



DATA: What is it good for?

A National and Regional Overview of Data and Analytics

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HealthBridge, Greater Cincinnati Health Council & the Health Collaborative

himss
CENTRAL & SOUTHERN OHIO *Chapter*

Who We Are



A neutral forum for those concerned with health and healthcare



The Three Part Aim

Better healthcare



Improving patients' experience of care within 6 domains of quality: *Safety, Effectiveness, Patient-Centeredness, Timeliness, Efficiency, and Equity.*

Better health



Keeping patients well so they can do what they want to do. Increasing the overall health of populations including addressing behavioral risk factors and focusing on preventive care.

Reduced costs



Lowering or controlling the cost of care per capita



**Health Information Technology and Exchange as a Foundation
for New Payment and Delivery Models**

Greater Cincinnati Experience: Leading with National Distinction

In 2012, the community formed a one-of-a-kind partnership to accelerate and focus on the essential elements of regional health care transformation



**Quality
Improvement
& Medical
Home**

ONC Beacon
Community

**Payment
Realignment**

CMS
Comprehensive
Primary Care
Initiative

**Data
Collection &
Public
Reporting**

RWJF
Aligning Forces
for Quality

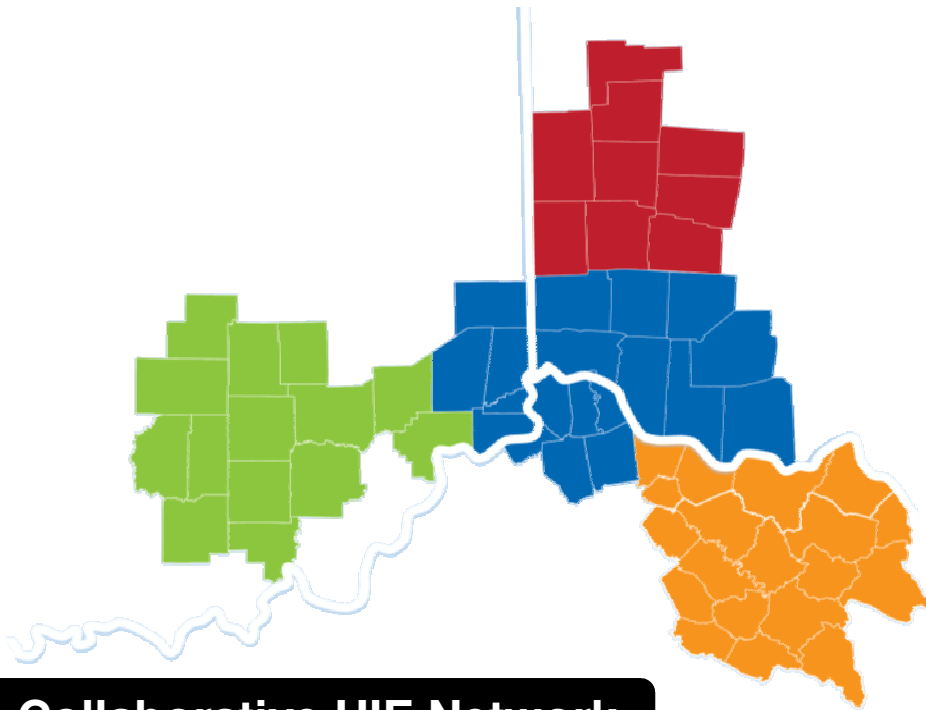
**Health IT,
Meaningful Use
& Exchange
Services**

ONC Regional
Extension Center

**Population
Health &
Consumer
Engagement**

Collective Impact
on Health

HealthBridge HIE Network Size & Adoption



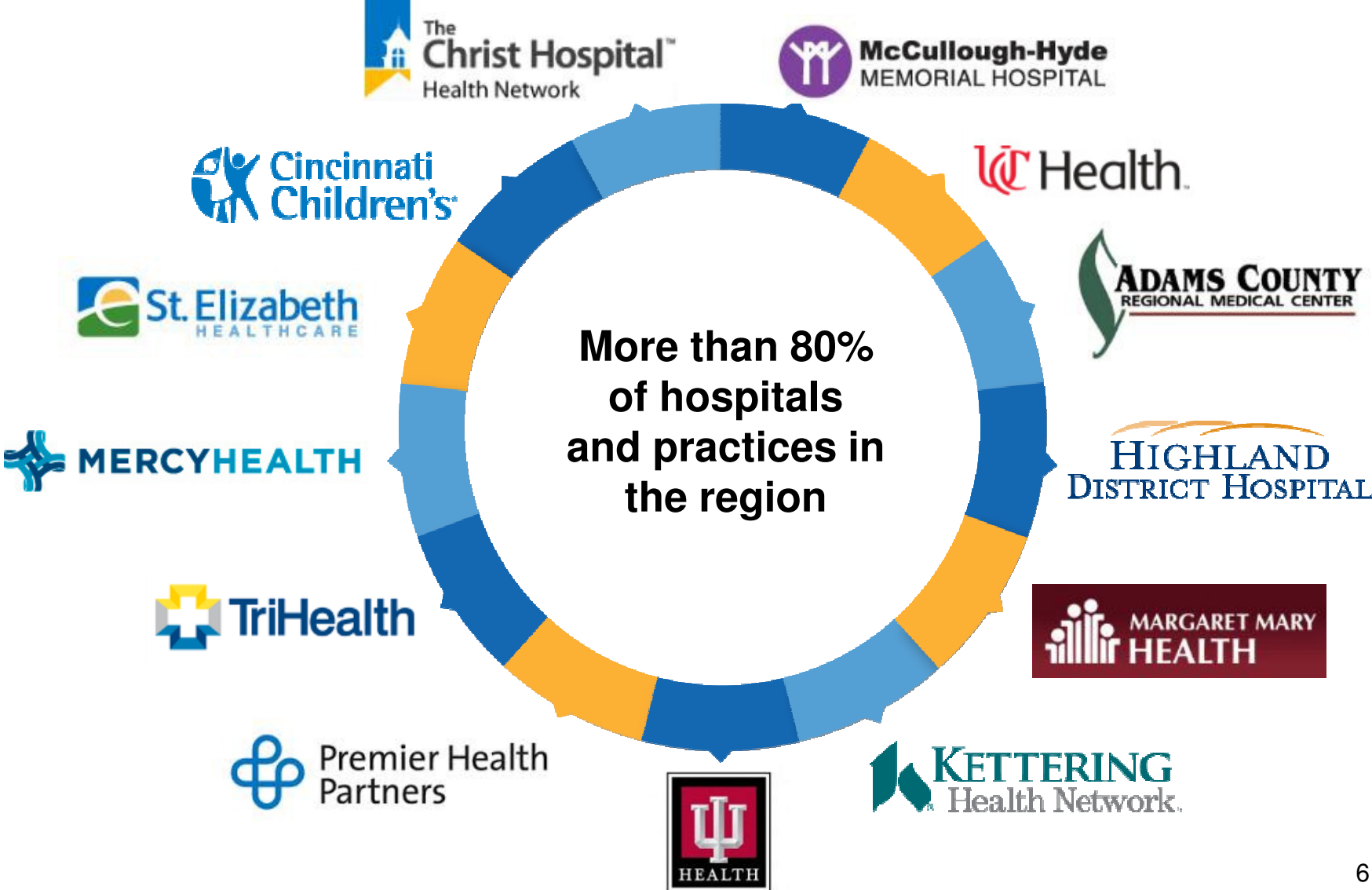
- Total HIE Network**
- 50+ Hospitals
 - 9000 Doctors
 - 3+ Million patients

Collaborative HIE Network

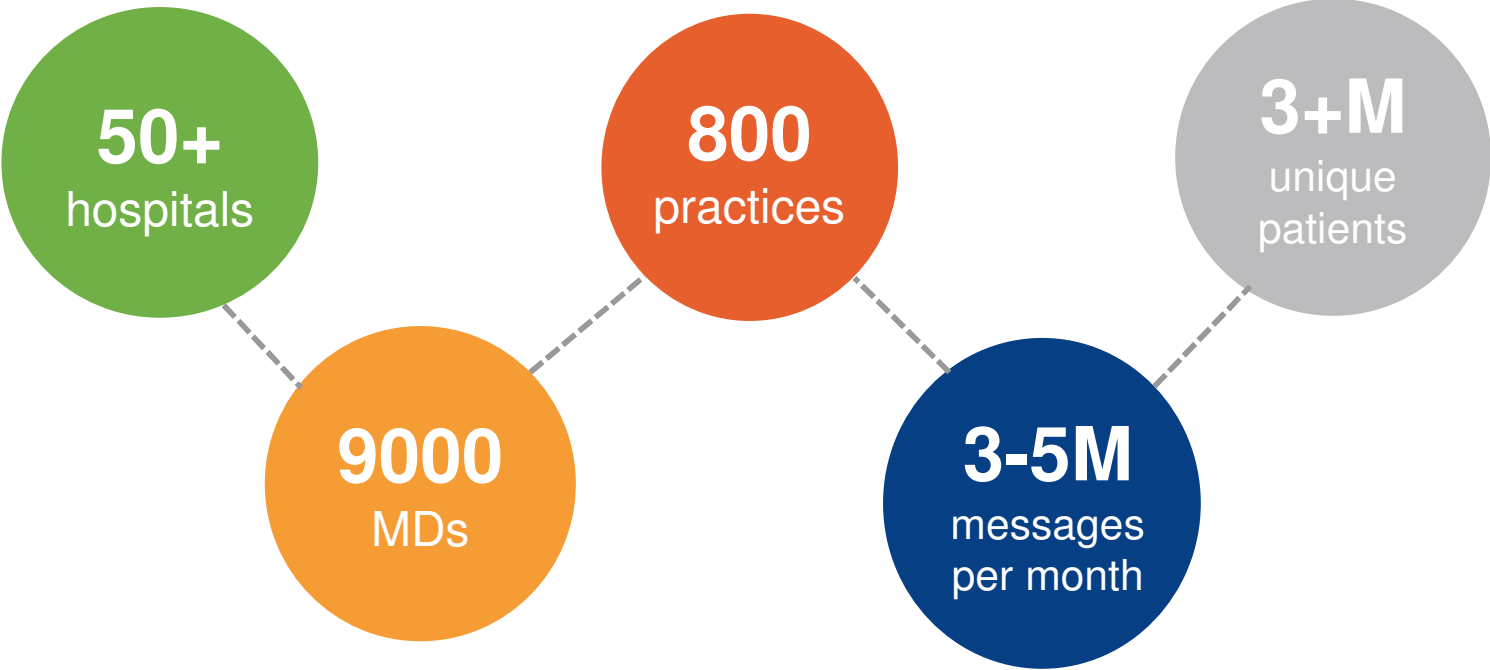
HB provides technology infrastructure for three other HIEs



