The background is a light green gradient. In the upper right, there is a faint, semi-transparent image of a laptop. Overlaid on the entire background is a pattern of binary code (0s and 1s) that appears to be curving or flowing from the top left towards the bottom right.

The Power of UC Data Sharing

UC-Wide Biomedical Research
Acceleration Initiative Retreat

10/08/10

Evolution of Data Sharing

Cross-
institutional
Cohort
Discovery

Limited
Data Sets

Comparative
Effectiveness

Quality of Care

CTSA i2b2
tools

HOMERUN
Research Project

Enterprise Level
UC-REX tools



UC Davis

- 2,032,031 patients in the system
 - first visit in EMR - 2003
 - lab and radiology results first,
 - then clinical documentation with encounters,
 - then medication order entry
-
- 1,369,104 lab records
 - 391,381 patient encounters
 - 248,878 medication orders

UC Irvine

- 1,382,167 patients in data warehouse
- Year of first record = 1992
- New patient records/month in 2010 = 3,600

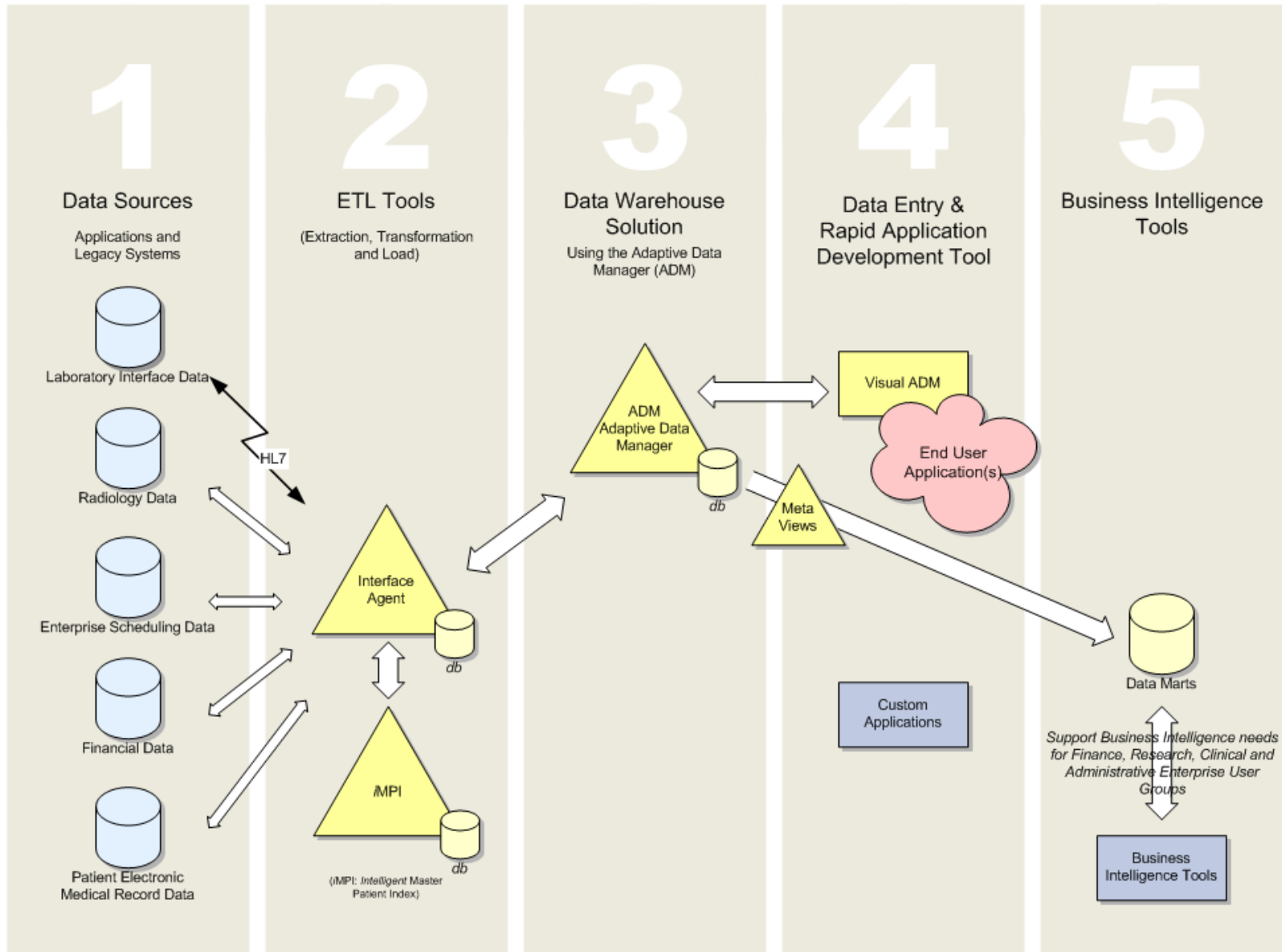
UCSD

- 2 million patient records
- First year on record: 2005
- Inpatient data in Epic since April 2010, but we will be getting data from 2006
- Lab results from 2003

