

A Prescription for Quality Healthcare



NCVHS Testimony
Patient Matching



Teri Byrne, RxHub
September 21, 2005

Agenda

Master Patient Index (MPI) Overview

MPI Data

Patient Matching

Applying the MPI

Development and Pilot

Industry Utilization

Conclusion

A Prescription for Quality Healthcare



Master Patient Index (MPI) Overview



Master Patient Index (MPI) Overview

Cornerstone of RxHub transaction services

140 million active member records

Limited demographics to match patient

- Last name, first name, middle name, suffix, date of birth, zip code, gender

Robust matching algorithms

- Statistically sound
- Tuned for performance
- Tuned for minimal false positives
 - Chance of false positive extremely remote
 - Over 28 million transactions processed with no report of false positive match

Unprecedented in the health care industry

Nationwide access to patient information

- Transactions from all 50 states

A Prescription for Quality Healthcare



MPI Data



MPI Demographic Data

Name - first, last, middle initial, suffix

Date of birth

Address

Gender

Payer Unique ID

- Used by vendor and payer to link to patient eligibility, medication history

RxHub does not create a patient ID

- Single pass
- Dynamic linking of patient

MPI Data Loads

Bulk loads

- Data analysis
- Periodic refreshes

Nightly updates

- Demographic data changes only

Audits

- Recommended ninety days after original load
- Compares payer data with RxHub data
- Bulk load performed if issues found
- Continuous improvement with quality of data

Clean data

- Source responsible for data and is data owner
- Better data - better match
- Incentive for source – better information to the physician

A Prescription for Quality Healthcare



Patient Matching



Matching Algorithm Objective

Reduce match rate to assure valid match

- Minimize false positives, which increases false negatives

DEVELOPING A HIGHLY ACCURATE MATCHING PROCESS REQUIRES UNDERSTANDING ERROR TYPES AND THEIR ROOT CAUSE.

		Matching decision	
		Match	Don't match
Truth	Same member	Correct decision	False negative
	Different members	False positive	Correct decision

False Negatives – where two records which relate to the same member are not linked during the matching process.

False Positives – where two records that do not relate to the same member are linked during the matching process.

Source: “Customer data integration and accurate data matching: achieving a 360° customer view”, © 2003 Initiate Systems, Inc.

Matching Logic

Name

- Phonetic comparisons
- Name component matches
- More common names weighted differently
- Nickname comparisons not currently used

Date of Birth

- Two changes function
- Birth year weight table

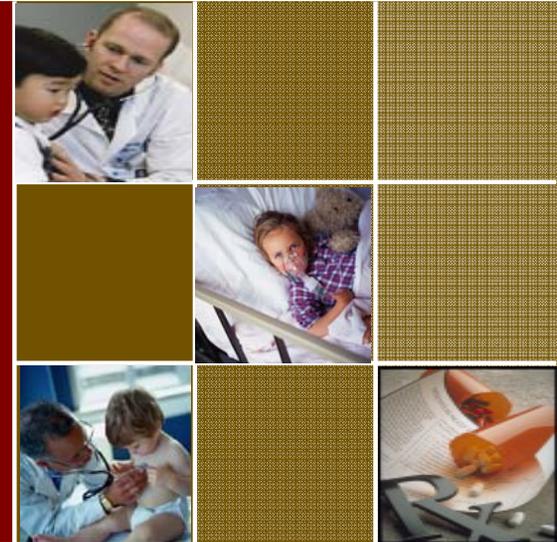
Zip Code

- Five digit match initially
- Five digit code weight table
- Three digit match second
- Three digit code weight table

A Prescription for Quality Healthcare



MPI Application



MPI Application

Patient information locator

- Routes request to appropriate source
- No eligibility data stored
- Not a local database for clinical information