Health Systems & Hospitals



Connection Statistics



>80% of physicians & hospitals exchanging data through HealthBridge

A View of the National Landscape

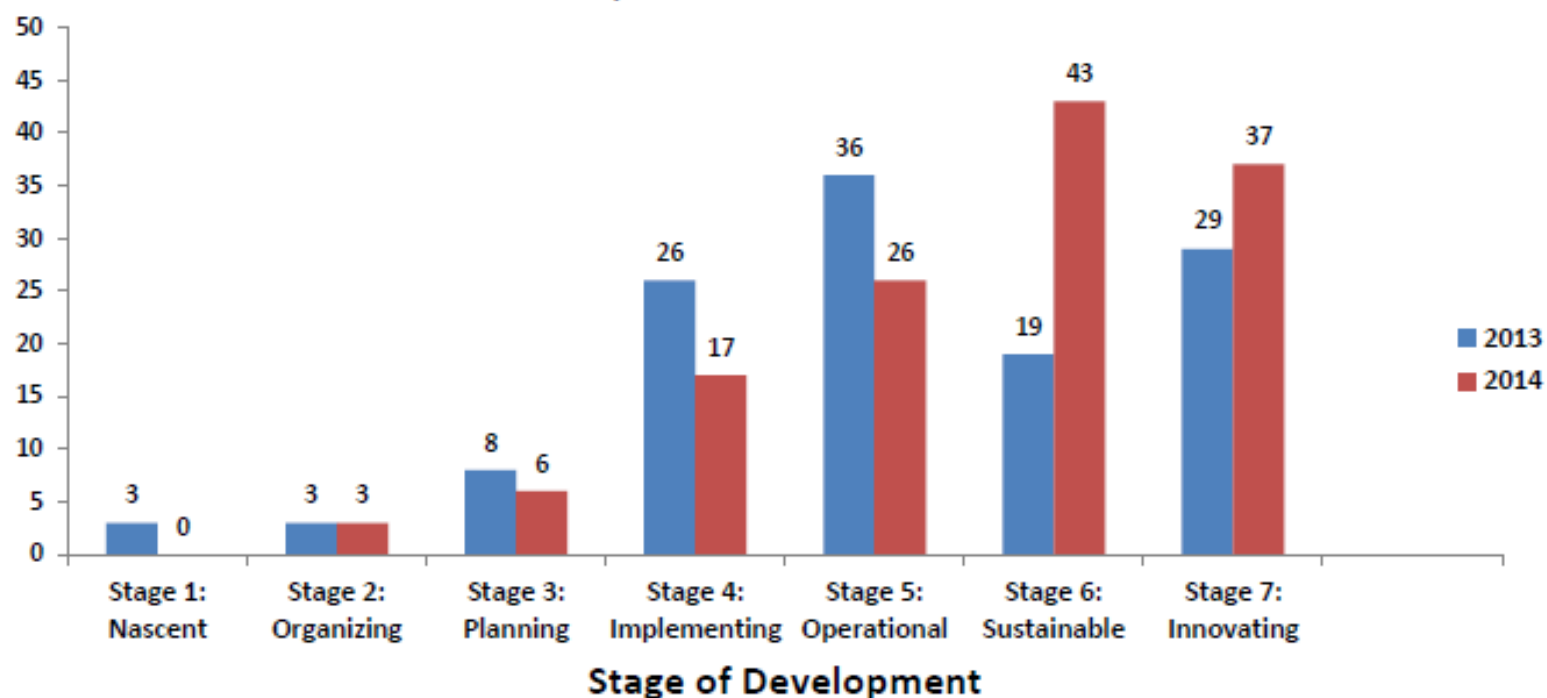
Analytics as a Foundational Driver for Payment and Delivery Innovation

2014 Health Information Exchange Survey Results

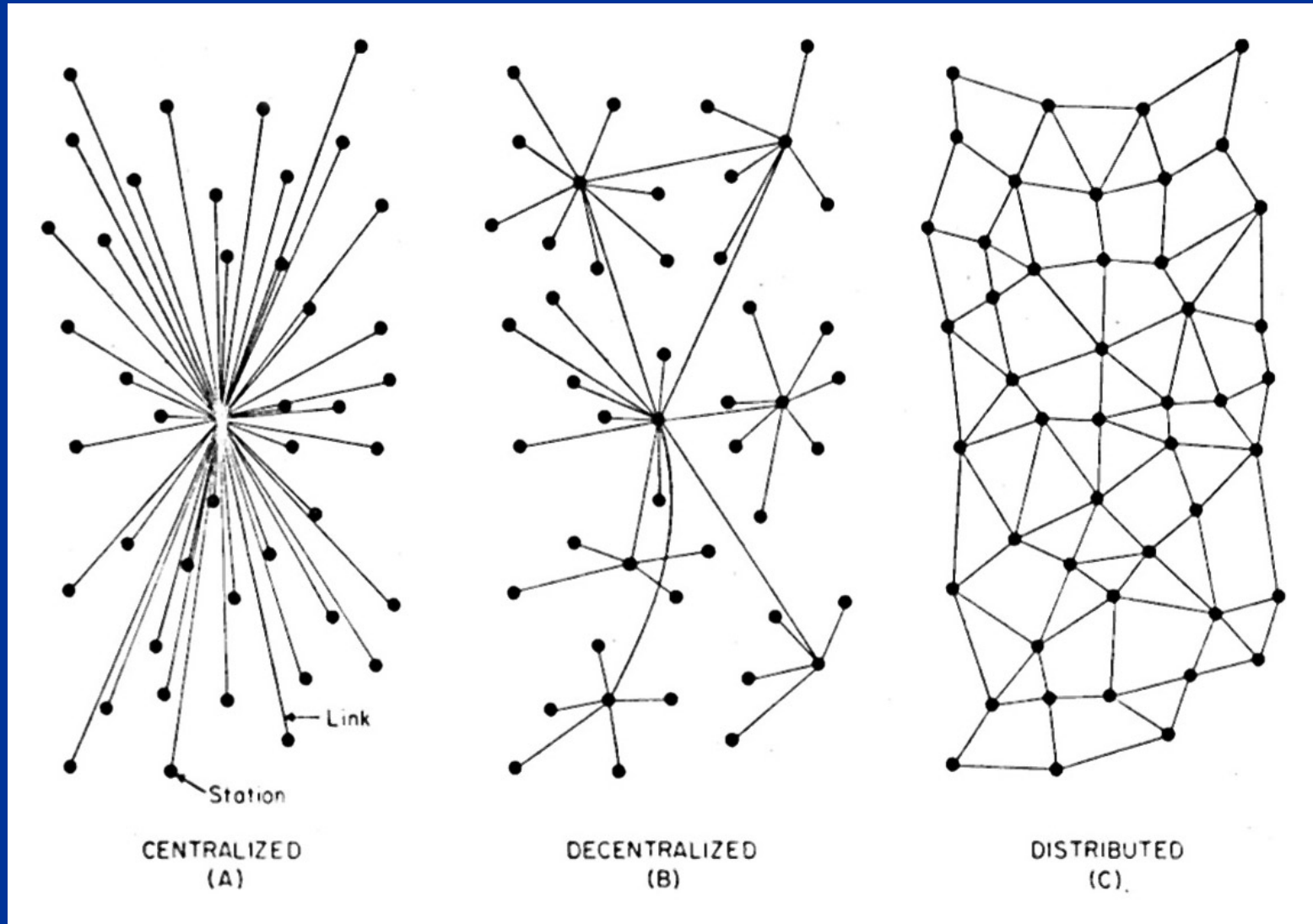


Out of 135 respondents...