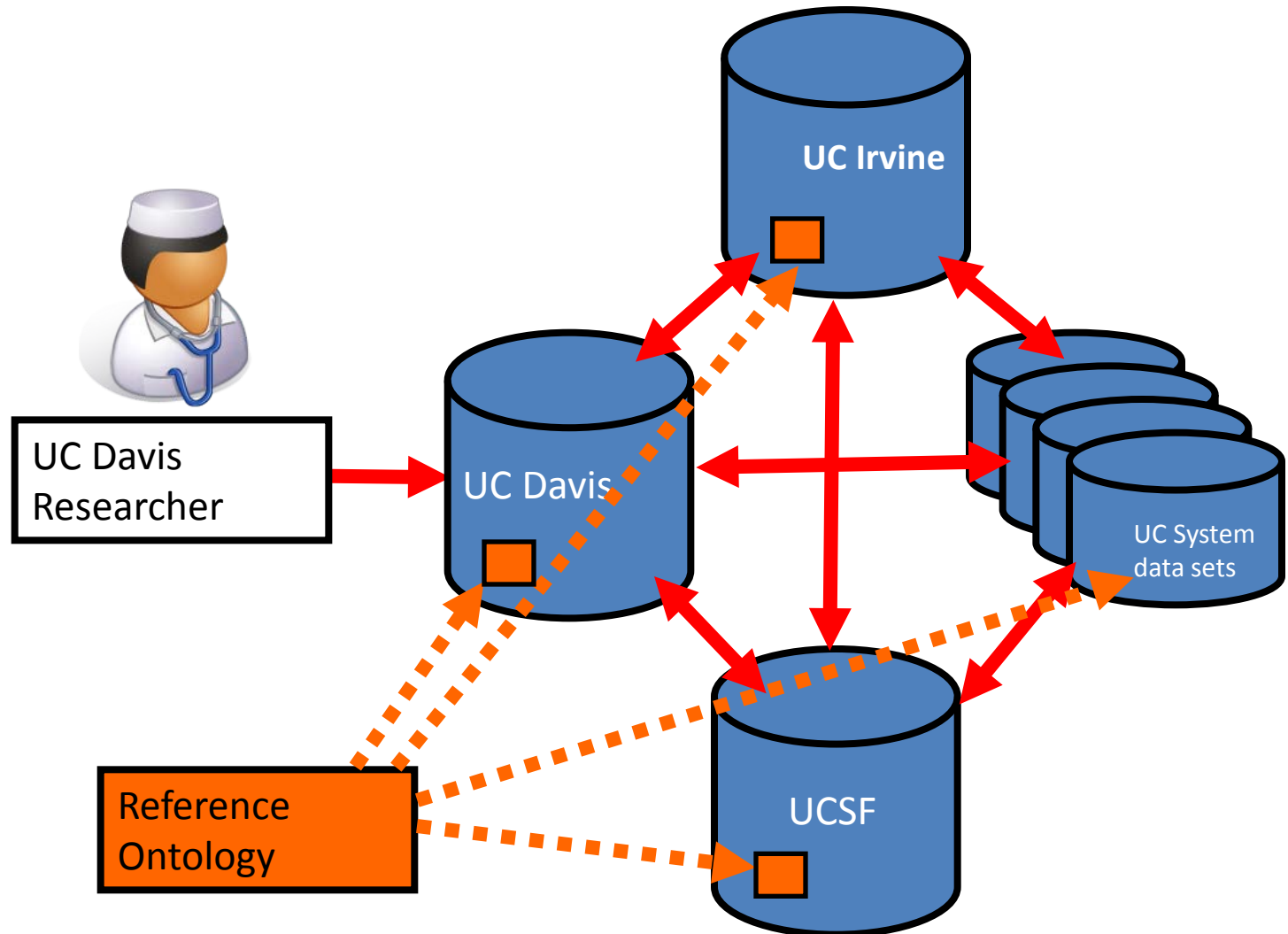
UCSF

- 2.7 million patient records (12 years of data)
- UCSF School of Dentistry EMR to be added soon (500,000 patients)
 - The two MRN schemes are not linked, so we cannot yet determine the overlap
- San Francisco General Hospital to be added next spring (1.3 million patients, 22 years of data)

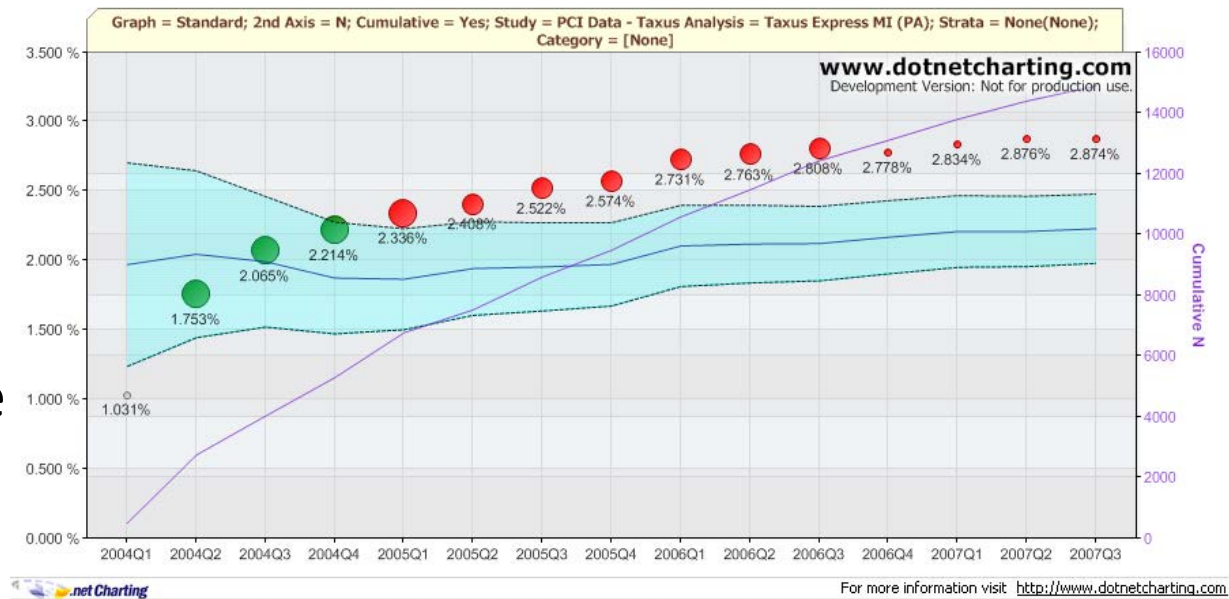
HEALTHCARE DATA WAREHOUSE



Cross-Institutional Cohort Discovery



- Research
 - counts
 - associations
 - disease surveillance
 - safety of new
 - Medications
 - Devices
- Data from the Data Warehouse that can automatically be pulled into other applications
 - Disease-specific research registries
 - Clinical trial management systems
 - Biosample repositories
- Data can be shared with other institutions
 - Practice-based research networks



Demo

The screenshot displays the i2b2 Query & Analysis Tool interface. The browser window shows the URL `http://services.i2b2.org/webclient/#`. The tool's header includes navigation links: **Find Patients** | **Analysis Tools** | **Message Log** | **Help** | **Logout**.

