
# Interoperability 101

The Importance of Interoperability to Ambulatory Medical Practices

transforming healthcare through IT™



# What is Interoperability?

## High-level Definition:

Systems that allow providers to share data among different practitioners, insurers, billing/scheduling systems and health information exchanges (HIEs)



# Why is Interoperability Important?

- **Quality**
  - Improves the quality of patient care by providing access to complete, accurate, timely information in one location
- **Efficiency**
  - Saves time previously used to look for information, i.e. lab results, in a sea of paper or repeat tests that have already been performed in another care setting
- **Safety**
  - Makes life-saving information available 24-hours-a-day for clinical decision support



# How Does Interoperability Apply to Healthcare?

## Specifics:

Six interoperability "dimensions"[1] comprise a detailed definition for healthcare…

[1]HIMSS Integration and Interoperability Steering Committee. *Interoperability Definition and Background*. Tech. Healthcare Information and Management Systems Society, 2005. Print.

HIMSS
transforming healthcare through IT™

# Dimension #1:
# Uniform Movement of Healthcare Data

1) **Uniform movement of healthcare data** from one system to another, such that the clinical or operational purpose and meaning of the data is preserved and unaltered.

***Healthcare Example:***

*When a lab result is transmitted from one system to another, the meaning of the lab result is preserved (e.g., WBC), the units of measure are preserved and the exact actual measurement is preserved.*[1]

# Dimension #2: Uniform Presentation of Data

2) **Uniform presentation of data**, enabling disparate stakeholders to use different underlying systems to have consistent presentation of data when doing so is clinically or operationally important.

***Healthcare Example:***

*The visual cue(s) used to indicate abnormal test results would be the same across all systems, making it easy for a caregiver to notice such results independent of the specific system that being used.*[1]

# Dimension #3: Uniform User Controls

3) **Uniform user controls**, to the extent that a stakeholder is accessing a variety of underlying systems, and the contextual information and navigational controls are presented consistently and provide for consistent actions in all relevant systems.

***Healthcare Example:***

*The control(s) that enable a user to log off of an application would look and behave the same across all applications, enabling caregivers to easily sign off when they are finished. In so doing, patient privacy is respected by properly closing patient records that are no longer being viewed.*[1]



# Dimension #4: Uniform Safeguarding Data Security and Integrity

4) **Uniform safeguarding data security and integrity** as data moves from system to system such that only authorized people and programs may view, manipulate, create or alter the data.

***Healthcare Example:***

*When a medication order is transmitted from one system to another, only people who are authorized to prescribe, dispense or administer medications may view the order. Further, even if a message containing an order were maliciously intercepted and its content altered before retransmission, it would be possible for the receiving system to detect this transgression.*[1]

HIMSS
transforming healthcare through IT™

# Dimension #5: Uniform Protection of Patient Confidentiality

5) **Uniform protection of patient confidentiality,** even as stakeholders in different organizations access data that has been exchanged across systems, particularly in order to prevent unauthorized access to sensitive information by people who should not – or do not – need to know.

***Healthcare Example:***

*A patient's assertion that his or her employer not be allowed to have access to their medical history is respected even as all or part of their history is transmitted from one organization to another.*[1]

# Dimension #6: Uniform Assurance of a Common Degree of System Service Quality

6) **Uniform assurance of a common degree of system service quality** (e.g., reliability, performance, dependability), so that stakeholders who rely on a set of interoperable systems can count on the availability and responsiveness of the overall system as they perform their jobs.

***Healthcare Example:***

*When a patient presents in an emergency room, his or her electronic medical record is quickly and completely available – even though the constituent parts of the record are sourced by multiple underlying systems.*[1]

# Common Healthcare Standards

- **HL7:** A standard for exchanging information between medical applications. This standard defines a format for the transmission of health-related information.
- **X12:** A group that defines EDI[2] standards for many American industries, including healthcare insurance. Most of the electronic transaction standards mandated or proposed under HIPAA[3] are X12 standards.

[2] EDI = Electronic Data Interchange

[3] http://www.hhs.gov/ocr/hipaa/

HIMSS
transforming healthcare through IT™

# Common Healthcare Standards

- **Clinical Document Architecture (CDA):** Standards that apply to clinical documents.

- **Continuity of Care Record (CCR):** A core data set of the most relevant administrative, demographic and clinical information about a patient's healthcare, covering one or more healthcare encounters. It provides a means for one healthcare practitioner, system or setting to aggregate all of the pertinent data about a patient and forward it to another practitioner, system or setting to support the continuity of care.

HIMSS
transforming healthcare through IT™

# Common Systems That Need to Be Interoperable

**Practice Management**

**Electronic Health Record**

**E-Prescribing**

**Labs**

**Radiology**

# What is the Role of Interoperability Within HITECH?

- Interoperability is a key factor in the success of HITECH[4] as eligible professionals and hospitals implement EHR[5] technology to qualify for the EHR Incentive Program
- Health information exchange is a component of the Meaningful Use criteria[6] and is possible only when systems are interoperable, allowing data to be exchanged seamlessly

[4] http://www.hhs.gov/ocr/privacy/hipaa/administrative/enforcementrule/hitechenforcementifr.html

[5] EHR = Electronic Health Record

[6] http://www.cms.gov/EHRIncentivePrograms/30_Meaningful_Use.asp

HIMSS
transforming healthcare through IT™

# Moving Forward, What Role Will Interoperability Play in the Ambulatory Setting?

*Interoperability will:*

- Assist in reducing redundant **data entry**
- Improve **care coordination** between providers and care settings
- Provide visibility into the **"whole" patient** by sharing basic medical information across a patient's care providers
- Allow **medical device data** to be captured in the EHR without human intervention in the era of eHealth
- Enable researchers to use data that originates in the ambulatory setting to investigate **new methods of care delivery** and personalized medicine



# What Do I Need To Do Now?

- It is important to be informed about interoperability when selecting your EHR products
  - Work with organizations that you frequently exchange information with today to ensure that your respective systems can exchange information seamlessly
  - Work with your vendor to make certain that all six dimensions of interoperability are considered during EHR implementation

HIMSS
transforming healthcare through IT™

# What Questions Do I Need to be Asking Vendors About Interoperability?

- **Is your product an open or a closed proprietary system?**
  *Preferred Answer: Open System*
- **Can your product easily be connected to third-party devices and applications, labs and pharmacies across the country?**
  *Acceptable Answer: Yes*
- **Are your Application Programming Interfaces (APIs) readily available to third-party vendors?** *Acceptable Answer: Yes*
- **Here is a list of applications that other providers in my health community use. Can you ensure that I can seamlessly connect to these applications and exchange data with them?**
  *Acceptable Answer: Yes*
- **Are remote vendor technical support services available 24x7x365, with onsite support guaranteed within acceptable time frames?**
- *Acceptable Answer: Yes*

HIMSS
transforming healthcare through IT™

# Why Do I Need to Care About Interoperability?

*To avoid investing in costly, closed proprietary systems that do not allow you to exchange health information with fellow practitioners, insurers, billing/scheduling systems, health information exchanges and other healthcare stakeholders*

HIMSS
transforming healthcare through IT™

## Acknowledgements:

MaryAnne Sterling, CEA
*Executive in Residence*
*HIMSS Foundation, Institute for e-Health Policy*
*msterling@e-healthpolicy.org*