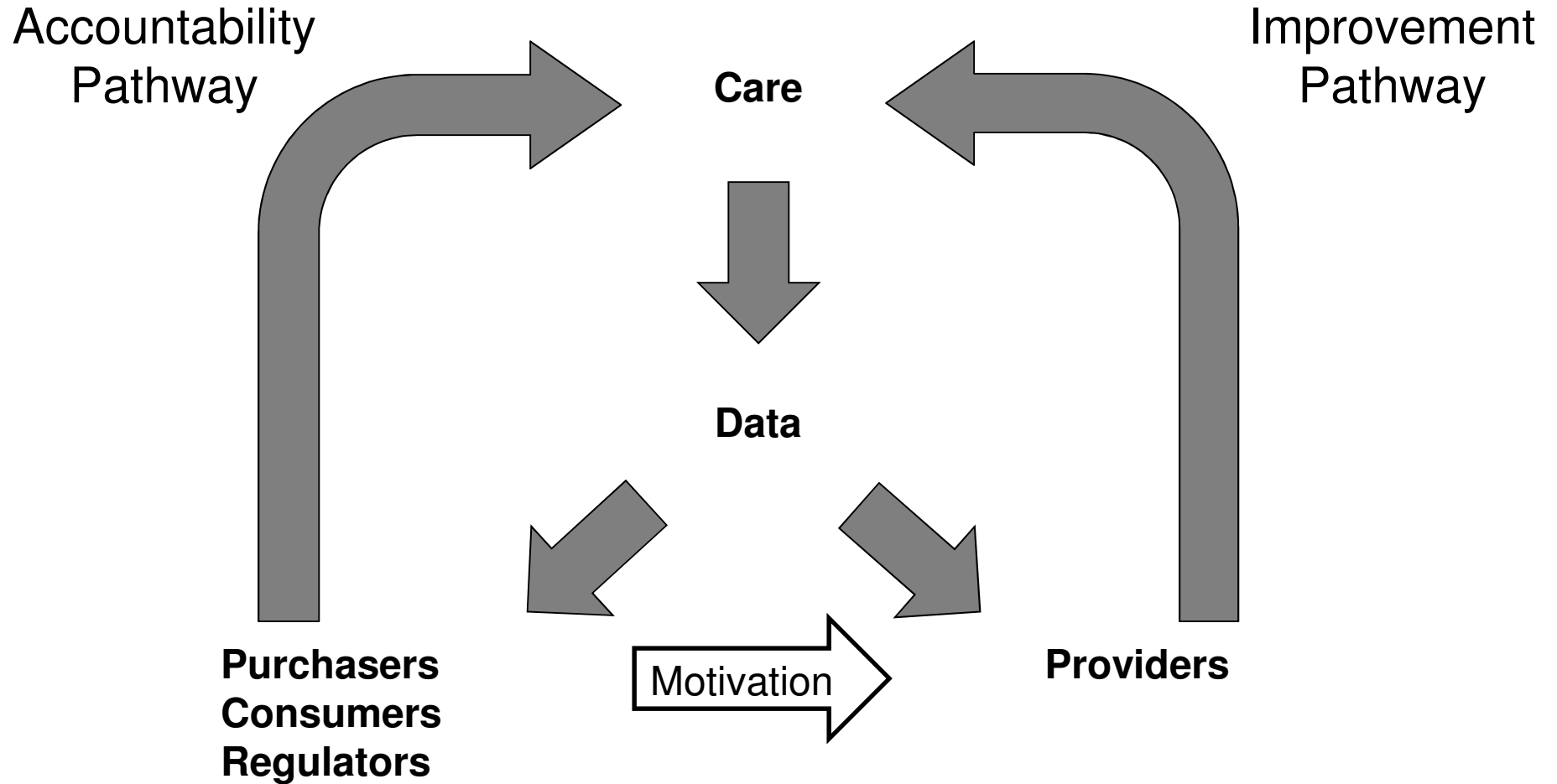
- 106 respondents reported that their organization has reached stage 5 (operating) or higher on eHI's HIE maturity scale.
 - An increase of 11 percent since 2013



Why Private vs Public HIE is a False Choice



Data for Improvement



Growth of the Health Care Analytics Industry

- Growth of EHR use is a key driver in the growth of data and analytics.
 - In 2012 healthcare data worldwide amounted to approximately 500 petabytes (one petabyte equals 10¹⁵ bytes of digital information)
 - by 2020 this amount will likely increase to 25,000 petabytes; an increase by 50 times. *Source Health Affairs - http://www.healthaffairs.org/events/2014_07_09_big_data/media/slides.pdf*
- Data analytics adoption is poised to grow from just 10 percent of organizations to more than 50 percent adoption by 2016, according to Frost and Sullivan market analysis.
- 94% of health care leaders surveyed believe that partners involved in value-based care initiatives (e.g. PCMH, ACOs) must have analytics in place to succeed.
- But, only 42% have a plan for how their analytics platform will adapt and grow over time. (*Source: eHealth Initiative–CHIME Survey*)

Growth of the Health Care Analytics Industry

New Venture Capital Investment in Health Care Data & Analytics Growing Rapidly

- \$196 M venture capital invested in big data and analytics the first half of 2014 alone
- Compared with \$161 M total in 2013 according to Rock Health Digital Health Report
- More than doubled since 2011

Analytics:

Four Stage Model from HIMSS

- **Data Acquisition** - involves getting relevant data elements out of source systems for transactional and operational functions such as: Clinical order entry, Medical records, Claims payment. The classic approach to data acquisition is called Extract, Transform, Load (ETL). ETL processes are typically run in batches on a periodic schedule.
- **Data Integration** involves structuring the data from multiple source systems into a unified data model that relates all data elements to one another in a meaningful way.
- **Data Enhancement** involves adding value to the raw clinical data through classification schemes, risk adjustment formulas, and other processes that add new data elements that are useful in analysis.
- **Information Delivery** involves presenting information to a person who will use it to make a decision and take action.

Analytics: Four Stage Model from HIMSS

Key pieces of a classic IT infrastructure for analytics include:

- High-speed networks
- Computation servers
- Storage platforms
- ETL Tools
- Database engines
- Data Modeling tools
- Statistical packages
- Data Visualization Tools
- Reporting and Dashboard tools

Lessons from the Field of Analytics

- **Acquire the “right” data for the project, even if difficult** - develop a “weighted data wish list”; budget resources for acquiring both high-impact data sources as well as easy-to-acquire sources
- **Ensure that initial pilots have wide applicability** – need results to apply elsewhere in the organization or community
- **Know data’s provenance (where it came from) and lineage (what’s been done to it)** – without this knowledge, data patterns and anomalies may be misleading.
- **Don’t start with an IT solution; introduce a problem to be solved** - make sure subject matter experts are involved in design and have direct access to the data

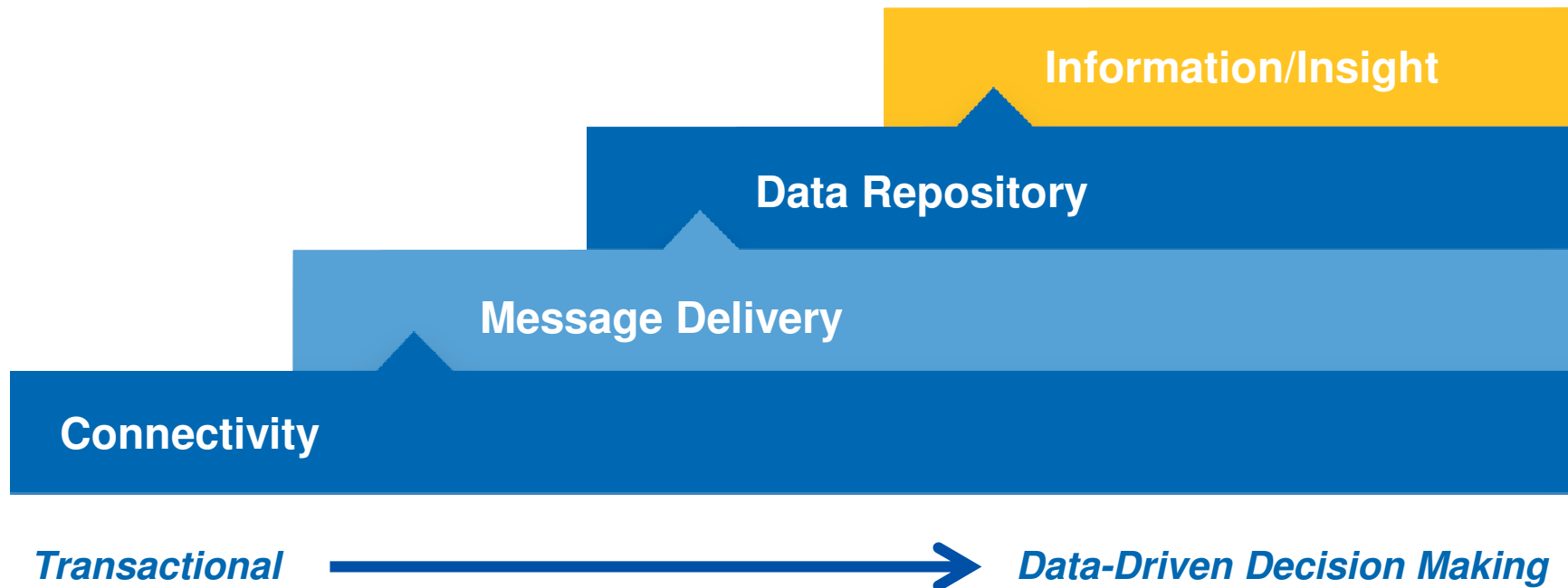
Source: [Health Affairs](#), Steven Escaravage and Joachim Roski

A View of Regional Analytics Efforts

HIE Evolution

“The goal is to turn data into information, and information into insight.”

