



Intelligent Push Technology: Unlocking the Value of HIE in Today's Market

September 2016

- KeyHIE & Information Delivery Service
- Value of HIE Connection
- Unified Data Architecture & Big Data Solutions
- Population Health

KeyHIE & Information Delivery Service

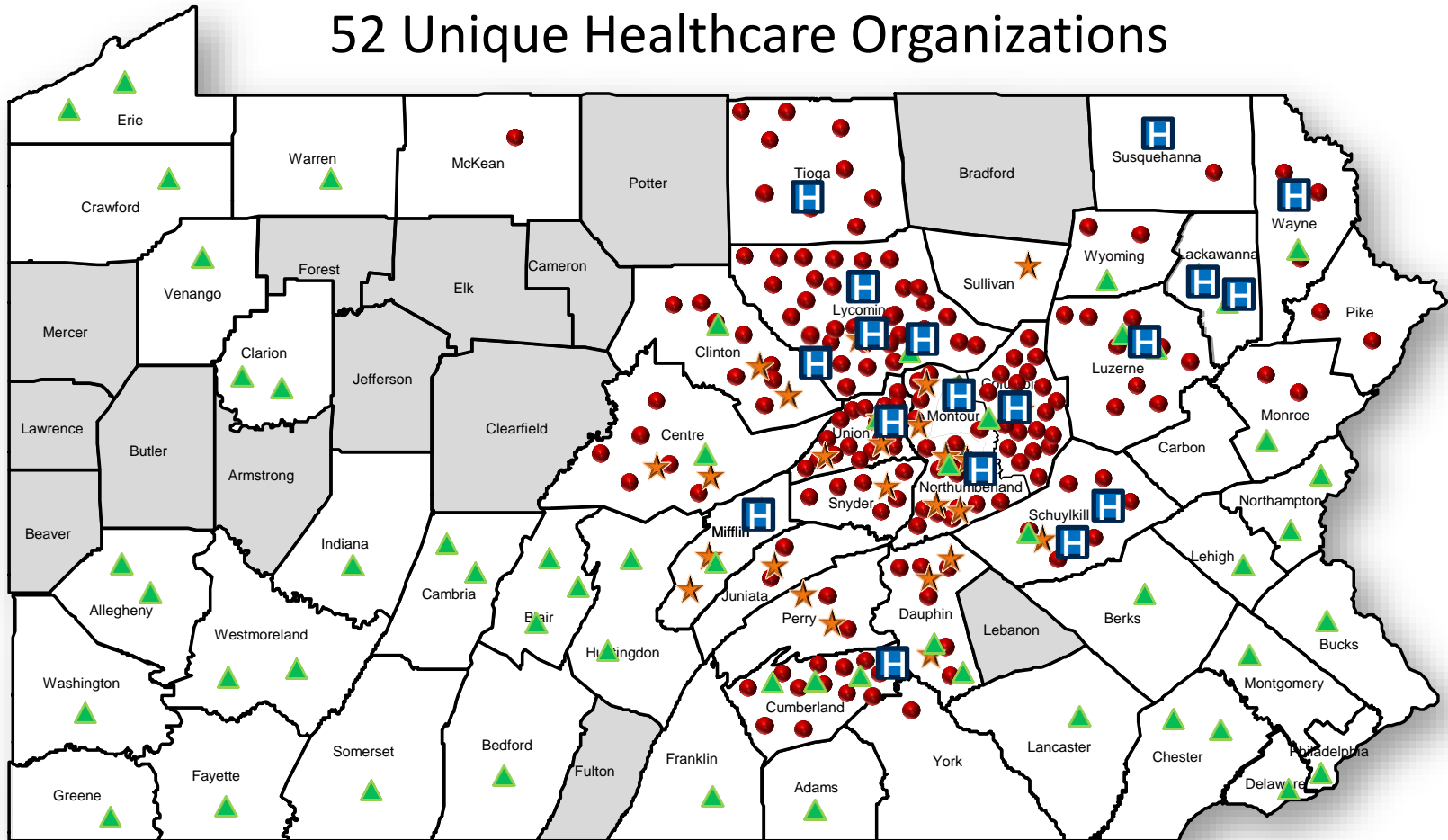
About KeyHIE

- Health Information Exchange
- Founded in 2005
 - One of the oldest HIEs in the US
- Serves approximately 4.4M patients, over 53 counties in PA

Mission: To nurture information sharing between providers with secure access to quality healthcare data, when and where it is needed