Includes more than one instance of patient – if dual coverage

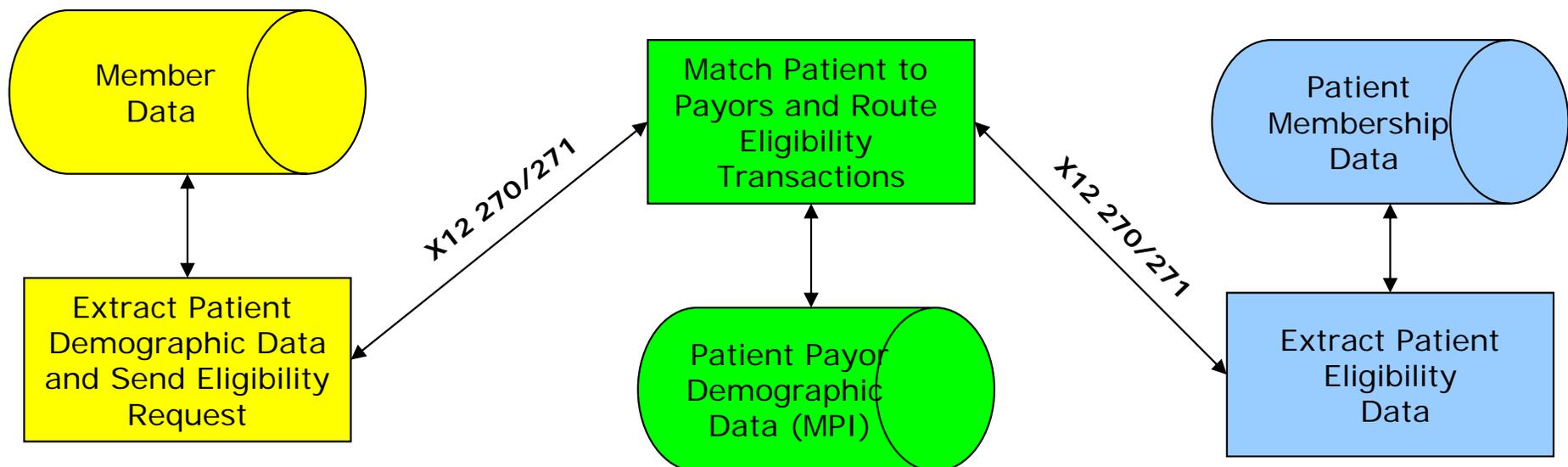
- One record per benefit coverage
- No 'patient identifier' key
- 10% dual coverage found

