin Exam

Erythematous rash, palmar surface, left index finger.



**required**





# CDA Body: Machine Processible

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## ■ Model-based computable semantics:

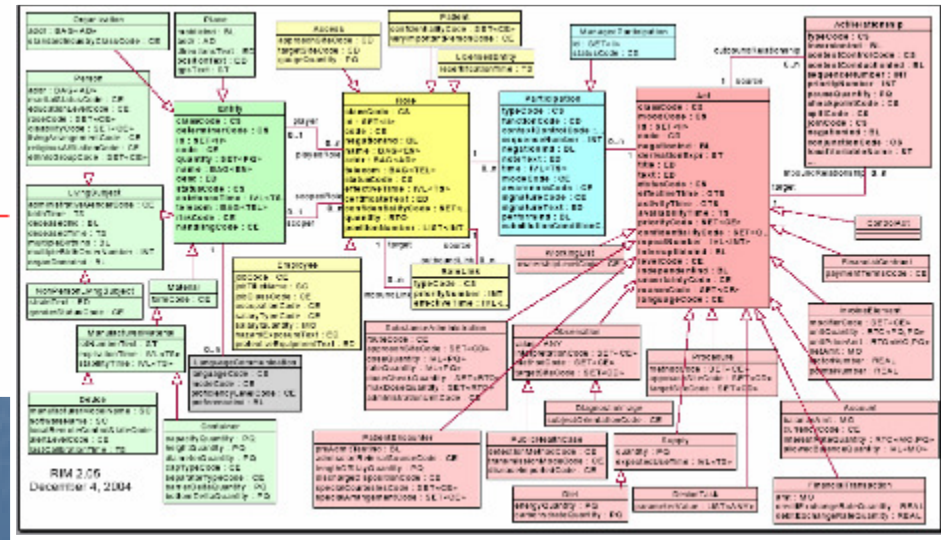
- Observation
- Procedure
- Organizer
- Supply
- Encounter
- Substance Administration
- Observation Medication
- Region Of Interest

```

<title>Past Medical History</title>
- <text>
- <list>
- <item>
  <content ID="a1">Asthma</content>
</item>
+ <item>
+ <item>
</list>
</text>
- <entry>
- <observation classCode="COND" moodCode="EVN">

```

**Optional**





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# PHR – US National initiative