- Carly Fiorina



HealthBridge's Analytics & BI Efforts

What We are Building

- CPC Data Aggregator
- CHT Regional Data Collaborative and Innovation Pilot Program
- Readmissions Database

How We Use Data for Innovation & Insight Today

- Master Patient Index Analysis
- HB ED/IP Alerts

HealthBridge HIE System

Who We Get Data From



Hospitals



Physicians Practices & Clinics



Lab Providers



Imaging/Radiology Providers



Health Plan Data

How We Handle Data Core HIE Technologies



Inbound Integration Engine



Data Normalization



Identity Management Solution



Clinical Repository



Routing Logic



Outbound Integration Engine

Who We Send Data To



Physicians Practices & Clinics



Health Systems



Post Acute & Social Services

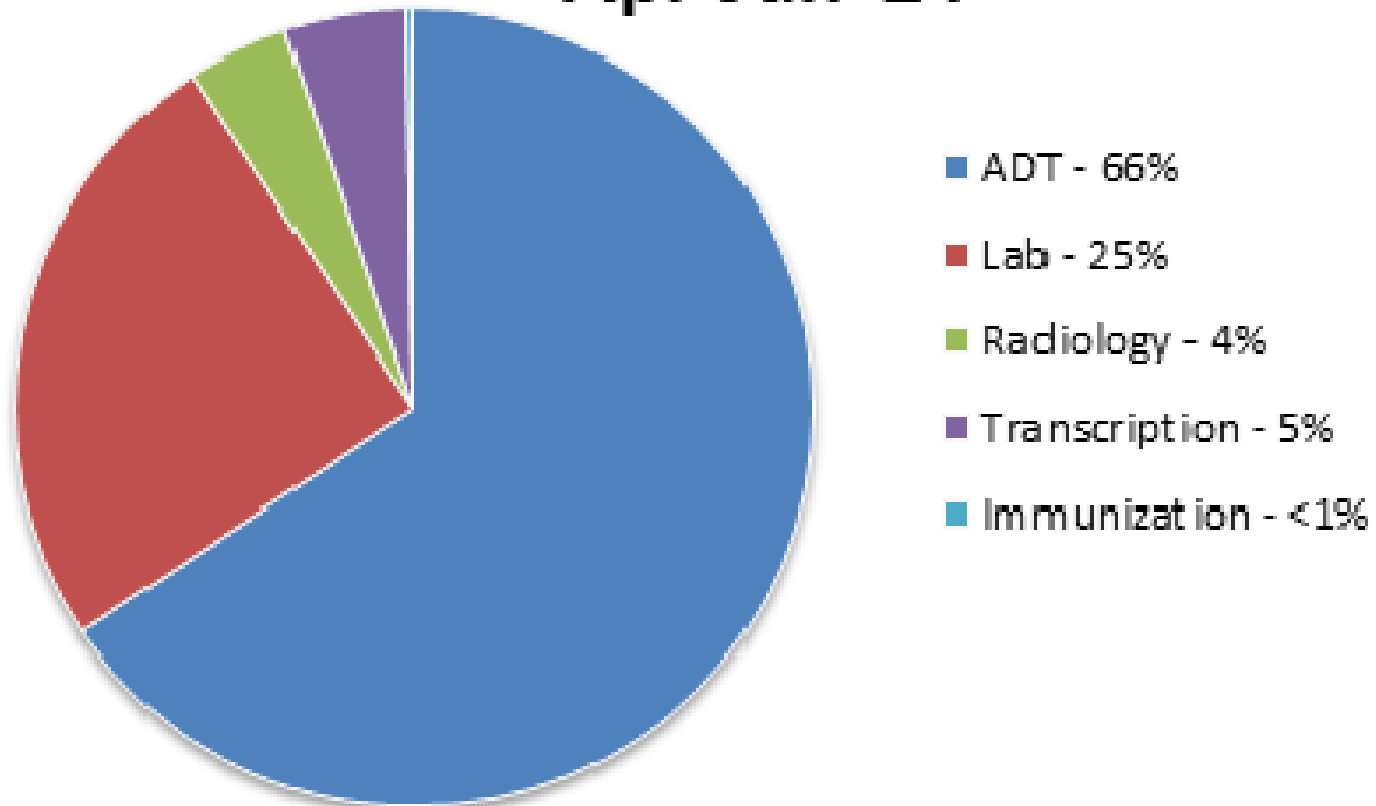


Patients & Families

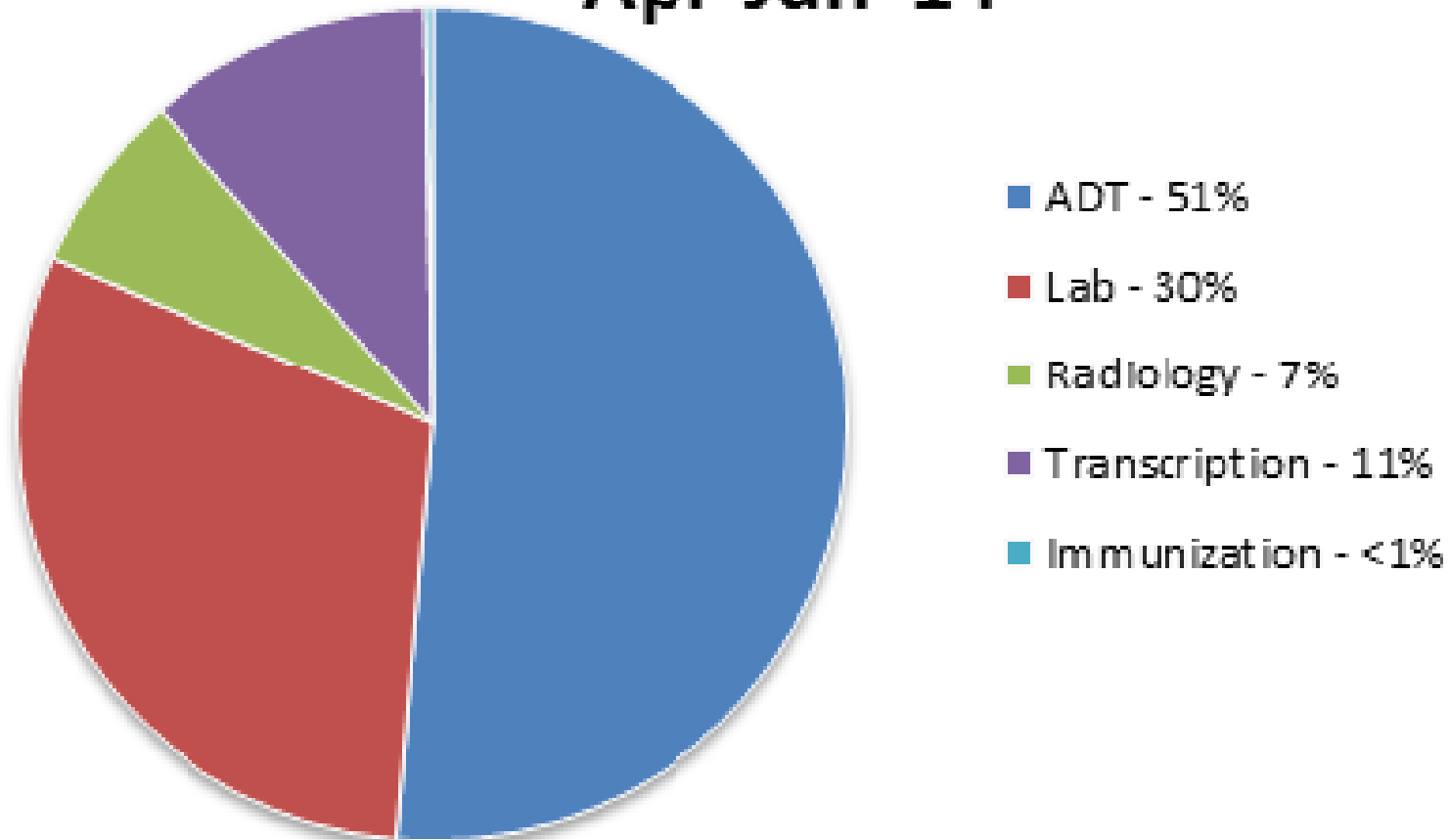


State HIE Connectivity

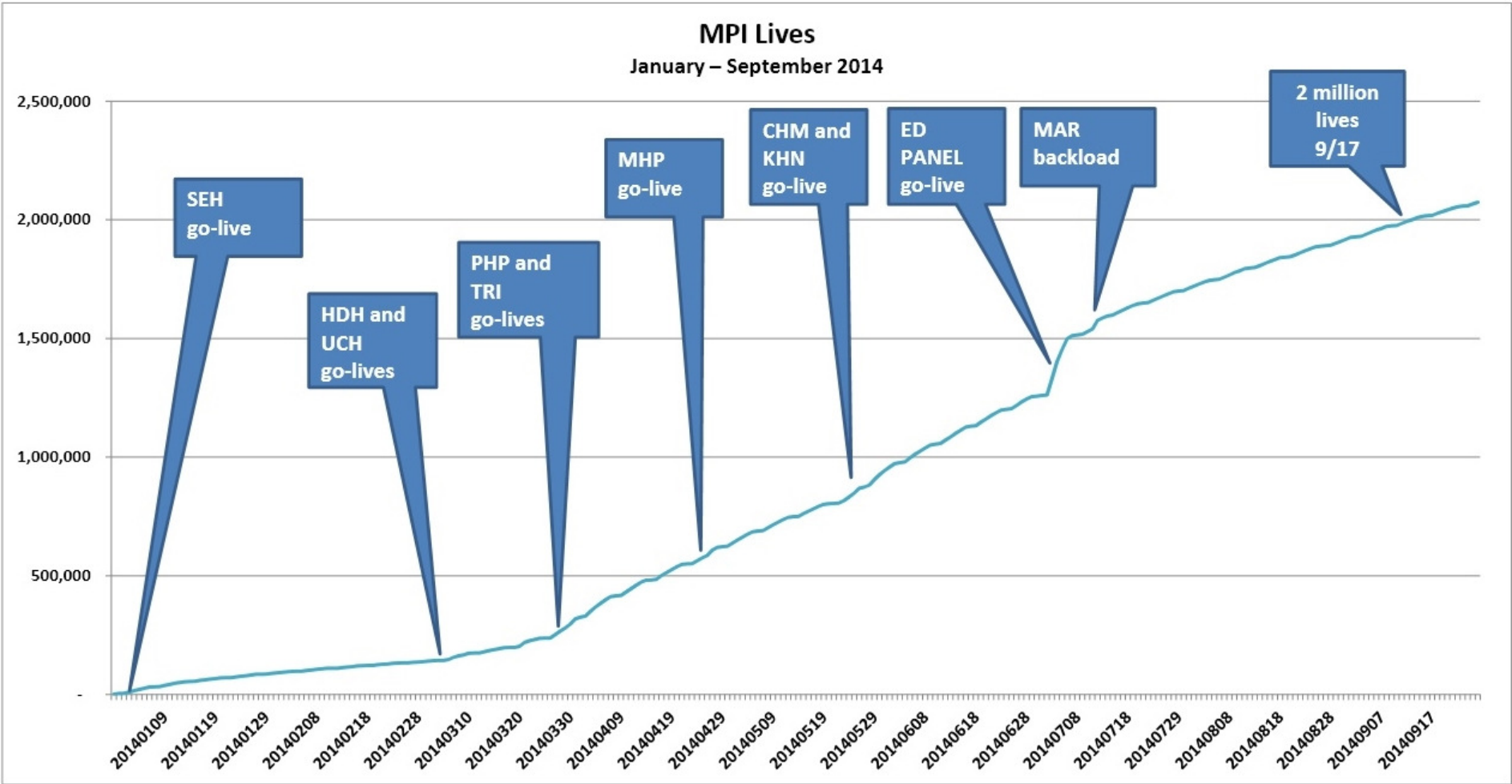
HealthBridge Inbound Messaging, Apr-Jun '14