Technology Vendor Patient Data Access Model

POC Application

RxHub

Payor/PBM

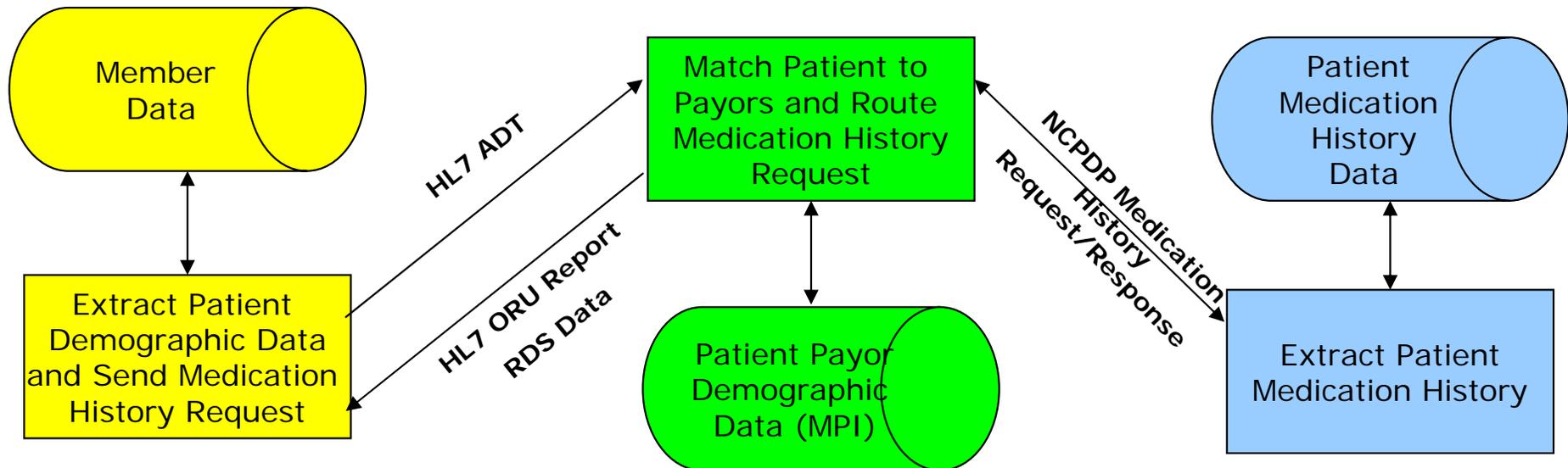


Hospital Patient Data Access Model

Hospital Application

RxHub

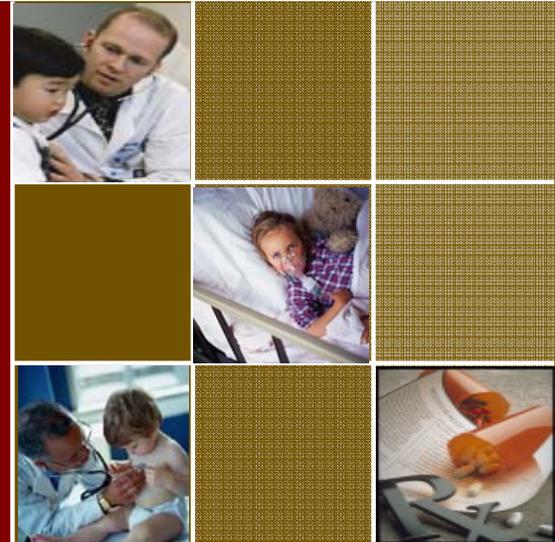
Payor/PBM



A Prescription for Quality Healthcare



MPI Development



MPI Development Timeline

MPI vendor candidate evaluation and selection

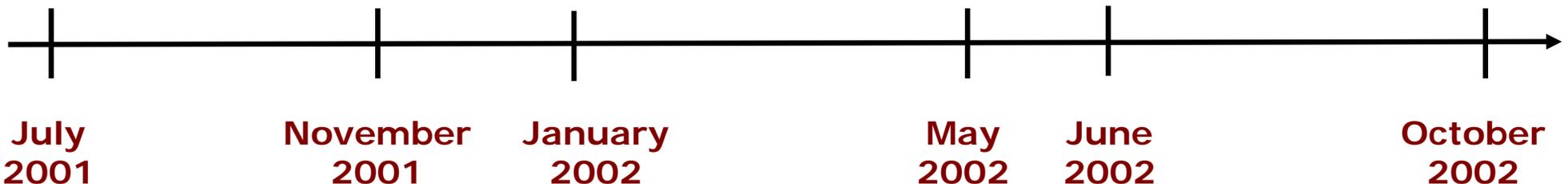
- Matching accuracy
- Performance
- Software integration

Algorithm design and implementation

- PBM data population
- Data characteristics
- Data frequency
- 50 M records analyzed
- Matching strategies
- Value/weight assignments

Pilot

- Matching accuracy
- Tech Vendor data characteristics
- 104,246 transactions processed
- 379 participating physicians
- 3 participating PBM's
- 3 participating Tech Vendors



Pilot Conclusions

MPI functionality

- Higher number of unique members than expected
- No incorrect members returned (false positives)
- Higher rate of dual coverage than expected – 5.2%
- Key fields validated – Name, DOB, Zip Code
- Social Security Number not helpful
- Unique matches in 45% of pilot requests