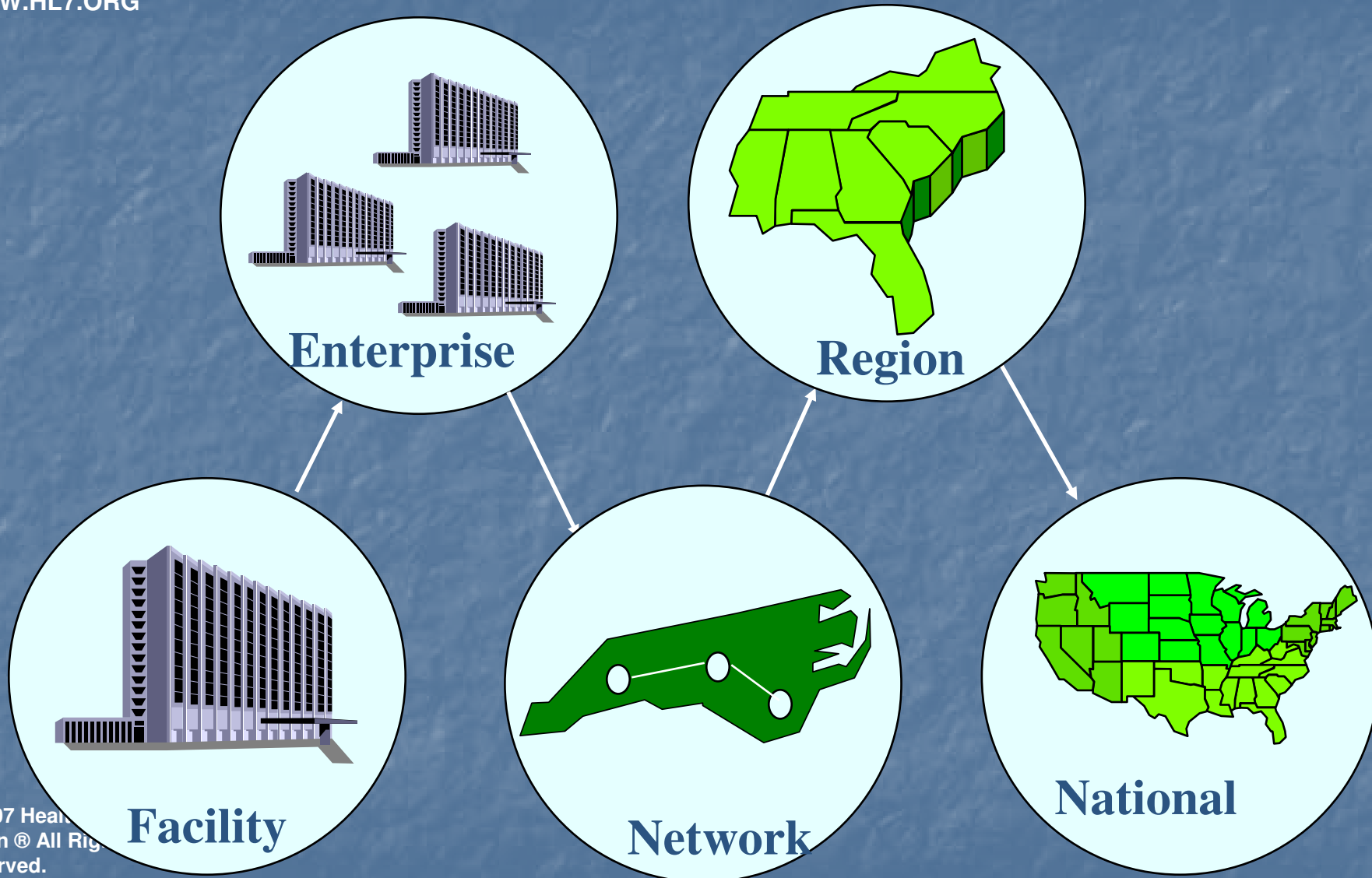
## **EHR-S Profiles and PHR-S Functional Models Move Closer to Becoming Standards**

HL7's Electronic Health Record (EHR) Technical Committee is reviewing hundreds of comments received from the Personal Health Record System (PHR-S) Functional Model public comment period held in September and will complete its work this month. The Committee voted to submit the PHR-S as a November out-of-cycle ballot as a Draft Standard for Trial Use (DSTU), which could potentially become an accredited standard in 2008. The PHR-S Functional Model defines a standardized model of the functions that may be present in PHR Systems. It is intended to serve as a general model that can be customized to the specific PHR models (stand-alone, web-based, provider-based, payer-based, or employer-based models).