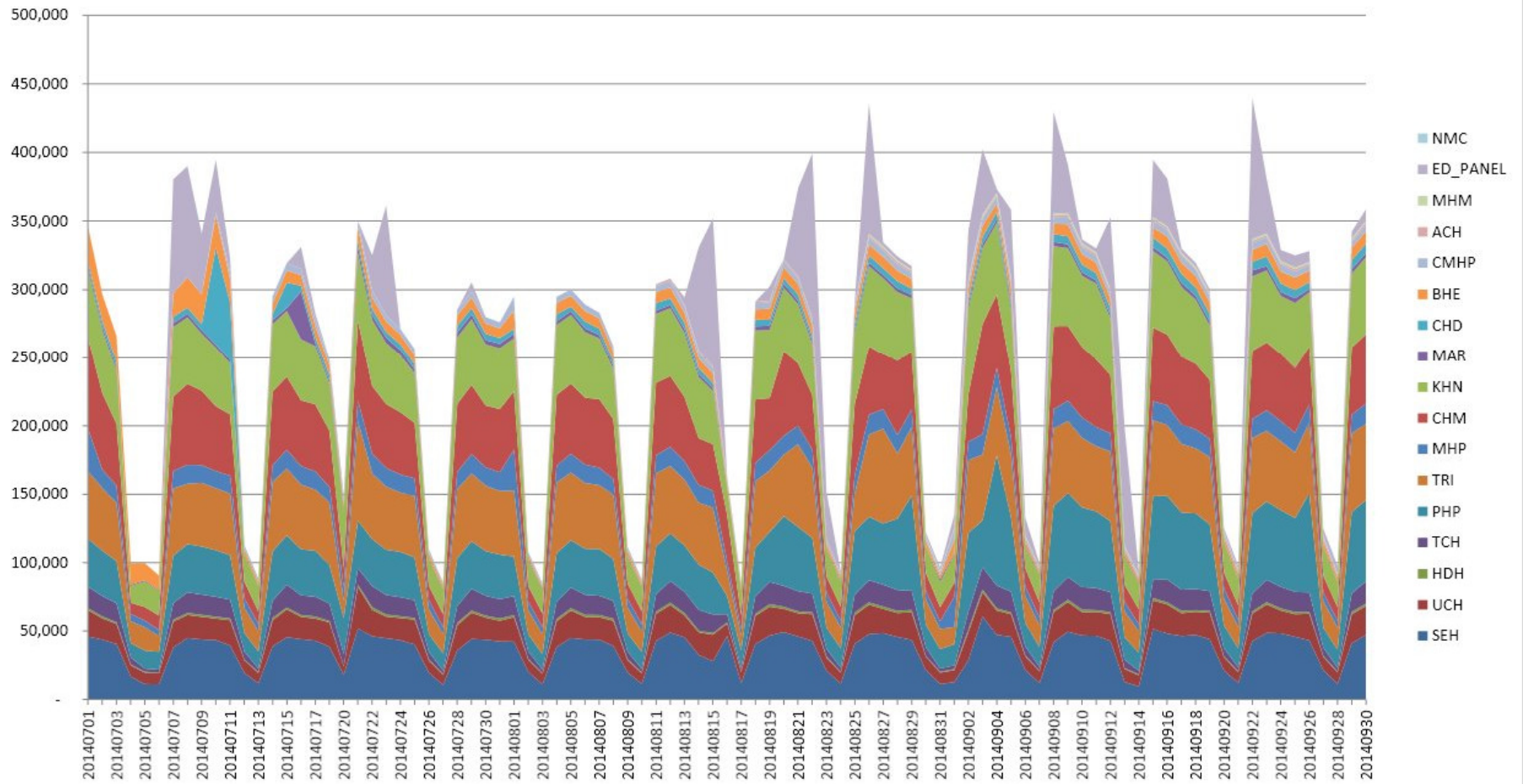
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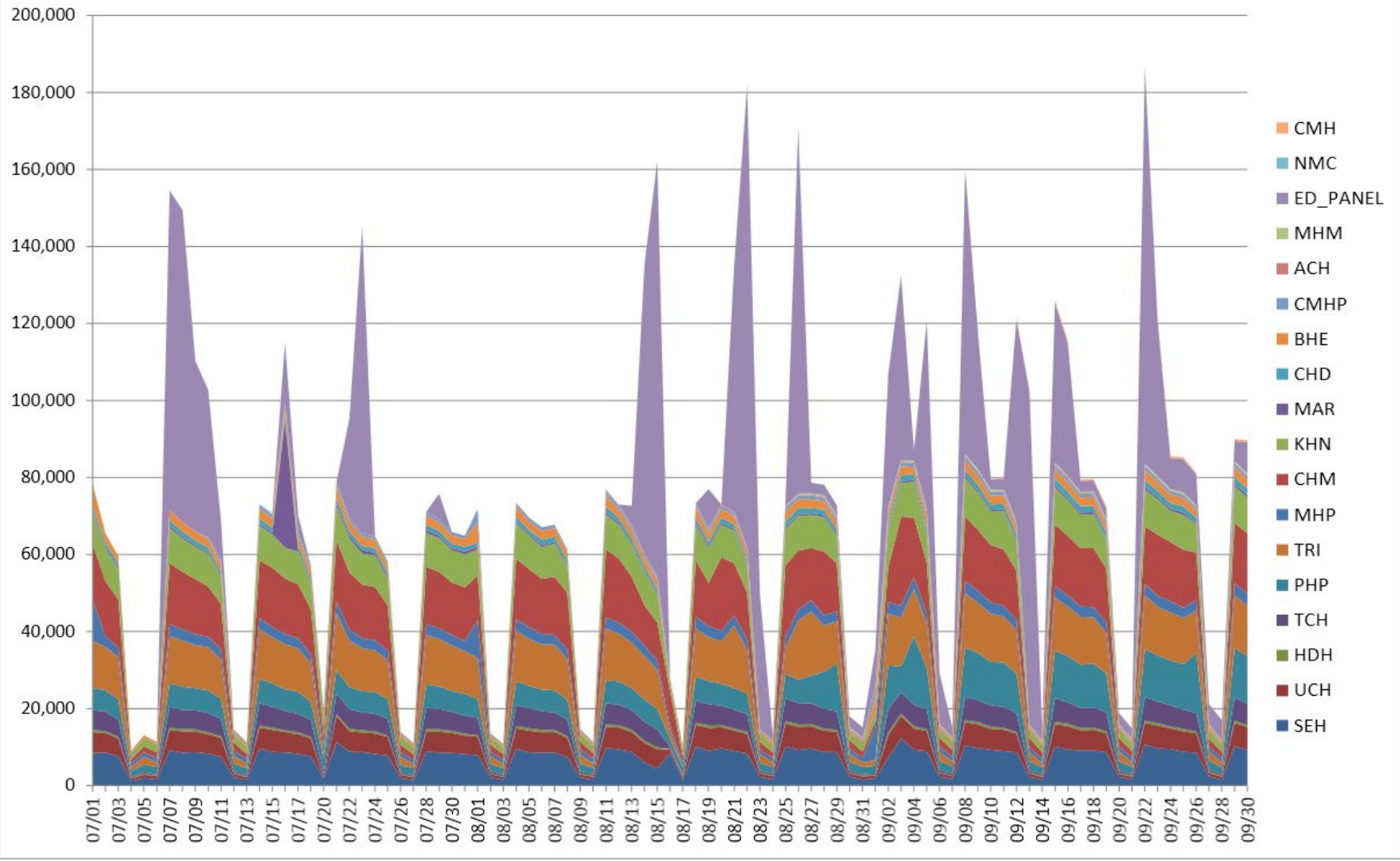
Master Patient Index Analysis