MPI loads and updates validated

Switch functionality validated

Eligibility transaction format and data validated

Certification process validated

Operational reports identified

A Prescription for Quality Healthcare



Industry Utilization



Interoperability Among All Stakeholders

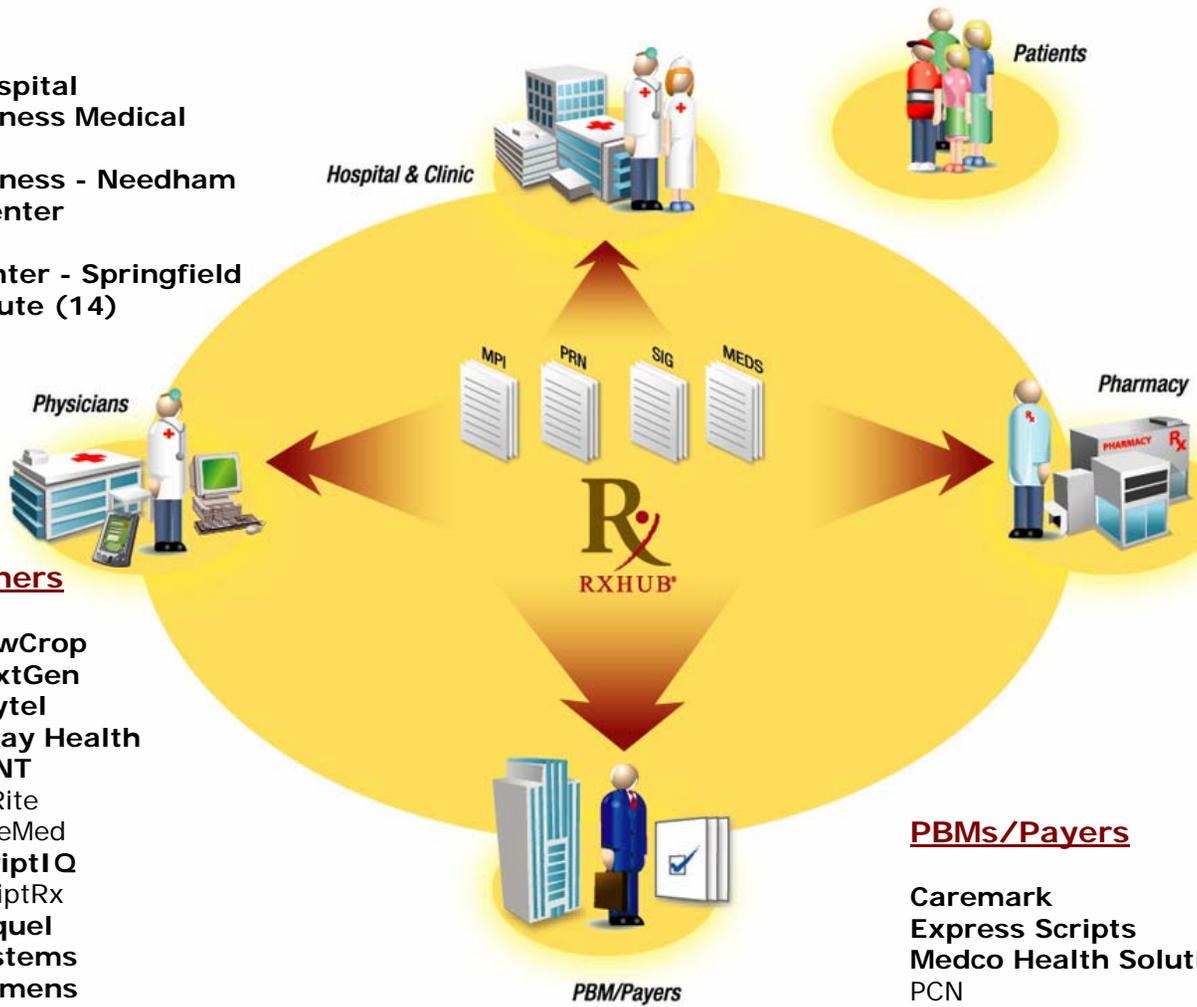
Hospitals

Barnes Jewish Hospital
 Beth Israel Deaconess Medical Center
 Beth Israel Deaconess - Needham
 Boston Medical Center
 Emerson Hospital
 Mercy Medical Center - Springfield
 Regenstrief Institute (14)

Hospital & Clinic

Patients

BOLD = Production



Pharmacies

Caremark Mail Order
 eRx Network
 Express Scripts Mail Services
 Medco Mail Order