# HL7 beyond the hospital interface

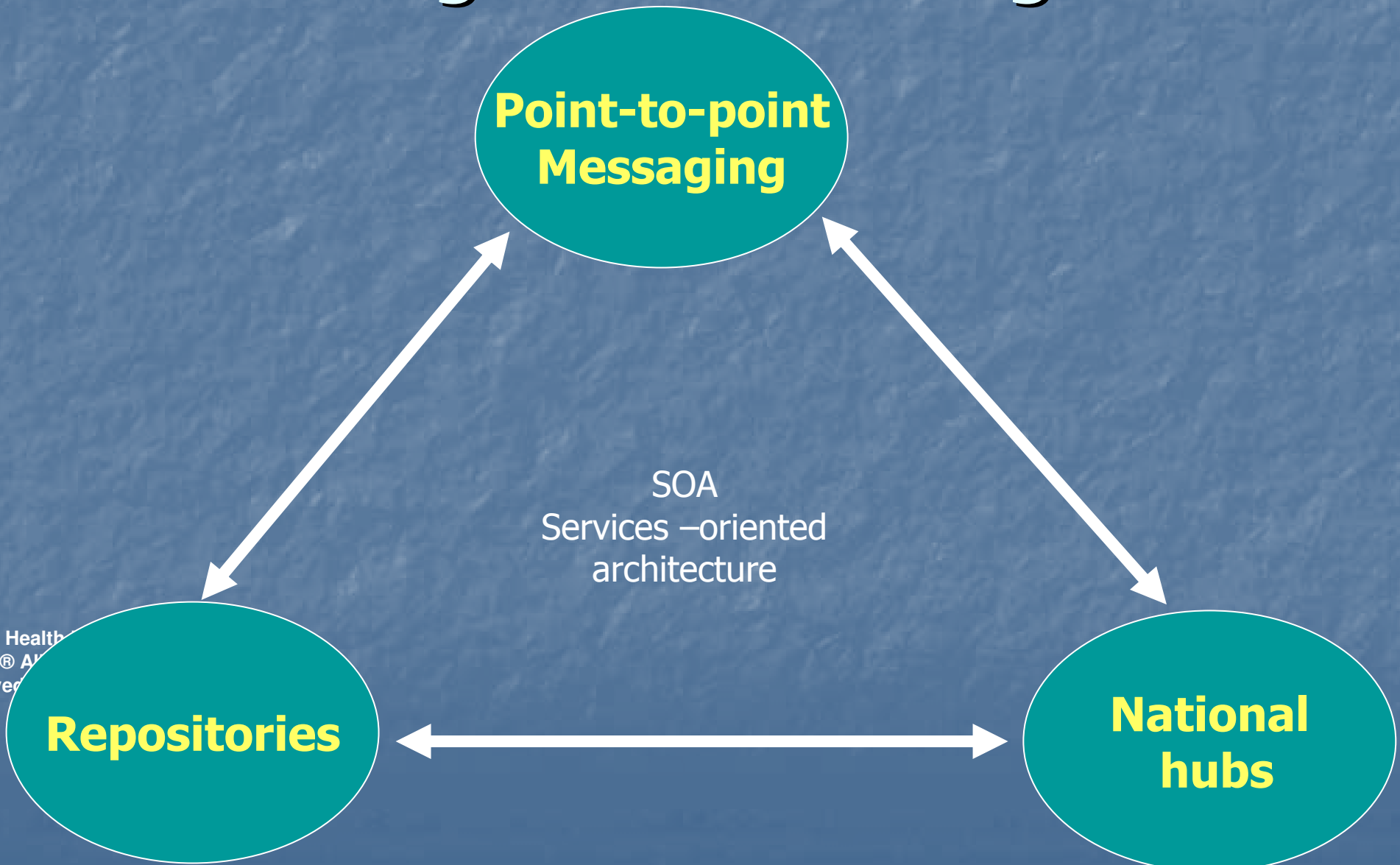
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