About KeyHIE

52 Unique Healthcare Organizations



H 18 Hospitals

● 251 Physician Practices

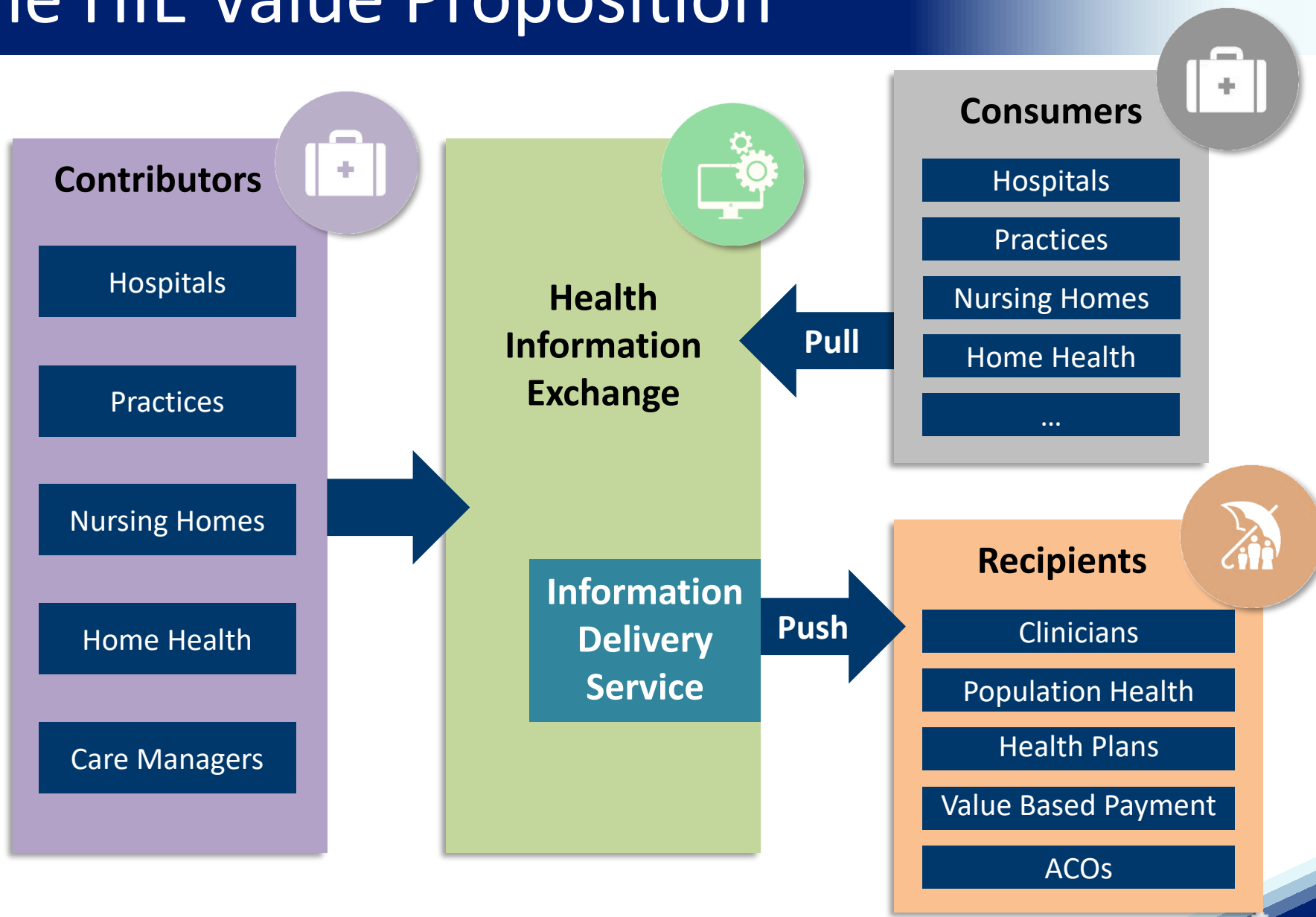
★ 30 Home Health Locations

▲ 95 Long Term Care Facilities

◆ 1 Pharmacy

◆ 2 EMS

The HIE Value Proposition



KeyHIE Information Delivery Service

- Intelligent “push” technology for real-time delivery of community-wide alerts, notifications and information to enable proactive intervention
- End users (healthcare providers/facilities) have the ability to subscribe to important alerts, notifications and documents on their patients
- Implements alerts, notifications and document routing via a rules-driven publish and subscribe pattern
- Subscriptions can be managed, as needed

KeyHIE IDS Subscription Types

Types of subscriptions available:

- Inpatient admission notification
- Inpatient discharge notification
- Emergency admission notification
- Emergency discharge notification
- Lab results delivery, incl. site-specific results
- Radiology reports
- Discharge summaries
- Consult notes
- ED summaries
- CCDA

IDS is designed in a configurable way to allow for new subscription types/rules to be implemented quickly and easily

KeyHIE IDS Subscription Types

Provider to Patient

Based on relationships between patient and provider

- Primary care physician
- Attending physician
- Consulting physician
- Referring physician
- Admitting physician
- Ordering physician
- Result's copied to
- Other Healthcare provider

System to System

Based on relationships between facilities

- ACO
 - Ambulatory care
 - Hospital
 - Home health care
- Other site to site relationships

Patient Portal

- MyKeyCare – Notification to patients when medical information becomes available
- Other patient portals (future)

Provider to patient relationships can be established by the following:

- Incoming HL7v2 messages
- Batch CSV file
- Published CCDA (clinical summary)
- KeyHIE IDS portal – subscription management screen (Available late 2016)

KeyHIE IDS Delivery Options

Document delivery to provider

Can be delivered in the form of:

1. HL7 v2 over MLLP (to EHR)
2. CCDA as XDS.b transaction over SOAP (to EHR)
3. CDA (CCDA/ XD-Labs) as document to DIRECT mailbox
 - a. SMTP/SMIME, XDR (consumed by EHR, if capable)

Alerts to provider

Can be sent out in the form of:

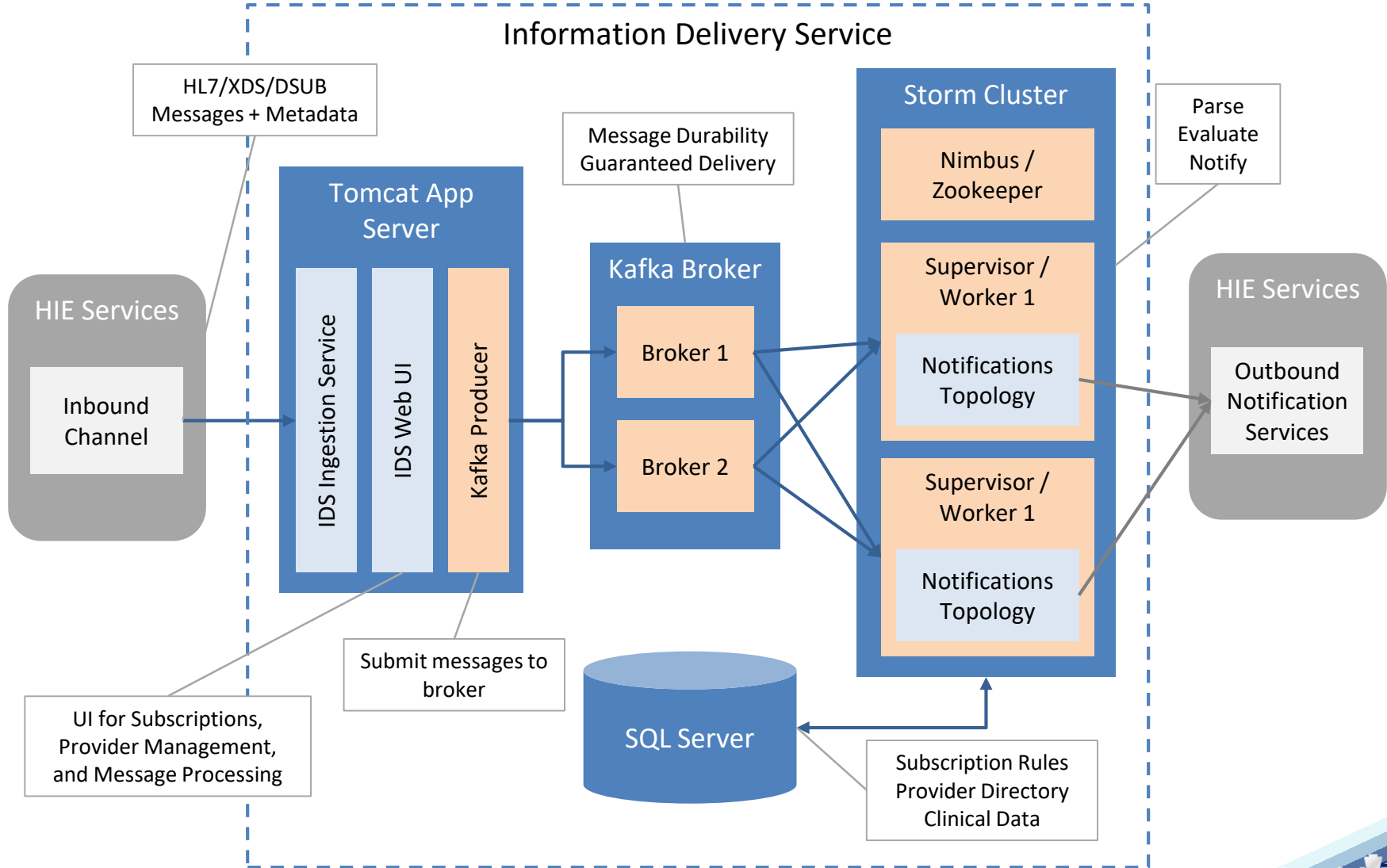
1. Alert as a regular email (No PHI)
2. Alert as a text message (SMS – No PHI)

