



Using Rhapsody

2007 APHL Annual Meeting

Dari Shirazi

University of Iowa Hygienic Laboratory



Why we got involved

- Data exchange with hospitals, public health departments
 - Issues with Local code, LOINC, SNOMED (vocabulary)
 - Different HL7 structures (grammar)
- Using PHINMS for message delivery
- Learn a lot & contribute



Why use an Interface Engine

- Historical data exchange
 - Various formats: Comma delimited, Excel, MS Access, XML
 - Delivery options: Floppy, FTP, Web
- Complexity of HL7
 - Different versions: 2.2, 2.3, 2.4, 2.5, 3.0...
 - We can use it for order, result, payment...
 - Validation

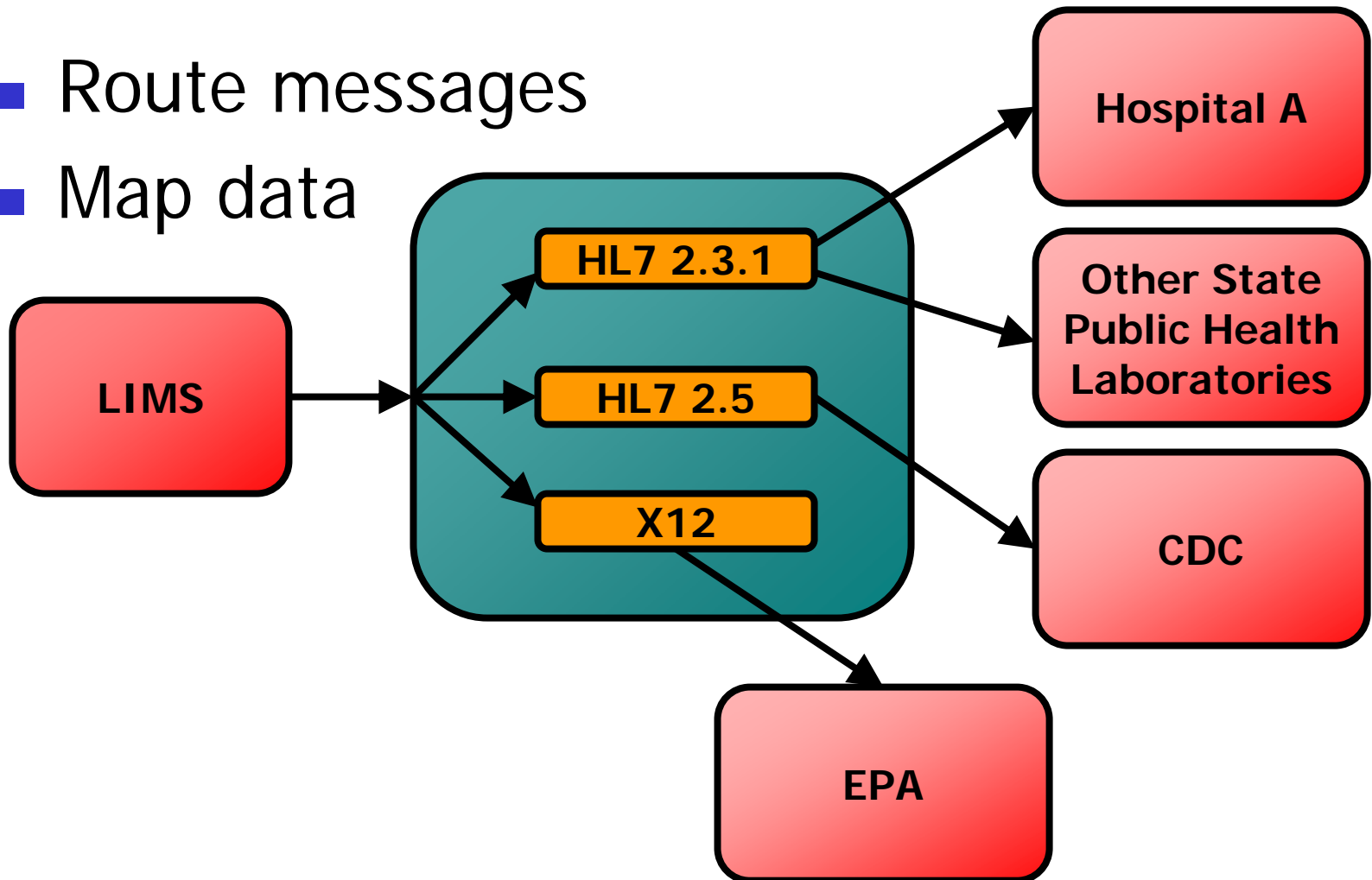


HL7 Example

```
MSH|^~\&|PHIMS|University of Iowa Hygienic Laboratory\S\102 Oakdale Campus
H101\S\Iowa City\S\IA\S\52242-5002\S\800/421-4692^16D0648109^CLIA||MOON
HOSPITAL^999^L|200705012358||ORU^R01|P123456T1234567890|T|2.4
PID|1||a12345/123123^^^PI||DOE^JOHN||19230601|M||2106-3^WHITE^HL70005|10
STREET WAY^^BIGTOWN^IA^99999-||319/123-4567||||||U^UNKNOWN^HL70189
ORC|RE|a12345/123123|2006987654|||||^DOOLITTLE||||||MOON HOSPITAL - MOON
HOSPITAL|123 ASH ST^^IOWA CITY^IA^52240-
OBR|1||2006987654|20729-0^B abortus Ab Titr Ser
Plate^LN|||20061001|||||200610030755|&Acute Serum&L|||||200705011107|||F
OBX|1|TX|SERO-RSLT1^Result 1^L||<1:20||N||F|||200705011107
NTE|1|GR|Patient's birth date omitted on the test request form which may result in delayed
results or specimen rejection. A phone call was made to obtain this information.
NTE|2|GI||<1:20 = Negative. 1:20-1:80 = Antibody detected, indicates prior exposure to
Brucella. A single sample titer of =>1:160 is diagnostic. Suggest repeat testing in 14-21
days. A fourfold rise/change in titer in paired sera is diagnostic. For research use only,
not approved by FDA for in-vitro diagnostic testing.
OBR|2||2006987654|33684-2^F tular Ab Titr Ser
Tube^LN|||20061001|||||200610030755|&Acute Serum&L|||||200705011107|||F
OBX|1|TX|SERO-RSLT1^Result 1^L||<1:20||N||F|||200705011107
NTE|1|GI||<1:20 = Negative. 1:20-1:40 = Indicates prior exposure to tularemia. Suggest
repeat testing in 14-21 days.
```