Left Panel: Navigate Terms

- 75-84 years old
- >= 65 years old
- >= 85 years old
- zz not recorded
- Gender
 - Female
 - Male
 - Unknown
- Language
- Marital Status
- Race
- Religion
- Vital Status
- Zip codes
- Diagnoses
 - Circulatory system
 - Conditions in the perinatal period
 - Congenital anomalies
 - Digestive system
 - Endocrine disorders
 - Events of pregnancy
 - Genitourinary system
 - Hematologic diseases
 - Infectious and parasitic diseases
 - Injury and poisoning
 - Mental Disorders
 - Metabolic and immunity disorders
 - Musculoskeletal and connective tissue
 - Neoplasms
 - Neurologic Disorders
 - Nutritional deficiencies
 - Respiratory system
 - Acute respiratory infections
 - Chronic obstructive diseases
 - Asthma

Right Panel: Query Tool

Query Name: Femal-75-84-Asthm@05:18:45

Group 1			Group 2			Group 3		
Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude	Dates	Occurs > 0x	Exclude
			Female	75-84 years old			Asthma	

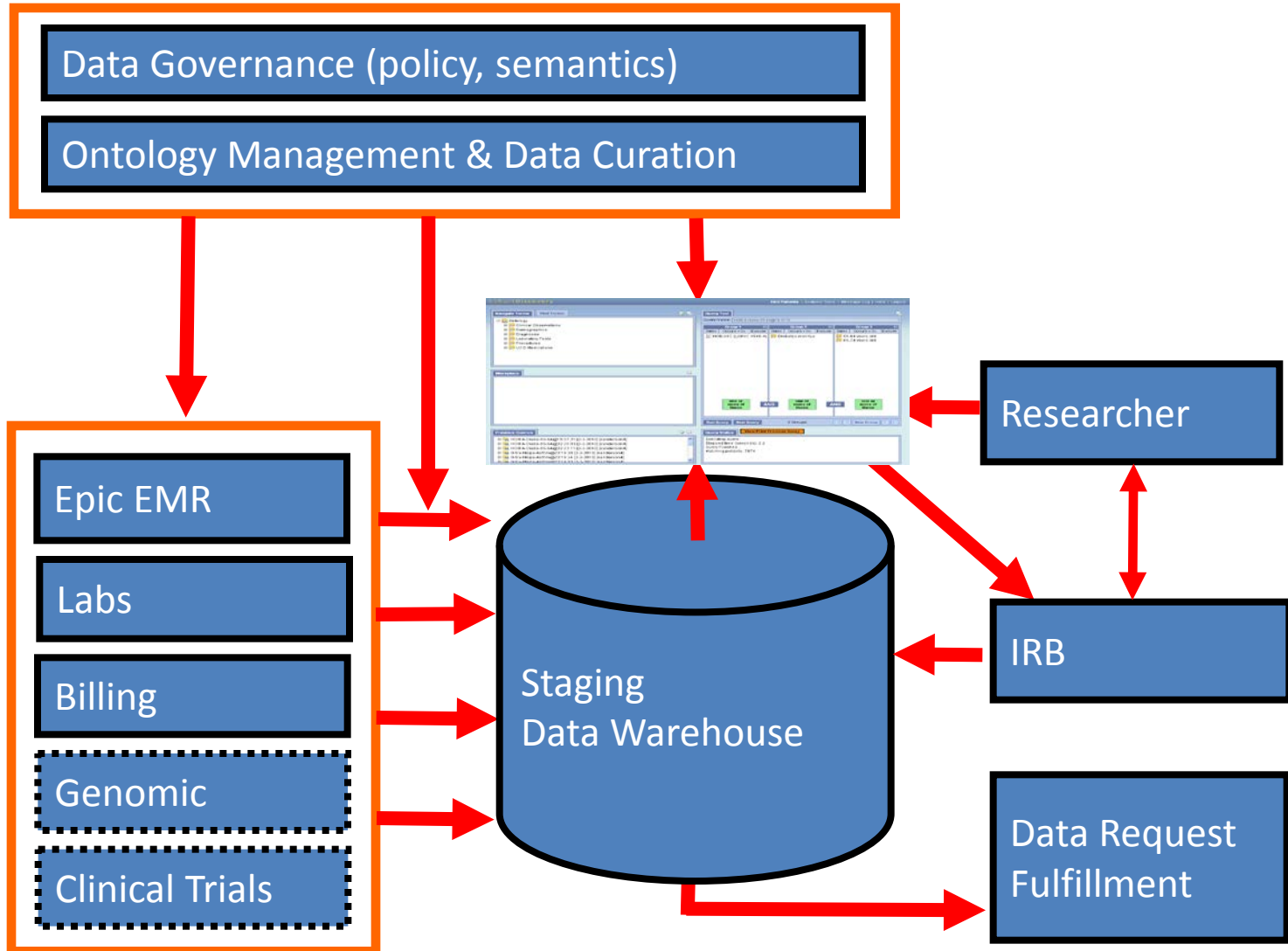
Query Logic: **one or more of these** AND **one or more of these** AND **one or more of these**