Notifications to provider or patient

Can be sent out in the form of:

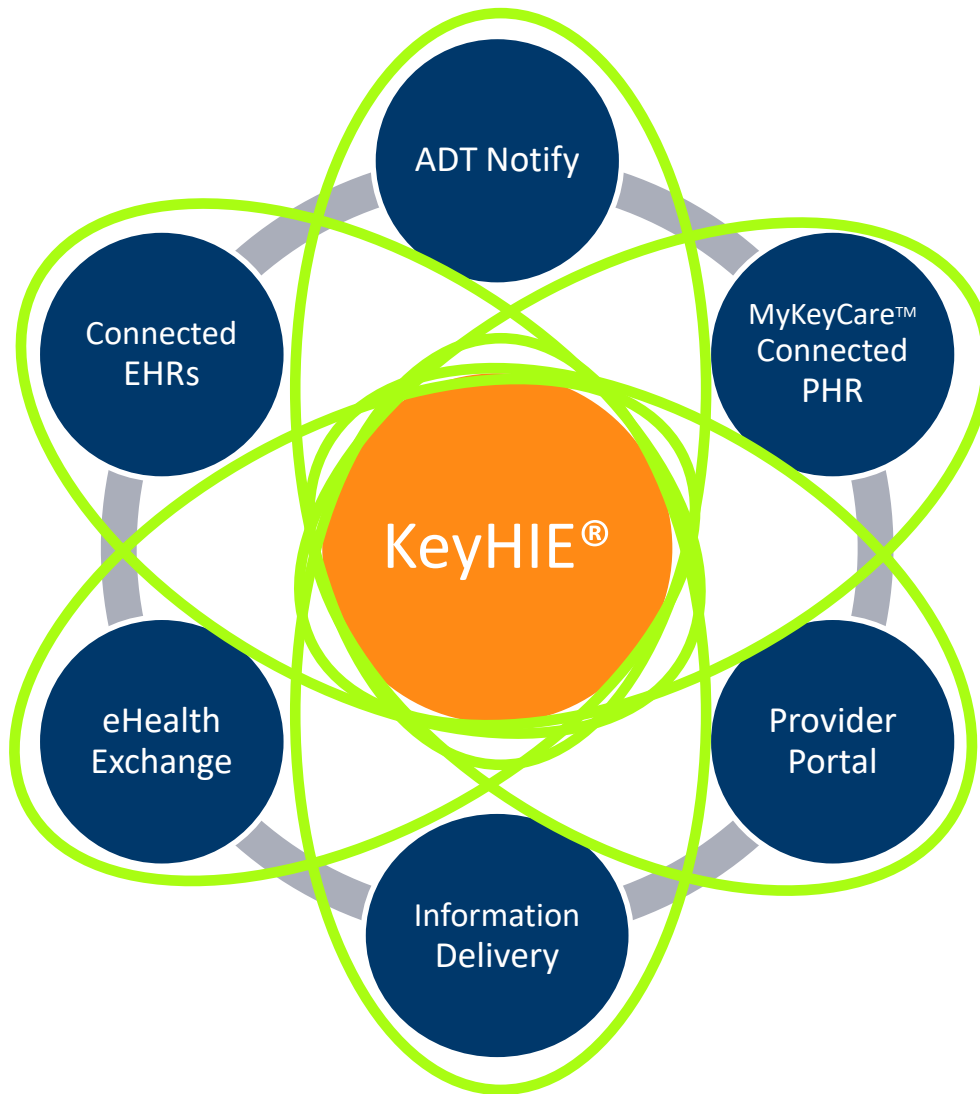
1. Notification as a regular email (No PHI)
2. Notification as a DIRECT email (PHI)
 - a. Delivered to KeyHIE-connected member
 - b. Delivered to outside health information service provider (HISP)

KeyHIE IDS Technology Architecture



Value of HIE Connection

KeyHIE Products & Services



- Connecting the care community
- Connecting patients
- Delivering reports and results
- Alerts and messages
- Feeding clinical analytics/big data platforms
- Nationwide Exchange

Unlocking the Value of HIE...