Technology Partners

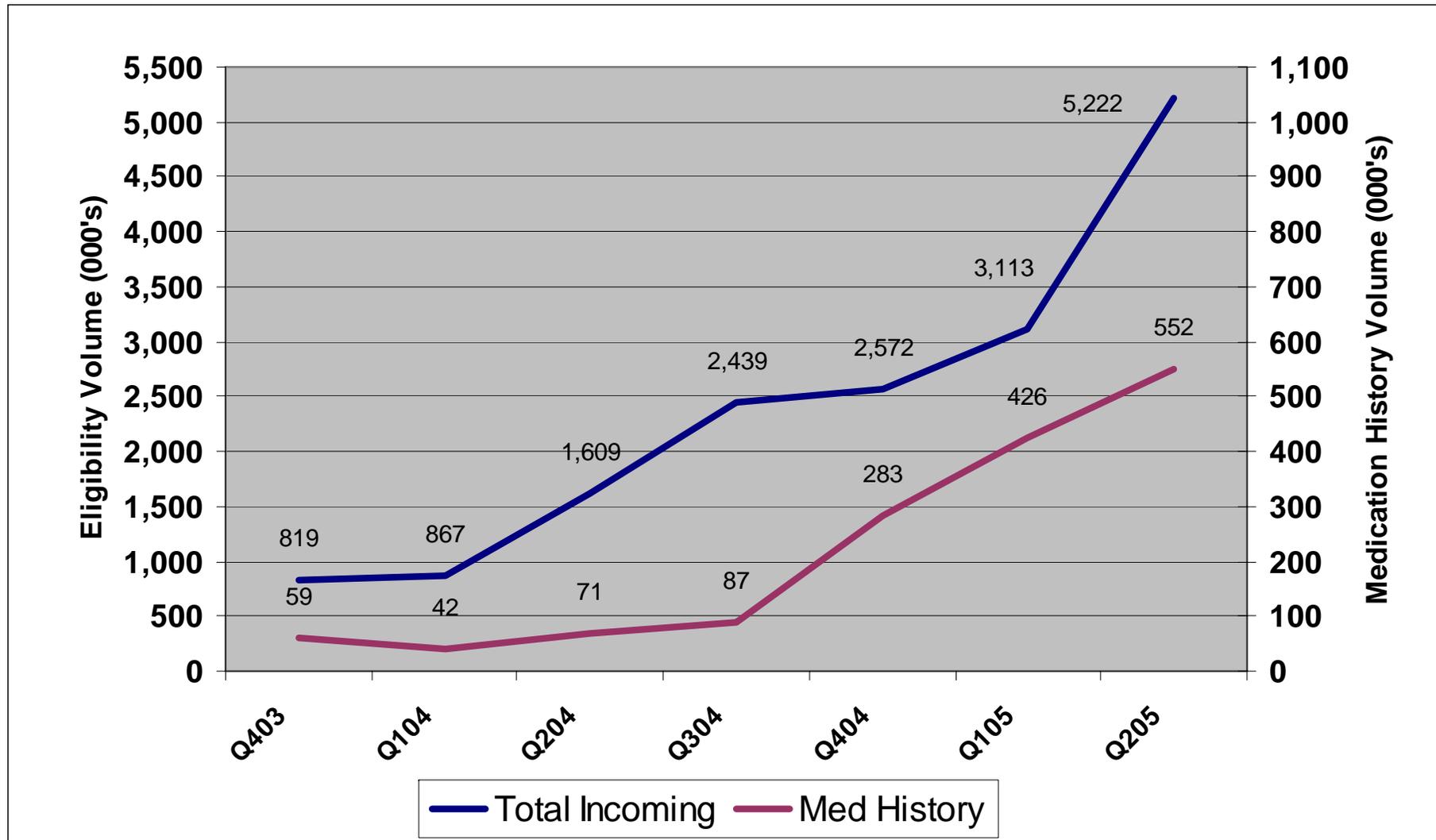
A4 Health	NewCrop
Allscripts	NextGen
AthenaHealth	Phytel
Bond Medical	Relay Health
Cerner	RxNT
Catalis Health	RxRite
DrFirst	SafeMed
Emdeon	ScriptIQ
Gold Standard	ScriptRx
HealthRamp	Sequel
HealthVision	Systems
InstantDx	Siemens
iScribe	Skyscape
McKesson	SSIMED
MDanywhere	Synamed
MdOffices	Wellinx
MedKeeper	ZixCorp
MedPlus	