Buttons: Run Query, New Query, 3 Groups, New Group

Query Status

Executing query...
Elapsed time (seconds): 24.1
Query Finished...
Matching patients: 2

Cohort Discovery in Context



HOMERUN

(Hospital Re-engineering Network)

- Comparative Effectiveness Research
- Compares the results of a hospital's business processes to the mean exposed on HOMERUN
- Data use agreement strictly enforces the appropriate use of data collected from the network
- A web based portal to mask individual hospital performance data when necessary

UC Data Sharing

Cross-
institutional
Cohort
Discovery

Limited
Data Sets

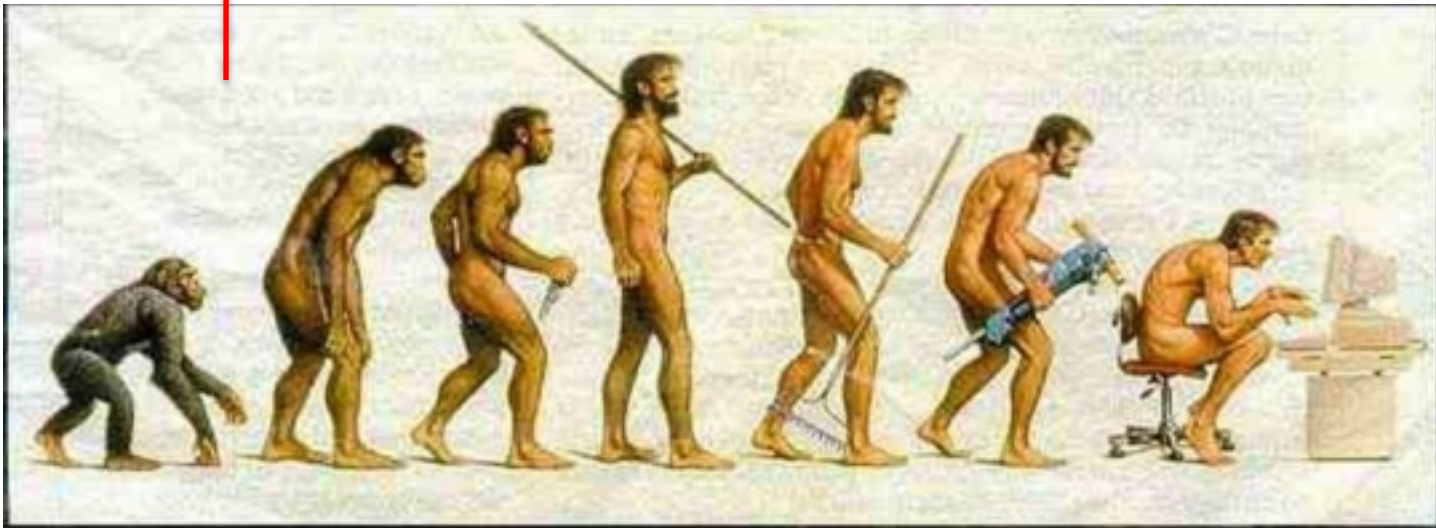
Comparative
Effectiveness

Quality of Care

CTSA i2b2
tools

HOMERUN
Research Project

Enterprise Level
UC-REX tools

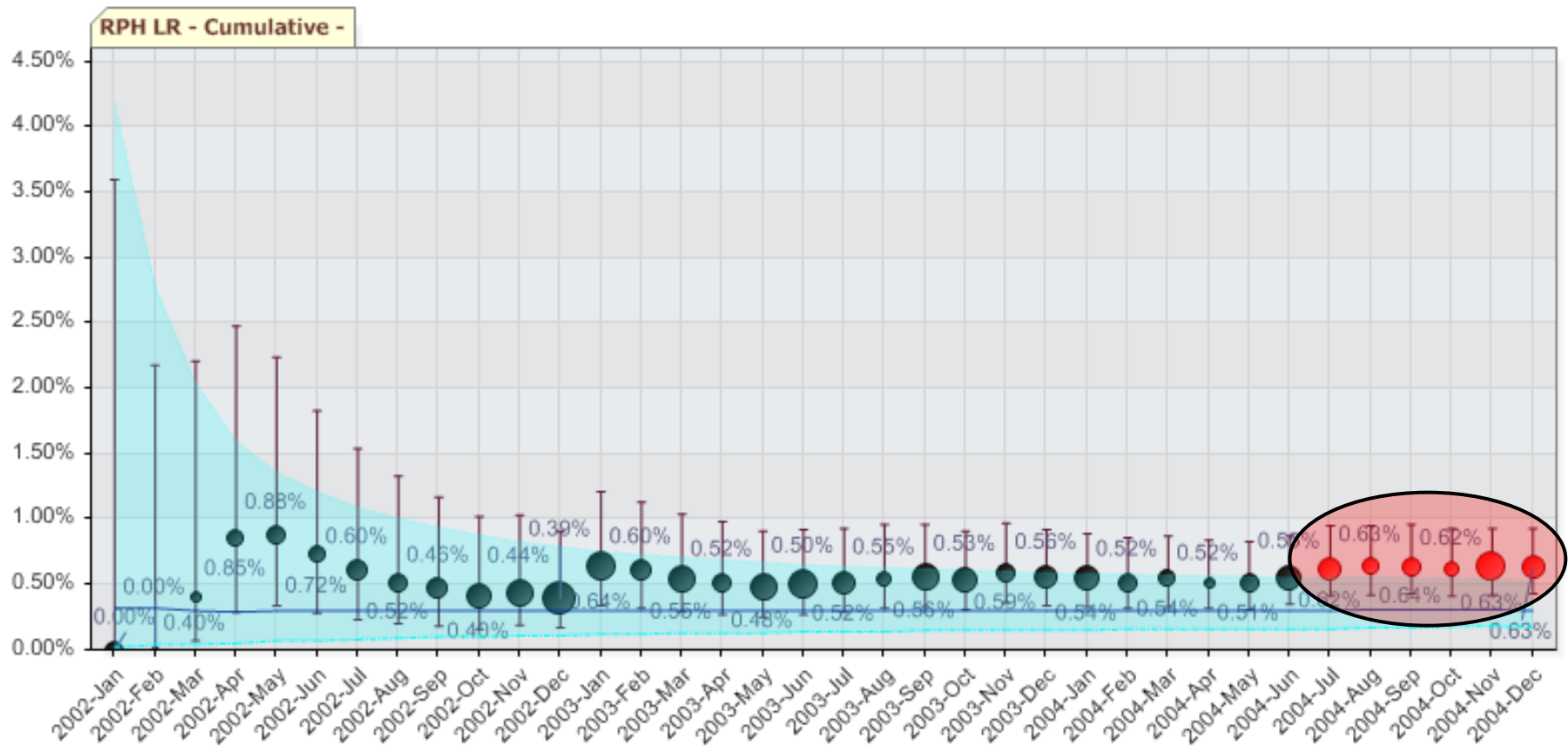


Bottom Line

UC invested > \$500,000,000 to collect patient data through EMRs

< 1% of this needed to enable data sharing initiatives for research and quality improvement

PCI complications: RPH



Matheny ME, Arora N, Ohno-Machado L, Resnic FS. Rare adverse event monitoring of medical devices with the use of an automated surveillance tool. *AMIA Annu Symp Proc.* 2007: pp. 518-22.