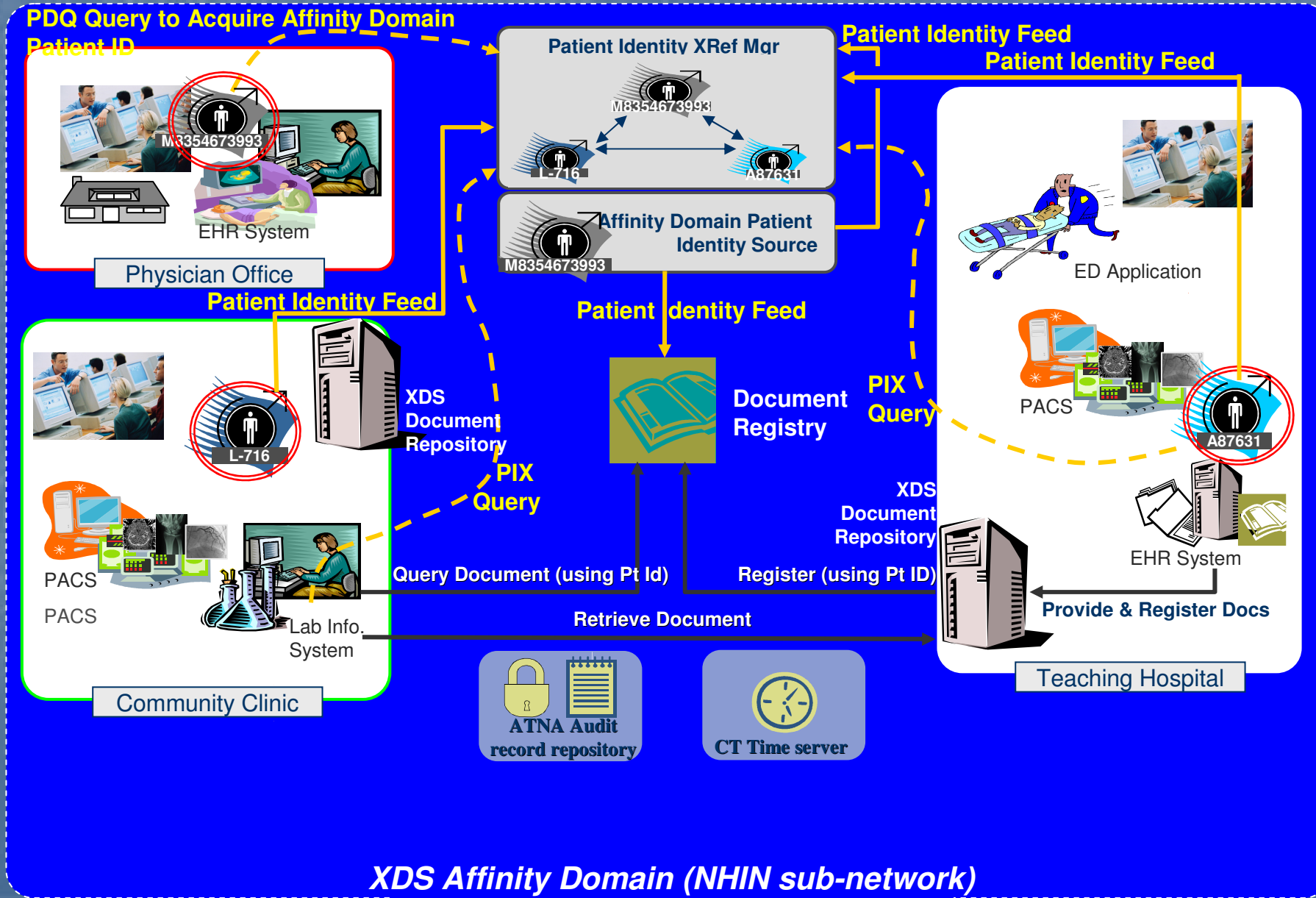
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# HL7 – a rapidly widening integration challenge