PBM/Payers

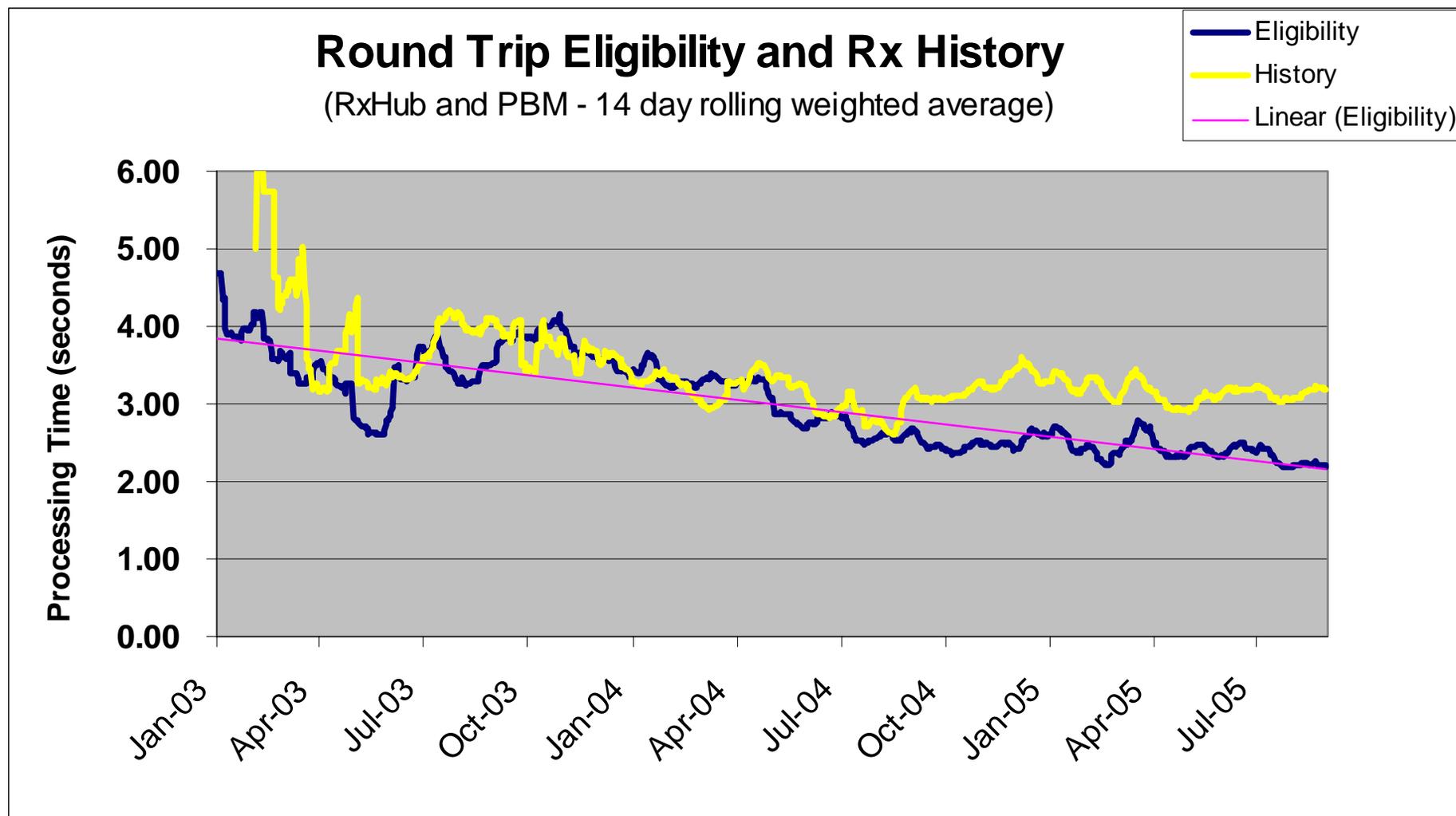
Caremark
 Express Scripts
 Medco Health Solutions
 PCN
 Pharmacare
 SXC
 CAQH (Aetna, Anthem, Aultcare, Cigna, First Health, Wellpoint)



ePrescribing Adoption is Happening!



Response Time Decreasing with Growth



A Prescription for Quality Healthcare



Conclusion



Conclusion

National Patient Identifier not needed

Nationwide implementation of patient matching is possible

Real time matching and clinical data query is proven

MPI can be tuned for excellent performance