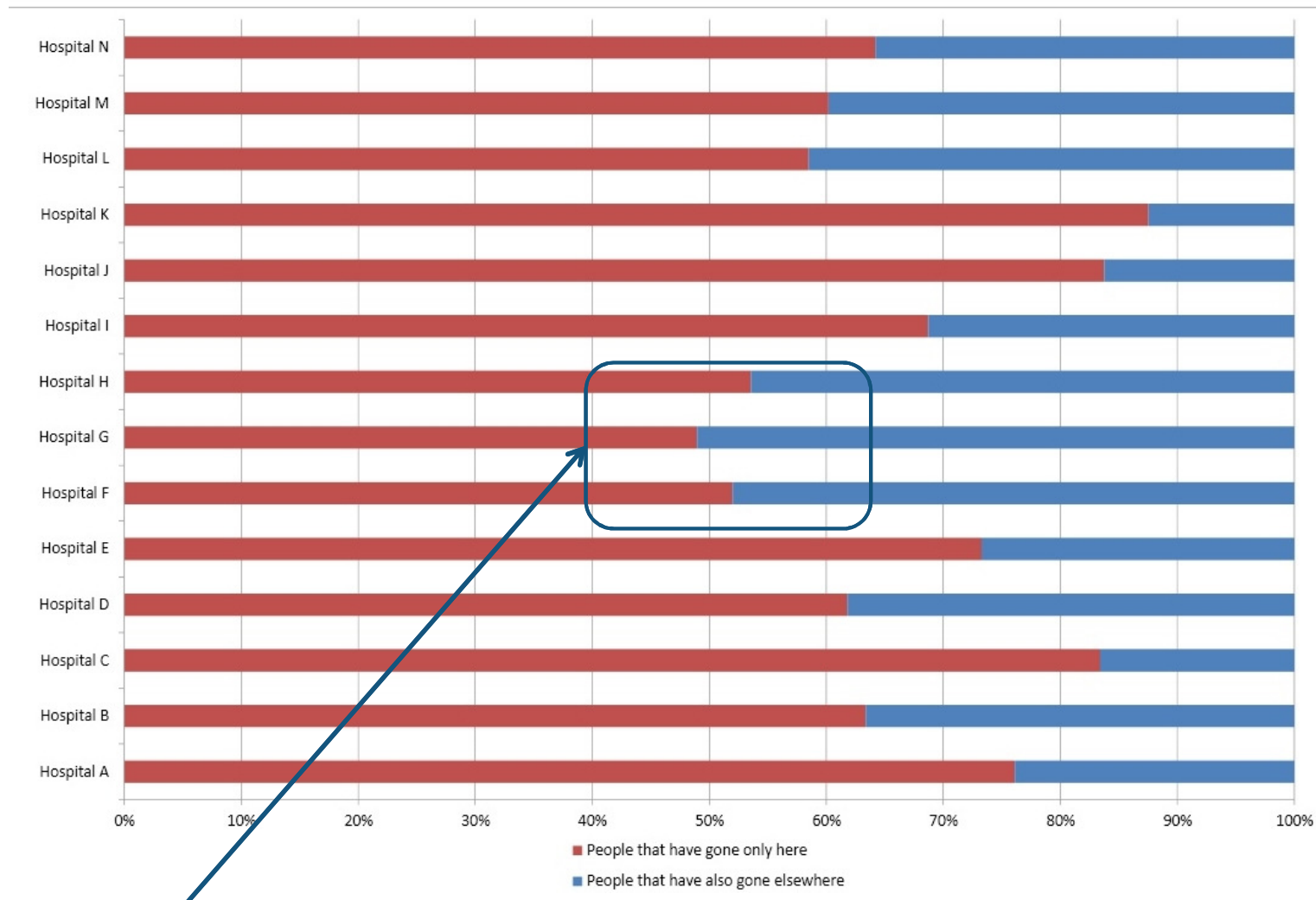
ADT Message Count per Day July - September 2014



Unique MRN Received per Day July - September 2014



750K of 2.3M Use Multiple Health Systems (32% of patients in the region)

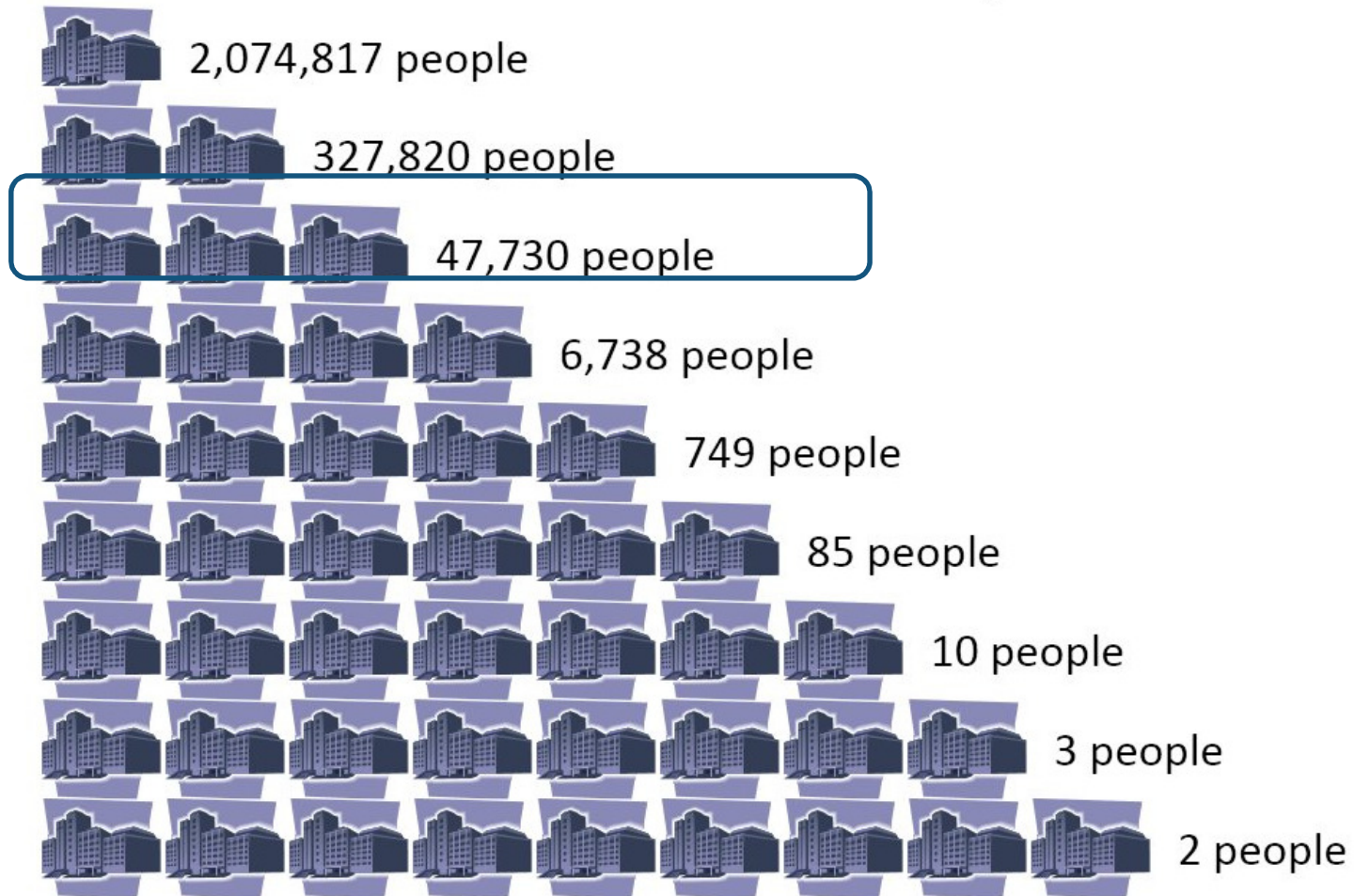


Nearly 50% of these hospitals' patients also go somewhere else.

Source: HB MPI Analysis, Jan – Sept 2014

Utilization Analysis of HealthBridge MPI:

Nearly 50,000 Patients Went to 3 or More DIFFERENT Health Systems for Care

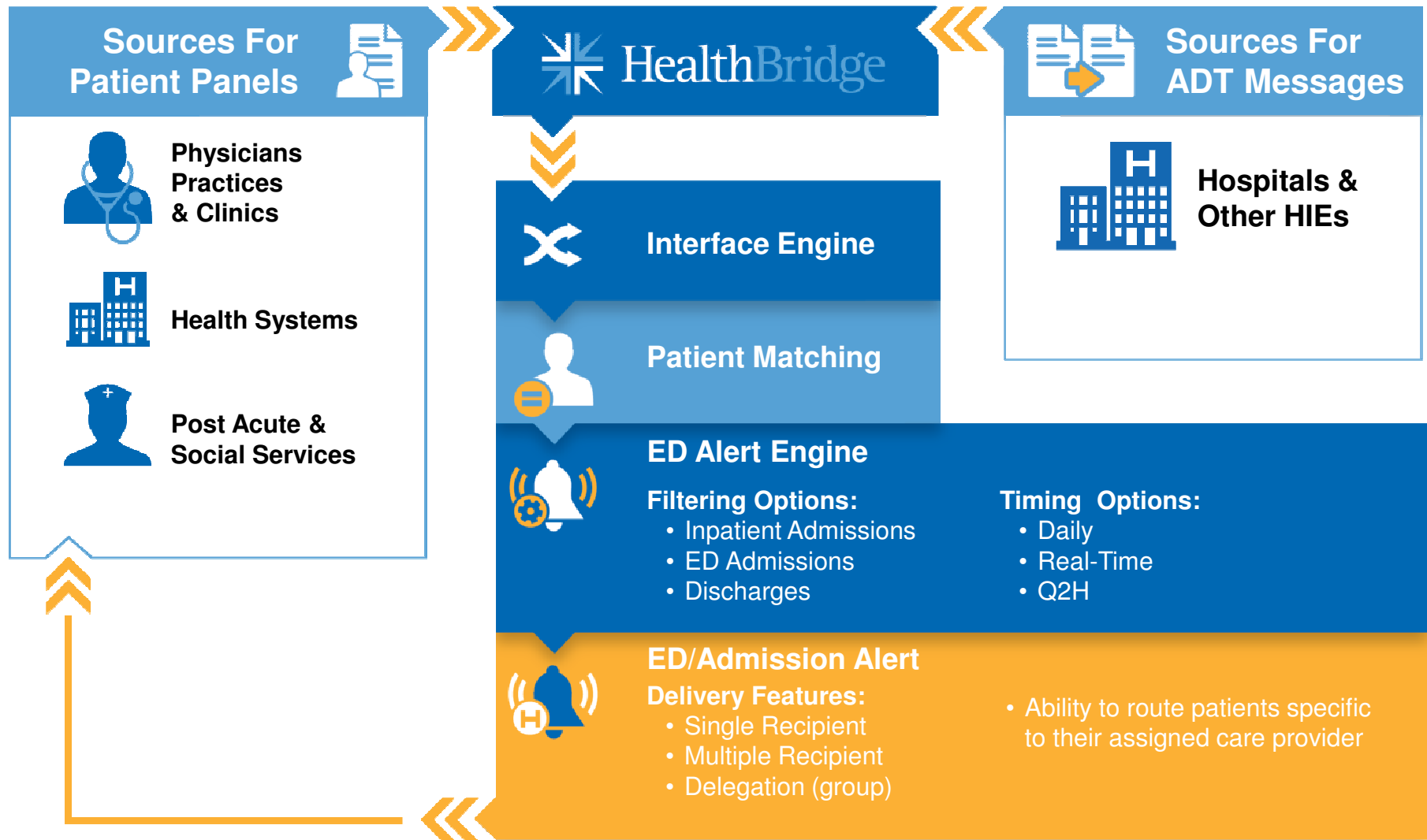


Addressing Unnecessary ED Visits:

A care coordination issue, particularly for chronically ill patients

- PCPs get little information about patient ED visits
- Unknown how many patients use ED for non-urgent illnesses
- Many follow up appointments after ED visit involve “data gathering”
- Processes for ED follow up inconsistent – risk for further ED use and hospitalizations
- Few off-the-shelf improvement tools and processes for ED visits

ED/IP Alerting – Overall Process



Alert System by the Numbers

- Alerts System participating organizations include:
 - 21 hospitals
 - 87 primary care practices
 - 200+ Adult PCPs
 - 300+ Pediatricians
 - 35,000 patients with Diabetes
 - 30,000 patients with Pediatric Asthma
 - Visiting Nurses Association and Council on Aging
 - HealthLinc HIE network in Bloomington, IN
- **7,000 - 10,000 alerts sent per month currently**



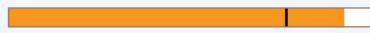




Innovation Success: Alerts Story

- 5 yr old girl had visited the ED 5X in the previous year for uncontrolled asthma
- Alert notified practice that this patient was in crisis
- Medical Home followed up immediately
- Parent alerted to same day, open access scheduling – no need for the ED visit
- Great continued follow up and monitoring have kept her healthy



Your Health Matters



Cardiovascular Health		Overall Score (Greater Cincinnati Regional Average = 30%)	
Mercy Health Physicians - Blue Ash Family Medicine 9403 Kenwood Road Suite C 208 Cincinnati, OH 45236 this is a PCMH	Suzanne Matunis, Mary Mosko (1) more ...	56%	 Show scores for each goal
TriHealth Physician Partners - Health First - Loveland 10675A Loveland-Madeira Road Loveland, OH 45140 this is a PCMH	Susan Fremont, Jodi Harvey (3) more ...	53%	 Hide scores for each goal
Blood Pressure		92%	
% of doctor's patients with blood pressure less than 140/90			
Bad Cholesterol		78%	
% of doctor's patients with LDL levels less than 100 mg/dl			
Tobacco-free		72%	
% of doctor's patients who are tobacco-free			
Daily Aspirin Use		92%	
% of doctor's patients who take a daily aspirin as recommended			
PriMed Physicians Springboro Family Practice 243 West Central Avenue	Dena Mason-Zied, James Slaughenhaupt II	35%	 Show scores for each goal

SHARE

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Print

Payment Realignment

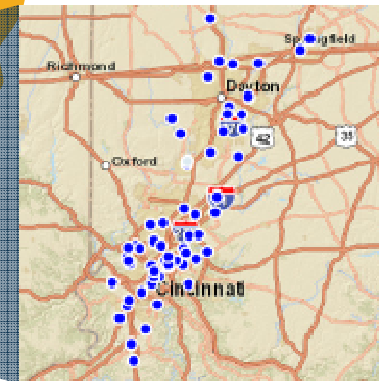
Greater Cincinnati
1 of only 7
chosen sites nationally

📍 75 practices and
261 providers

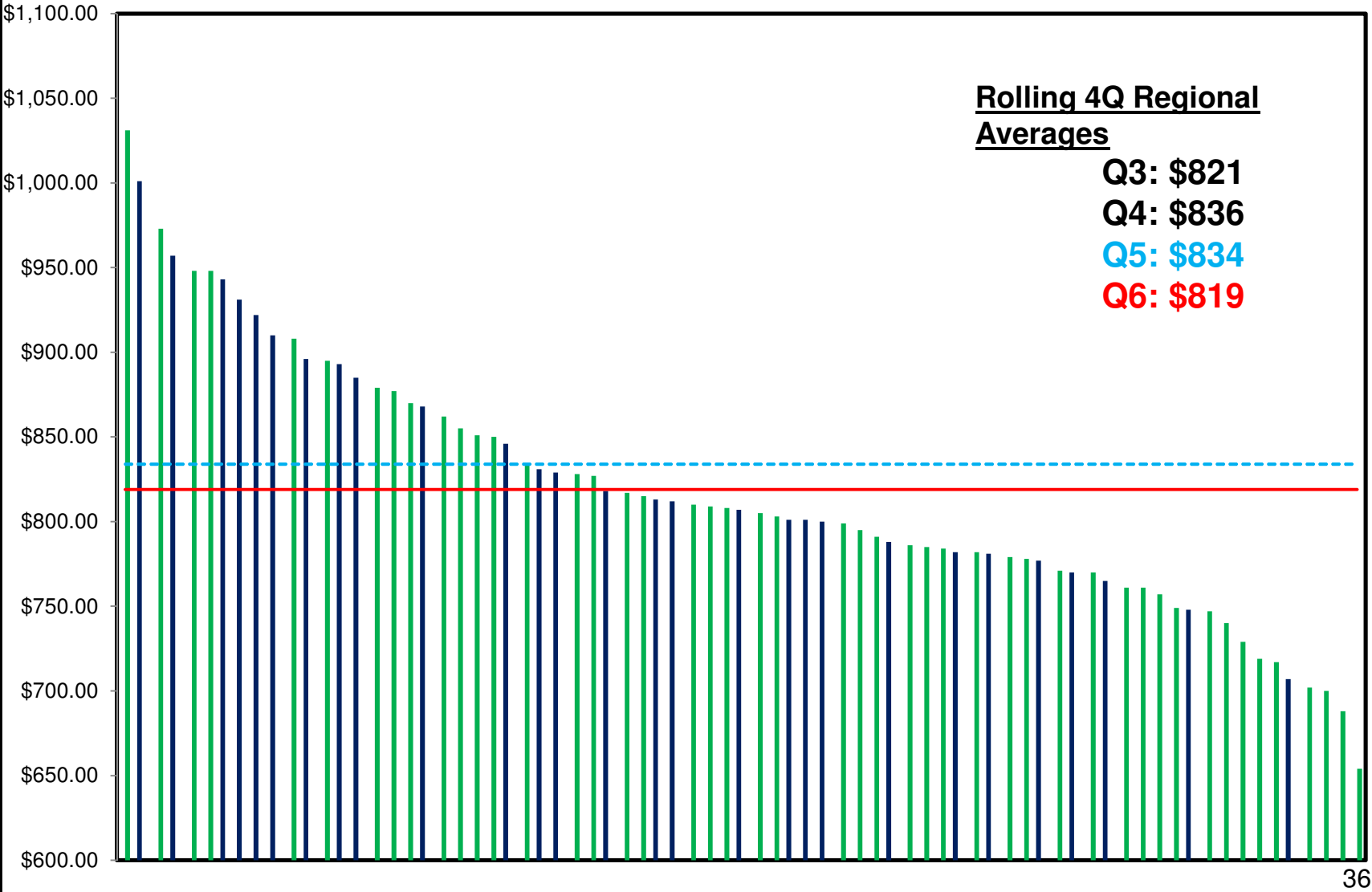
📍 Multi-payer:
9 health plans +
Medicare

📍 300,000 estimated
commercial,
Medicaid and
Medicare enrollees

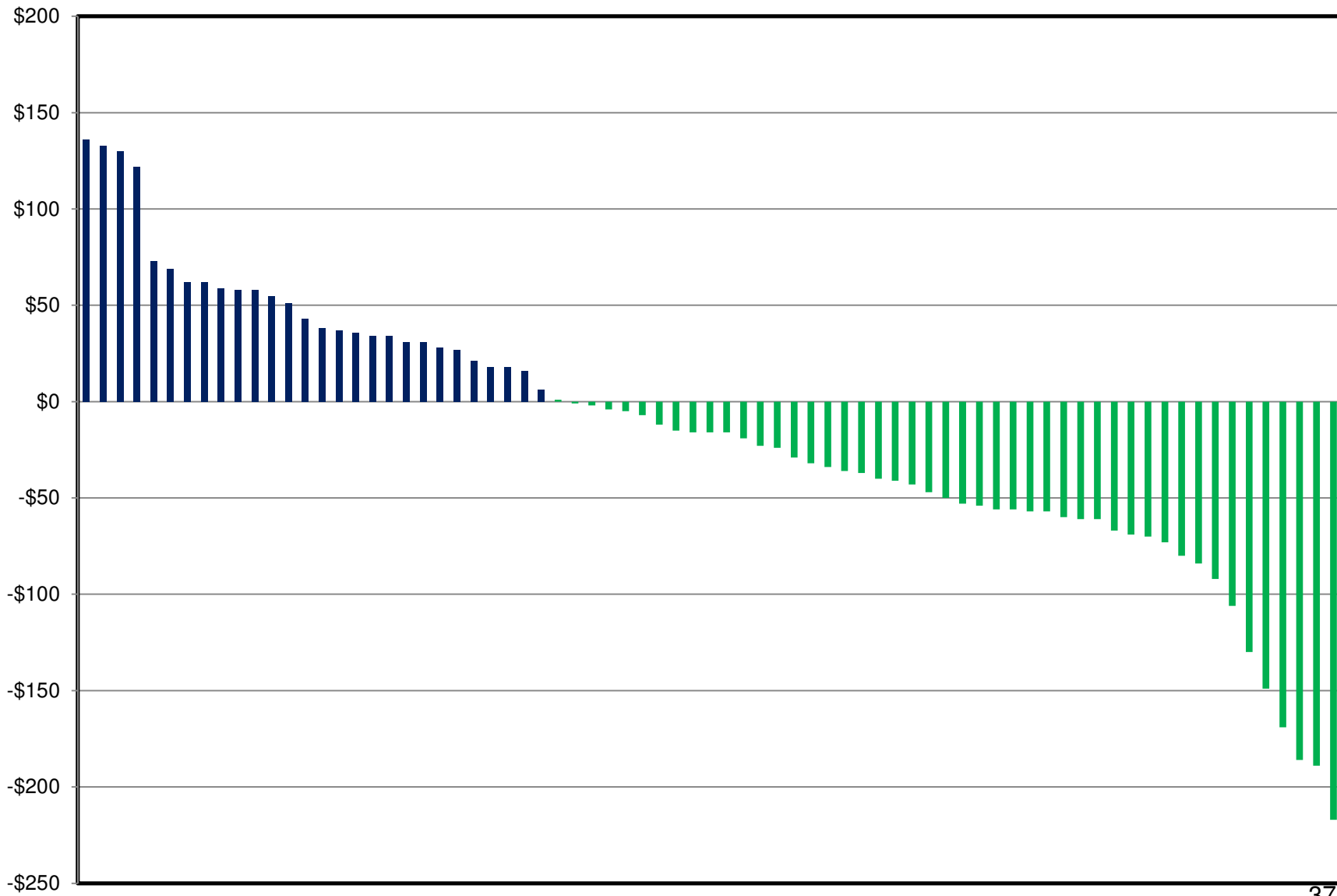
📍 65 miles from
Williamstown, KY to Piqua, OH