# XDS Scenario Showcased at HIMSS 2006





# In a typical NHS week...



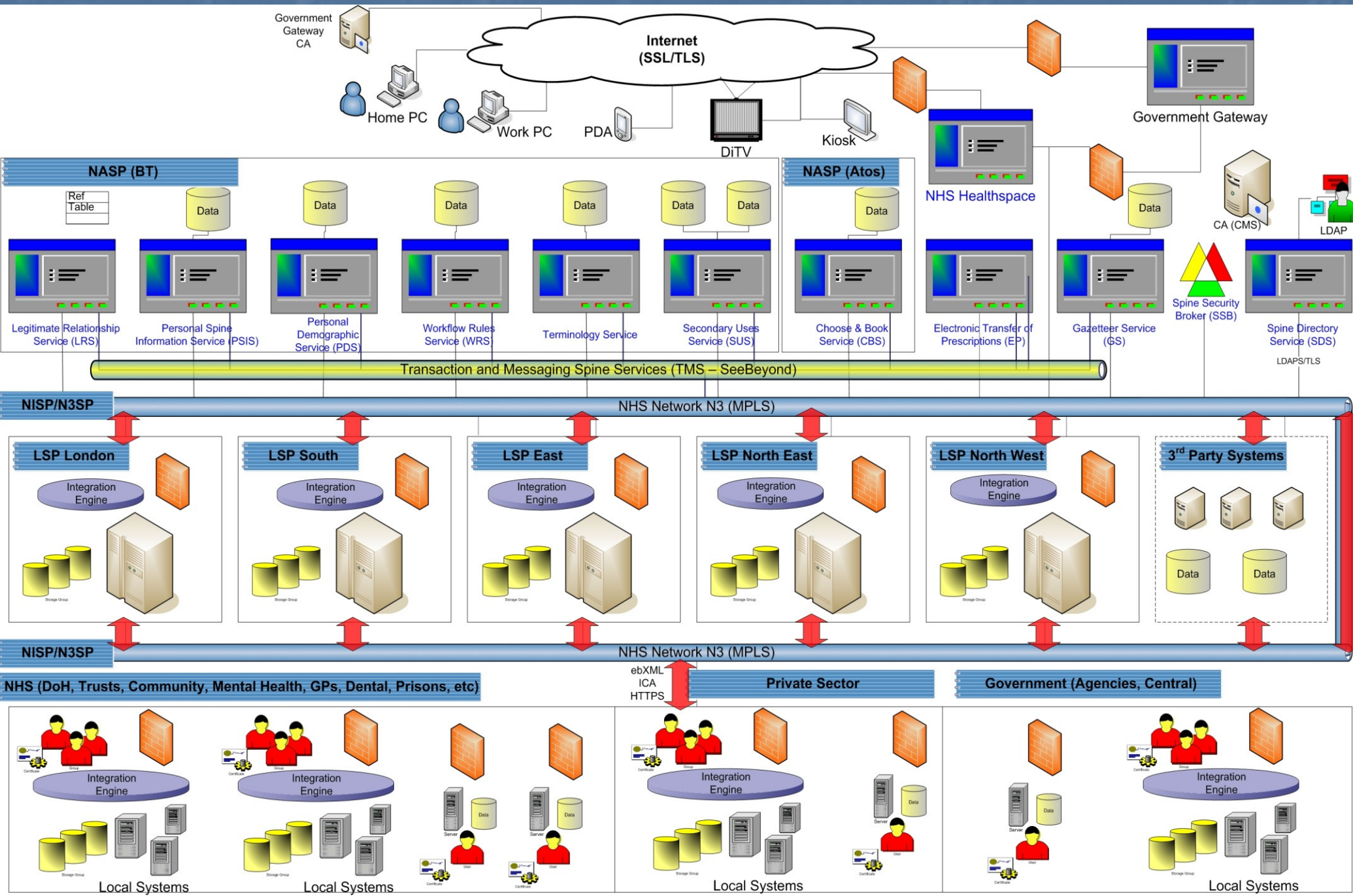
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- 6 million people visit their GP
- Over 800,000 outpatients are treated

In other words, 3 million **critical** transactions each day!

- Pharmacists dispense ~8.5 million items
- NHS surgeons performing ~1,200 hip operations, 3,000 heart operations and 1,050 kidney operations
- Labs and associated services provide millions of tests results

# Architecture Overview







# NHS spine

- Part of 1 billion pound national shared services to support clinical communications
- Only accessed by accredited systems
- Each system has agreed set of HL7 V3 message profiles/versions it is allowed to send and receive



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# NHS spine

- 60 million patient central demographic service built on HL7 V3 Queries
- Central clinical summaries and key in-patient/out-patient events built on HL7 CDA
- National Choose&Book system for hospital in-patient and out-patient booking based on HL7 V3



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# Coding and identification challenges

- Unique NHS Number for each of 60 million patients
- SNOMED as clinical terminology
  - 850,000 terms
  - DM&D – Extensive drugs dictionary
    - 19 attributes for each drug
- Professional staff directory 250,000 moving up to 750,000



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# HL7 - Transition to meet the new challenges!