What can Rhapsody do

- Route messages
- Map data



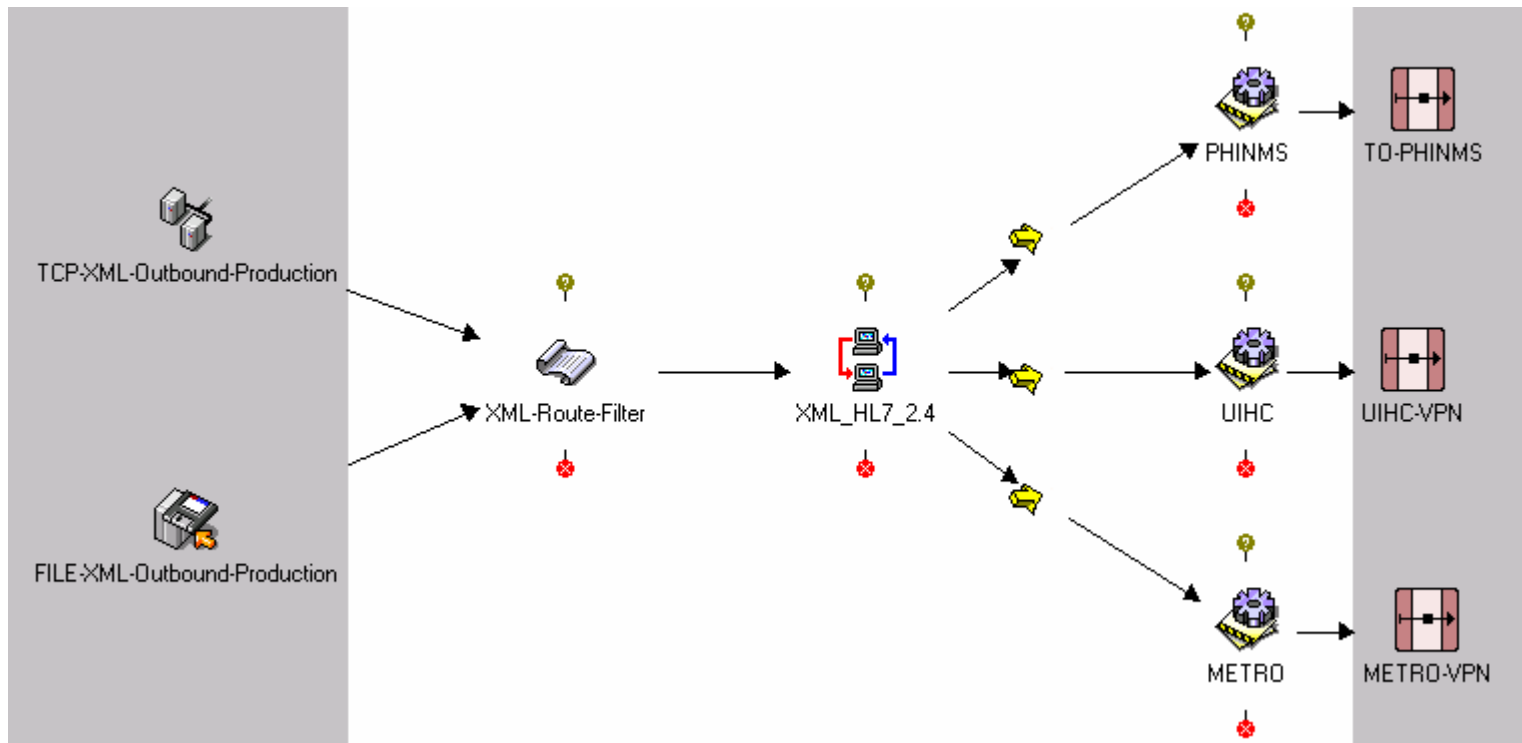


Routing

- Look at the message
- Use database or built-in rules
- Use different communication point such as HTTP, FTP, IE to IE (VPN), PHINMS
- Filter messages based on partner's need such as encryption
- Validate delivery or receipt of messages