Q6 Risk Adjusted Expenditures PMPM April 2013-March 2014



Expenditure Increase/Decrease Q4-Q6



Shared Community Agenda

— ✨ THE HEALTH COLLABORATIVE ✨ —

COLLECTIVE
IMPACT  ON HEALTH

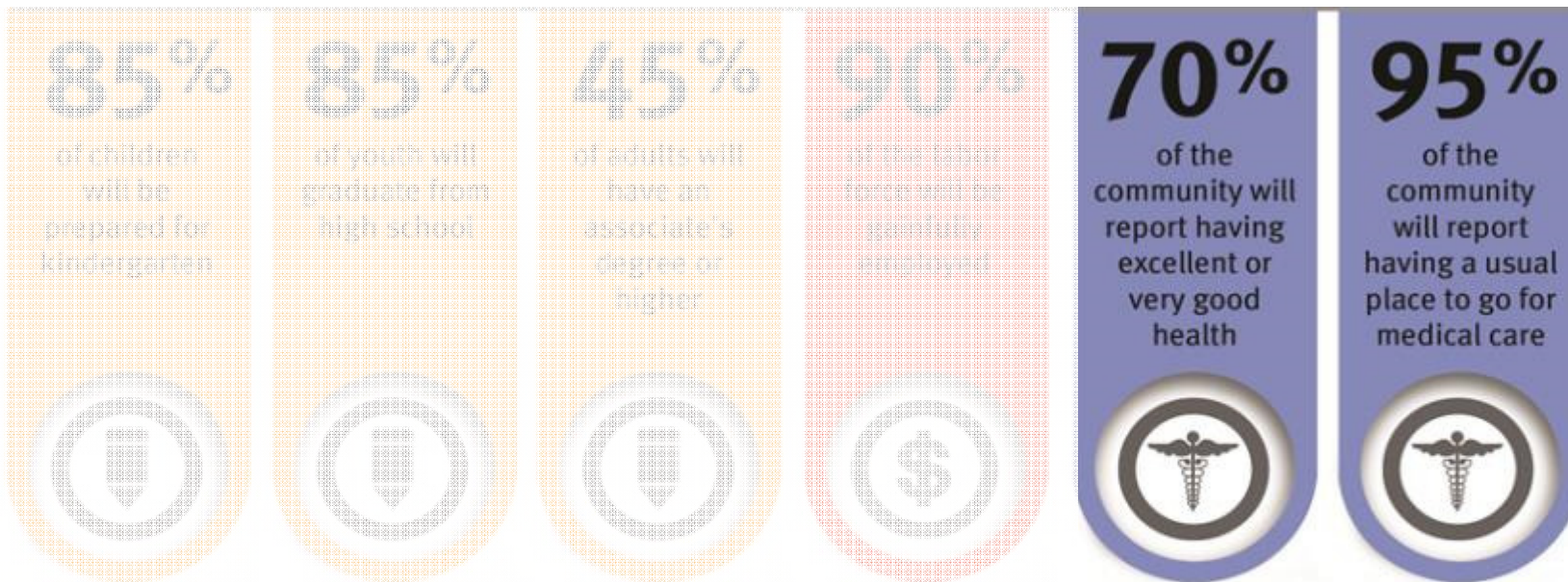
— ✨ DATA-DRIVEN HEALTH IMPROVEMENT IN GREATER CINCINNATI ✨ —

Community Support

Collective Impact on Health has tremendous support from the community.

<p>UNITED WAY</p> <p>The United Way has entrusted the Health Collaborative to lead it's Bold Goals for Health.</p>		<p>HOSPITAL SYSTEMS</p> <p>Hospitals and foundations contributing over \$650,000/year x 2-years.</p>	
	<p>INTERACT FOR HEALTH</p> <p>Interact for Health is a major supporter.</p> <p>INTERACT FOR HEALTH</p>		<p>Employers</p> <p>Health Plans and the business community.</p>

Bold Goals for our Region



The year the Bold Goals were created

2011

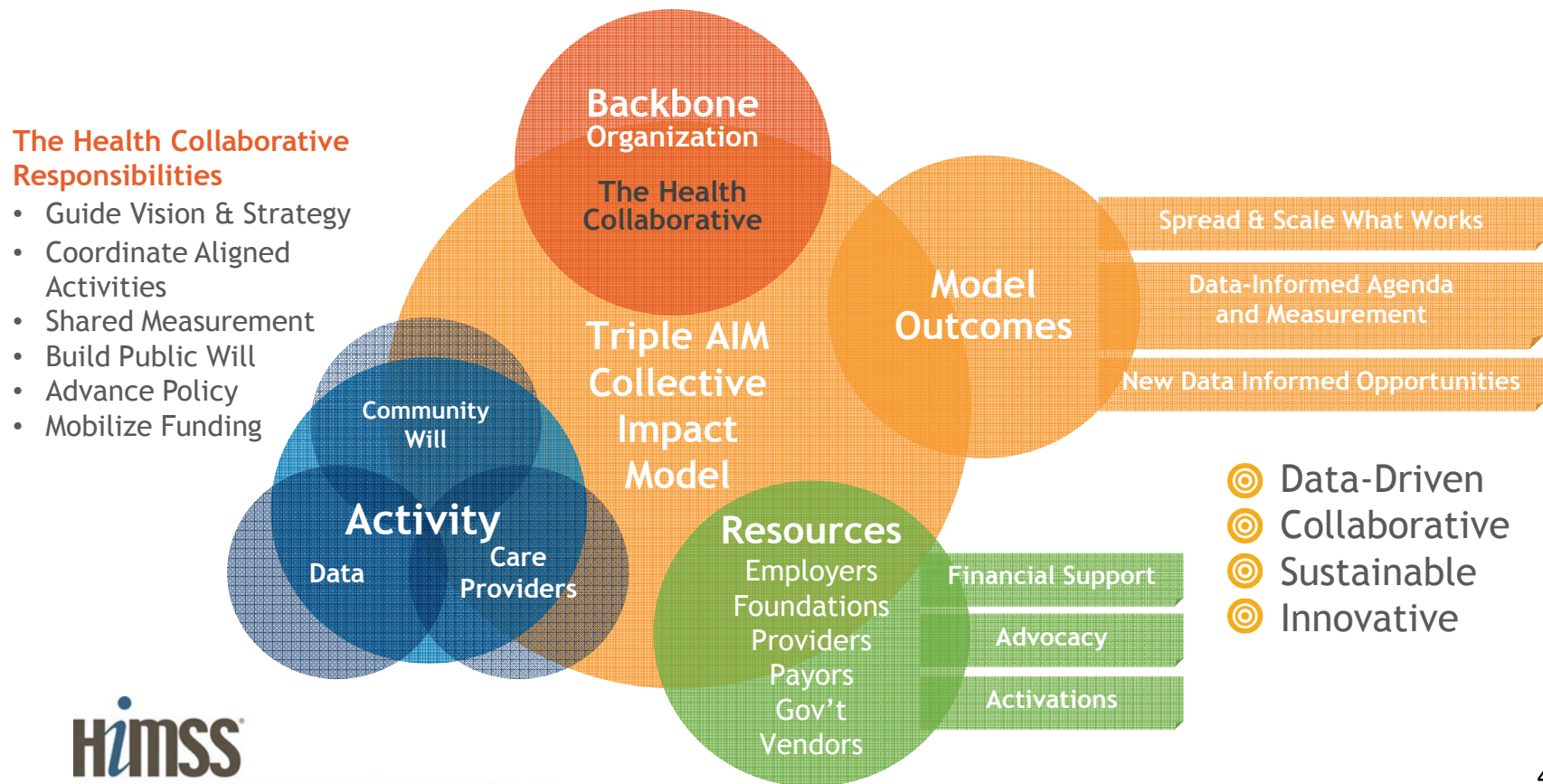


2020

Target year for the Bold Goals to be achieved

Impacting Change with Better Aim

Create an informed community-wide shared agenda for better health, better health care, and lower costs.





A point of view can be a dangerous luxury when substituted for insight and understanding.