- Board of Directors met August 2006
  - Developed transition strategy
  - Start to identify transition team(s)
  - Assigned major task areas:
    - Structure/Organization/Governance
    - Product Life Cycle/Project Management
    - Product & Services Strategy
    - Communication/Branding
    - Funding/Revenue Sources
    - Volunteer Resources



# HL7-Re-organise and update!

- ***Optimize the effectiveness of our core resource: the volunteers***

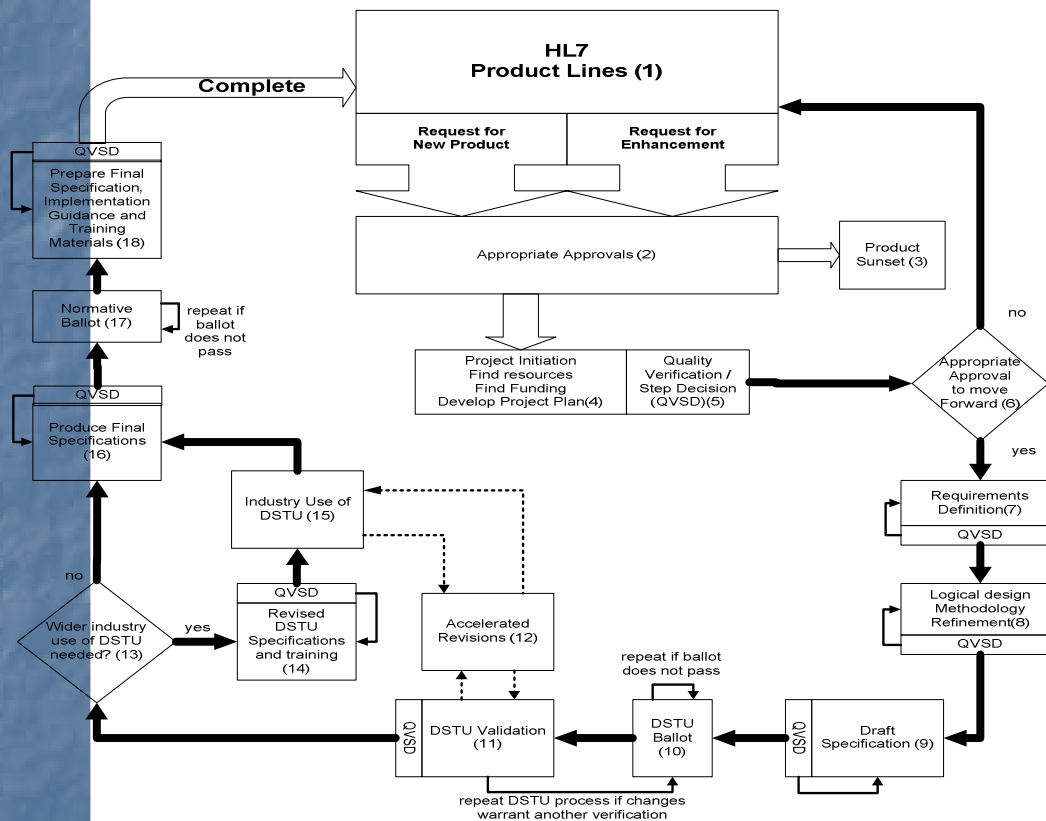
- Maintain culture of volunteerism
- Global participation
- Document institutional process
- Identify new sources of volunteers

- Support: Comprehensive toolkit
- Support: Professional/HQ staff
- Support: e-Working
- Support: Organization/Governance



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# Product-oriented Project Management Approach





# HL7 Appoints Charles Jaffe as CEO

Health Level Seven announced the appointment of Charles Jaffe, MD, PhD, FACMI, as the organization's new CEO during a press briefing at HIMSS on Monday, February 26, 2007.

In his new role, Dr. Jaffe will help to define and develop the evolving organizational structure of HL7 to advance it as the leading healthcare IT standards development organization worldwide. He will drive the vision of global healthcare information interoperability among the more than two dozen countries that support HL7.

"Dr. Jaffe's extensive experience in the healthcare IT industry will help him lead HL7 in the development of critical healthcare IT standards in the U.S. and allow us to work more closely with our numerous affiliates worldwide," said Chuck Meyer, chair, HL7 board of directors. "We look forward to his strategic leadership continuing the momentum that HL7 has achieved in healthcare IT standards development during the past 20 years."

As CEO of HL7, Dr. Jaffe will serve as a global ambassador and foster relationships with key standards stakeholders. He will act as HL7 industry spokesperson within the U.S. and the international community.