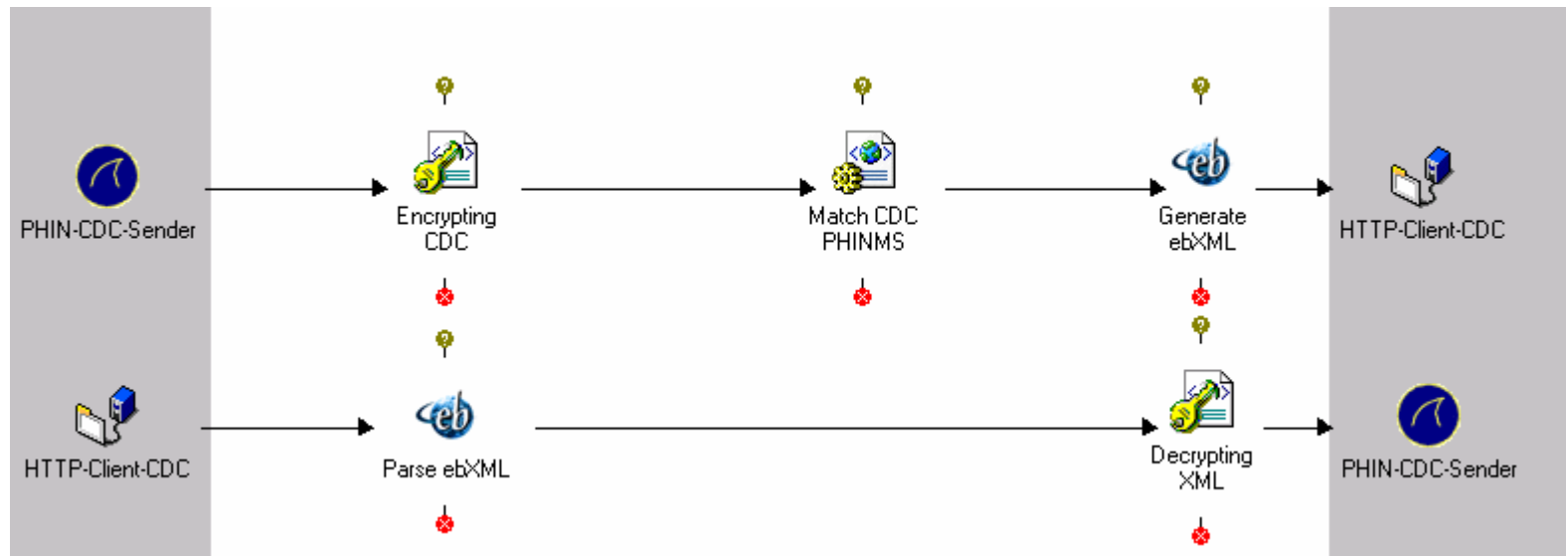
Routing

- One of our message based routes



Routing

■ CDC PHINMS route



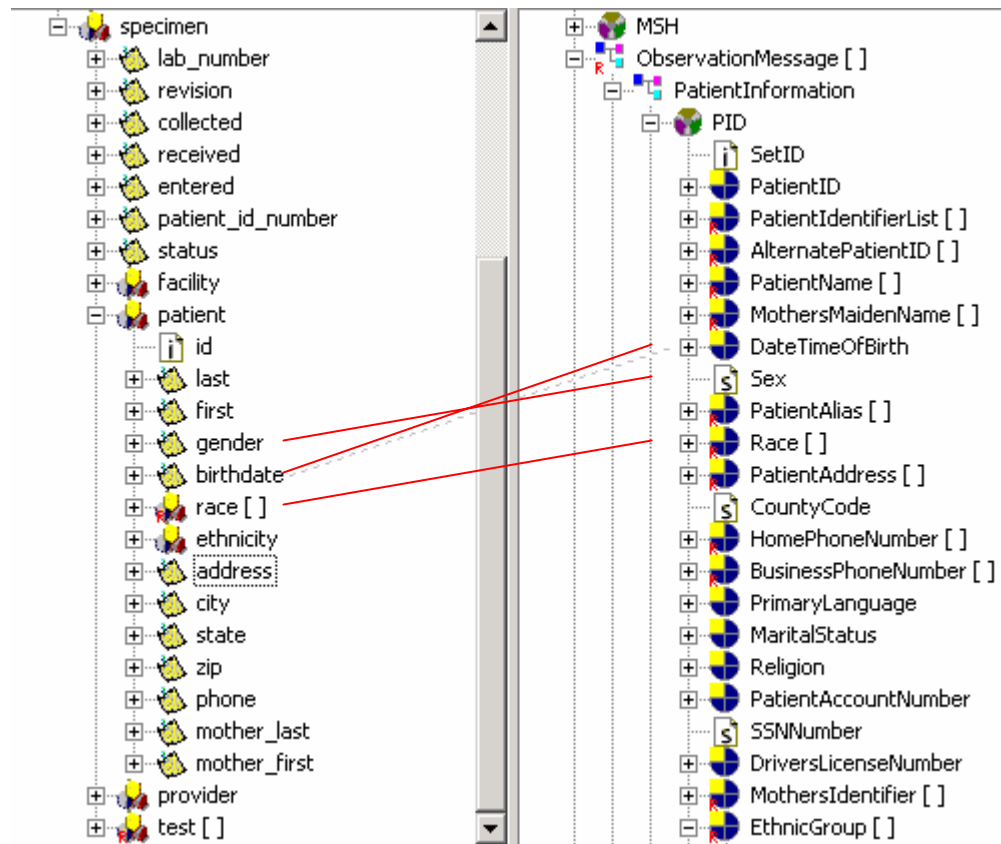


Mapping

- Map from one format to another
 - Map from XML to HL7
 - Map from HL7 2.3.1 to HL7 2.5
- Map directly from database
 - To HL7
 - Some people use it to write reports in PDF
- Validate mapped data

Mapping

- Example of XML to HL7





Cost/Resources used by Iowa

- 1 FTE working on HL7
- 1/3 Analyst working on LOINC, SNOMED, local codes, and working with SMEs
- Programmer working on our LIMS to accommodate Orders/Results
- I spend (a lot of) time on design and implementation
- SMEs for the PHLIP meetings, design, and vocabulary



Cost/Resources used (cont)

- 110K for Rhapsody for 50 communication points
- 15K yearly maintenance
- 15-25K for each partner to implement your interface
- 1-2 year startup time



Additional info

- Open Healthcare Framework
<http://wiki.eclipse.org/index.php/OHF>
- Mirth project
<http://www.mirthproject.org/>
- Orion Health
<http://www.orionhealth.com/rhapsody>



Contact information

Dari Shirazi

University of Iowa Hygienic Laboratory

102 Oakdale Campus, H101 OH

Iowa City, Iowa 52242-5002

319-335-4500

dshirazi@uhl.uiowa.edu