Section B

HIT Standards: Definitions and Categories
Standards

- **Standard** is a definition or format that has been approved by a recognized standard development organization or is accepted as a de facto standard by the industry.

- **De facto standards** have become standard simply because a large number of companies have agreed to use them.
  - They have not been formally approved as standards, but they are standards nonetheless.

- Within application domain, e.g., health care, standards exist for:
  - **Data**: data vocabularies, terminologies, formats
  - **Information and information exchanges**: data collection and management procedures, messages and communications protocols
  - **Knowledge**: work processes, decision support
In information technology, standards exist for:

- IT infrastructure: security, access control, identifiers
- Programming languages
- Operating systems
- Electrical interfaces, etc.
Within application domain, e.g., health care, standards exist for:

- **Data**: data vocabularies, terminologies, formats
- **Information and information exchanges**: data collection and management procedures, messages and communications protocols
- **Knowledge**: work processes, decision support

From an end user’s standpoint, standards are extremely important because they allow to share information within a particular field of knowledge (application domain).

Without standards, end users cannot communicate with each other or share data.
### HIT Standards Categories

1. **Data standards (vocabularies and terminologies)**
   - E.g., reference information models (RIMS)

2. **Information content standards**
   - E.g., reference information models (RIMS)

3. **Information exchange standards**
   - E.g., messaging standards, structured documents standards

4. **Identifiers standards**
   - E.g., national provider identifier (NPI)

5. **Privacy and security standards**

6. **Functional standards and business process**
   - Standards, e.g. processes/ workflow and dataflow; and guidelines, protocols

7. **Other**
   - E.g., IT standards

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Note: this classification of health IT standards types has been developed by the Health Information Technology Standards Panel (HITSP, [www.hitsp.org](http://www.hitsp.org)) in 2006.
National Biosurveillance Use Case

- Charge: “Transmit essential data from electronically enabled healthcare to authorized public health agencies in real-time”
Biosurveillance Use Case

Event Detection

Ambulatory Care

9 – Order test

Laboratory

4 – Data mining of EMR notes

4 - Report/retrieve of symptoms, diagnosis & medication prescription data from EHRS

7 – Notify on increased number of cases & recommend to order specific tests

11 – Report test result electronically & by phone

Local Public Health Surveillance System

Response Team

Pharmacy

State Public Health Surveillance System

DHHS

Neighboring Jurisdictions

Hospital

13 – Report on the positive case electronically & by phone

Media
Biosurveillance Use Case

1. Data standards—28
2. Information content standards—17
3. Information exchange standards—46
4. Identifiers standards—11
5. Privacy and security standards—5
6. Functional standards—0
7. Other—0

Total = 107 standards

Note: this classification of health IT standards types has been developed by the Health Information Technology Standards Panel (HITSP, www.hitsp.org) in 2006.
From a developer's standpoint, *standards* are extremely important in the computer industry because they allow the combination of products from different manufacturers to create a customized system.

Without standards, only hardware and software from the same company could be used together.

- In addition, standard user interfaces can make it much easier to learn how to use new applications.
Standards World

Source: Harold Lehmann, Johns Hopkins University
Standards Are Technical Documents

- White papers
- Technical frameworks
- Interoperability specifications
- Requirements specifications
- Implementation guides
- Integration profiles
- Content profiles
- Certification criteria