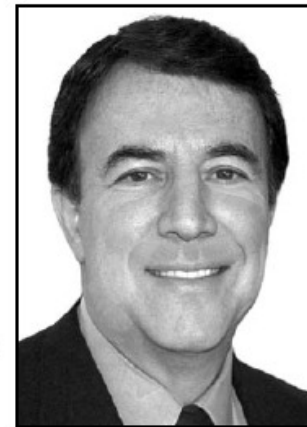
"I look forward to leading HL7 through the implementation of its new strategic plan and building on the critical achievements that HL7 has accomplished in its first 20 years," said Dr. Jaffe. "There are enormous opportunities to partner with other standards development organizations, to support the global healthcare community and to forge new relationships with government agencies, industry leaders, healthcare providers and global advocates."

Dr. Jaffe has been an active HL7 member for the past 14 years and has served in various leadership roles and on a diverse range of technical and operational committees.

Intel Corporation, where Dr. Jaffe has served as Senior Global Strategist for the Digital Health Group, will continue to support him as the full-

time CEO of HL7. Although Intel will pay his salary as in-kind funding, Dr. Jaffe will focus 100 percent of his work efforts and commitment to HL7, advancing it as the leading healthcare IT standards development organization worldwide.

"HL7 has a lot of momentum and a big agenda," said Colin Evans, director of Health Policy and Standards, Intel's Digital Health Group. "We are pleased to be able to contribute to the advancement of healthcare technology standards by supporting Dr. Jaffe in taking on this critical role."



*Charles Jaffe, MD, PhD*

Dr. Jaffe completed his medical training at Johns Hopkins and Duke Universities, and was a post-doctoral fellow at the National Institutes of Health and at Georgetown University. Dr. Jaffe has held various academic appointments, most recently in the Department of Engineering at Penn State University.

Prior to his position with Intel, he was the vice president of Life Sciences at SAIC, and the director of Medical Informatics at AstraZeneca Pharmaceuticals. Formerly, he was president of InforMed, a consultancy for research informatics. Over the course of his career, Dr. Jaffe has been the principal investigator for numerous clinical trials, and has served in various leadership roles in the American Medical Informatics Association (AMIA) and Clinical Data Interchange Standards Consortium (CDISC).

He has served as the chair of a national institutional review board, has been the contributing editor for several journals and has published on a range of subjects, including clinical management, informatics deployment and healthcare policy.

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# Both CEO and CTO now in place

## **Health Level Seven Appoints John Quinn as CTO**

*Healthcare IT Consultant with 30 years experience in vendor, provider and consulting sector to streamline healthcare IT standards development*

**Atlanta, GA, U.S.A. – September 18, 2007** – Health Level Seven (HL7), a preeminent healthcare IT standards development organization with broad international representation, today announced the appointment of John Quinn as Chief Technology Officer (CTO). Accenture and HL7 have reached an agreement in principle and Quinn, who is CTO of Accenture's US Provider Practice, will immediately assume the responsibilities of CTO of HL7. A final agreement with Accenture will be signed within the next few weeks.





# Establish Harmonization Processes

## Clarify Governance

### Provide Project Support

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Modeling & Methodology

Services Oriented Architecture

RIM

Java

## Foundation & Technologies

Arden Syntax

Infrastructure & Messaging

Conformance

XML

Tools

Vocabulary

CCOW

Security

Electronic Services

Templates

Structured Documents

Orders and Observations

Publishing

TermInfo

Personnel Management

## Structure & Semantic Design

Attachments

Scheduling & Logistics

Patient Administration

Implementation

Clinical Decision Support

Financial Management

RCRIM

Clinical Genomics

Image Integration

Early Adopters

Healthcare Devices

Lab Community Based Health

Patient Care

Pharmacy

Clinical Guidelines

EHR

Patient Safety

Pediatrics Data Standards

Cardiology

## Domain Experts

Anesthesiology

Government Projects

Public Health/Emergency Response

Anatomic Pathology

Emergency Care



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# Contact

- Web sites

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- [www.hl7.org.uk](http://www.hl7.org.uk)

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[Andrew.hinchley@cerner.com](mailto:Andrew.hinchley@cerner.com)