

INTRODUCTION TO HL7 and the V2 Standard



HL7 - HEALTH LEVEL 7

- Messaging standards that promote INTEROPERABILITY
- Most widely used standards for health information exchange
- The seventh layer in the ISO OSI, the APPLICATION LAYER: where users and applications produce the data to be exchanged



INTEROPERABILITY

The ability of multiple systems or components to EXCHANGE AND INTERPRET INFORMATION

SYNTACTIC INTEROPERABILITY



Information is organized into A SPECIFIC FORMAT

Example

Excel Spreadsheet +
Data organized in columns +
Specific column order

SEMANTIC INTEROPERABILITY



Ensures different systems INTERPRET DATA THE SAME

Example

Column: Gender
Values: F= female, M = male

HL7 MESSAGING

HL7 V2

Most common standard for healthcare

- "Pipe and caret" Structure
- Regularly updated
- Applications include:
 - Immunization Registries
 - Lab order and results

```
PID|||||EVERYWOMAN^EVE^E^^^L|....
```

HL7 V3

Not as widely adopted in healthcare

- Flexible
- Human readable formats
 - Clinical Document Architecture (CDA)
 - XML-based document-centric

```
<name use="L">  
  <given>Eve</given>  
  <given>E</given>  
  <family>Everywoman</family>  
</name>
```

HL7 FHIR

Fast Healthcare Interoperability Resources

- Ease of implementation
- Discrete blocks of data
 - organized into "resources"
- Exchanges info via REST APIs

```
<name>  
  <use value="official"/>  
  <family value="Everywoman"/>  
  <given value="Eve"/>  
  <given value="E"/>  
</name>
```