

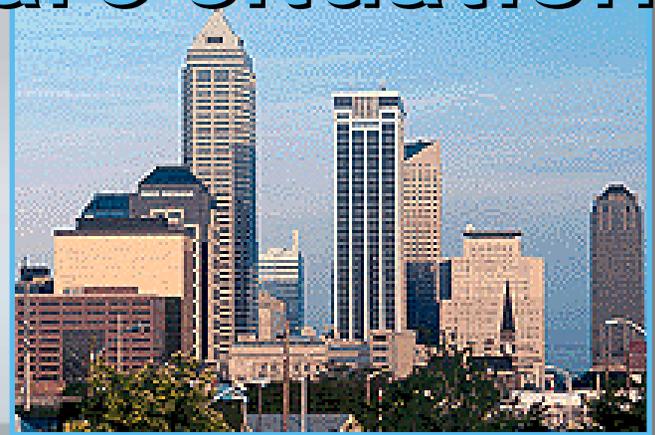
PHIN 2004: Session 7.D  
Creation of Standards Based  
Messages from Clinical Sources

# Indiana Network for Patient Care

J. Marc Overhage, MD, PhD  
Regenstrief Institute  
Indiana University School of Medicine

# INPC Project Goal

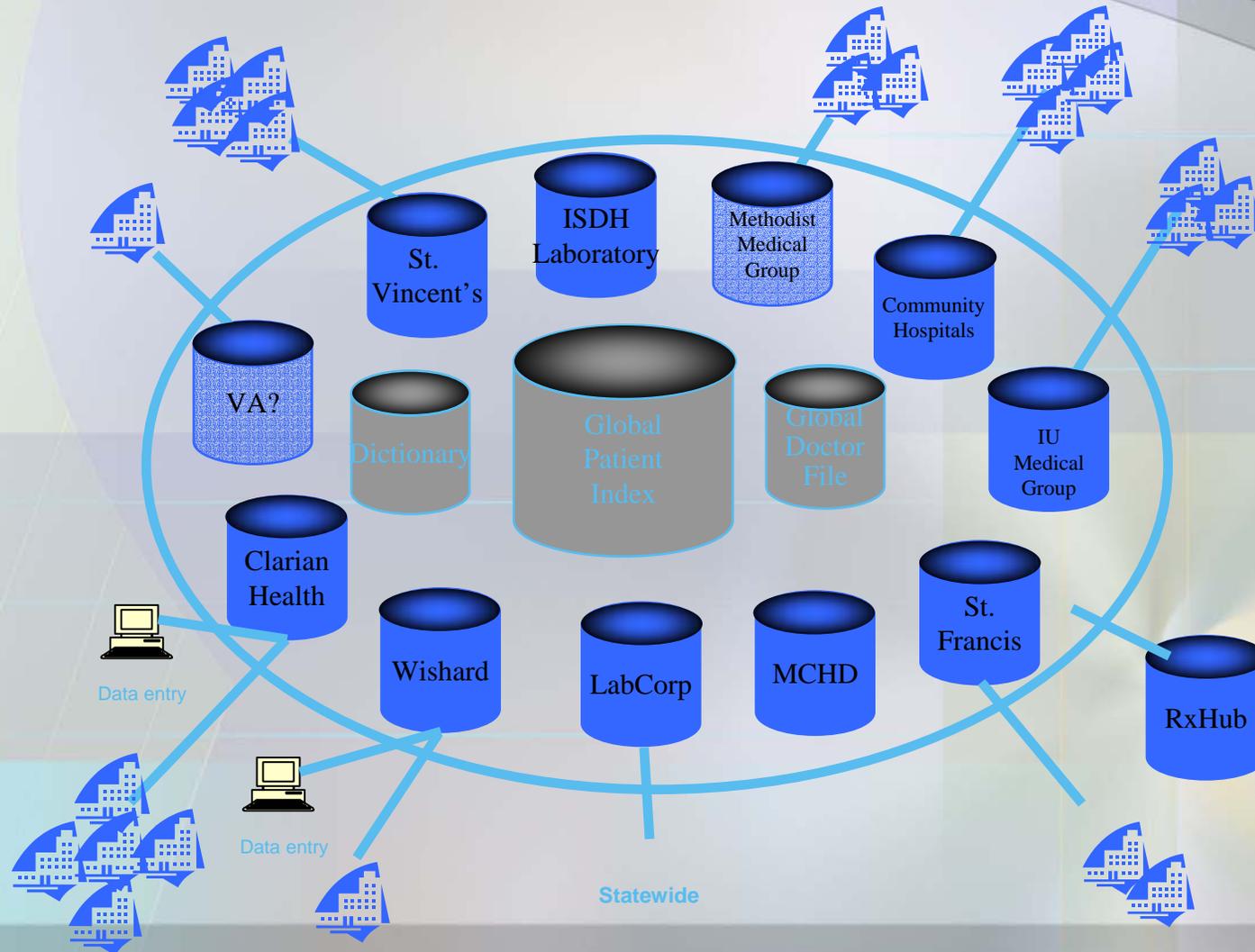
**Demonstrate the feasibility and benefit of a community wide electronic medical record system in acute care situations.**



# Data Exchanged

- Encounter locations, dates, providers, diagnoses, procedures (including ED)
- Laboratory results
- Radiology reports and images
- Pathology reports
- Transcribed reports
- EKG reports and tracings
- Tumor registry
- Outpatient prescriptions
- Vital signs
- Nursing observations
- Vascular studies
- Electromyograms
- Electroencephalograms
- Endoscopy reports
- Cardiac catheterizations
- Echocardiograms
- Electrogastrograms
- Pulmonary function tests
- Home oxygen evaluations
- Orders from ED, inpatient, outpatient, extended care facility

# INPC database organization



# Where in the flow to standardize?



# Mapping strategy

- **Collect data stream (6 months)**
- **Develop preprocessing strategy**
- **Sort by OBX (test) name with mapped codes**
- **Sort by OBR (battery) name with mapped codes**
- **Use RELMA to map remaining pairs**
- **Keep original codes with result**

- **“NLP”**

- **Pathologic diagnoses**
- **Symptoms**

# Patient matching

- **Create global registry**
  - One record per assigned patient number per institution
- **Create logical links between each of these records**
  - Probabilistic match based on demographics
- **Match on social security number, patient name, birth date and gender**
- **Use Sidelis/Friedman algorithm<sup>1</sup> for near name matches**

# Global Patient Registry

Assigning  
Authority

Global #

Local Pat #

Patient Name

Birthdate

Sex

Hospital A

99-1

231456

Sinkwell, Ralph J

12-2-59

M

Hospital B

123-0

A47239

Sinkwell, RJ

2-12-59

M

Hospital A

99-1

1032115

Sinkwell, Ralph

12-2-59

Hospital C

101-0

A3276

Fredrick, Alice

4-14-78

F

Hospital A

101-0

2314590

Fredrick, Alyce

4-14-78

F

# Deidentification

- **Broad problem, not just the “headers”**
  - Text frequently contains identifying information
  - Small cell size
- **De-identify at the time of retrieval**
- **Rely on matching in a “central” server**