HIE

Data Connectivity
and Exchange

Patient Matching &
Indexing

Provider Messaging
& Communication

Patient Messaging
& Self-Service

Analytics

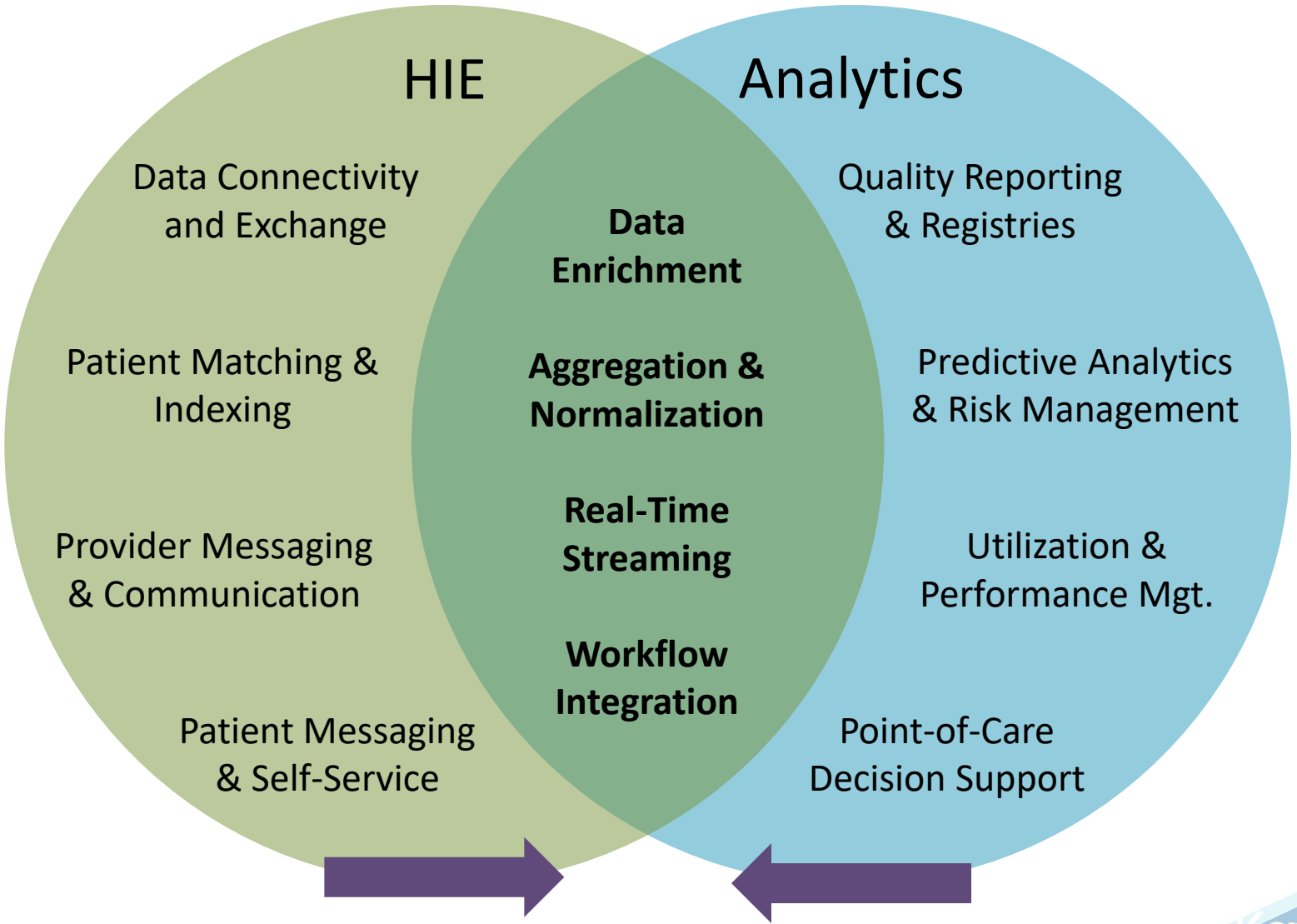
Quality Reporting
& Registries

Predictive Analytics
& Risk Management

Utilization &
Performance Mgt.

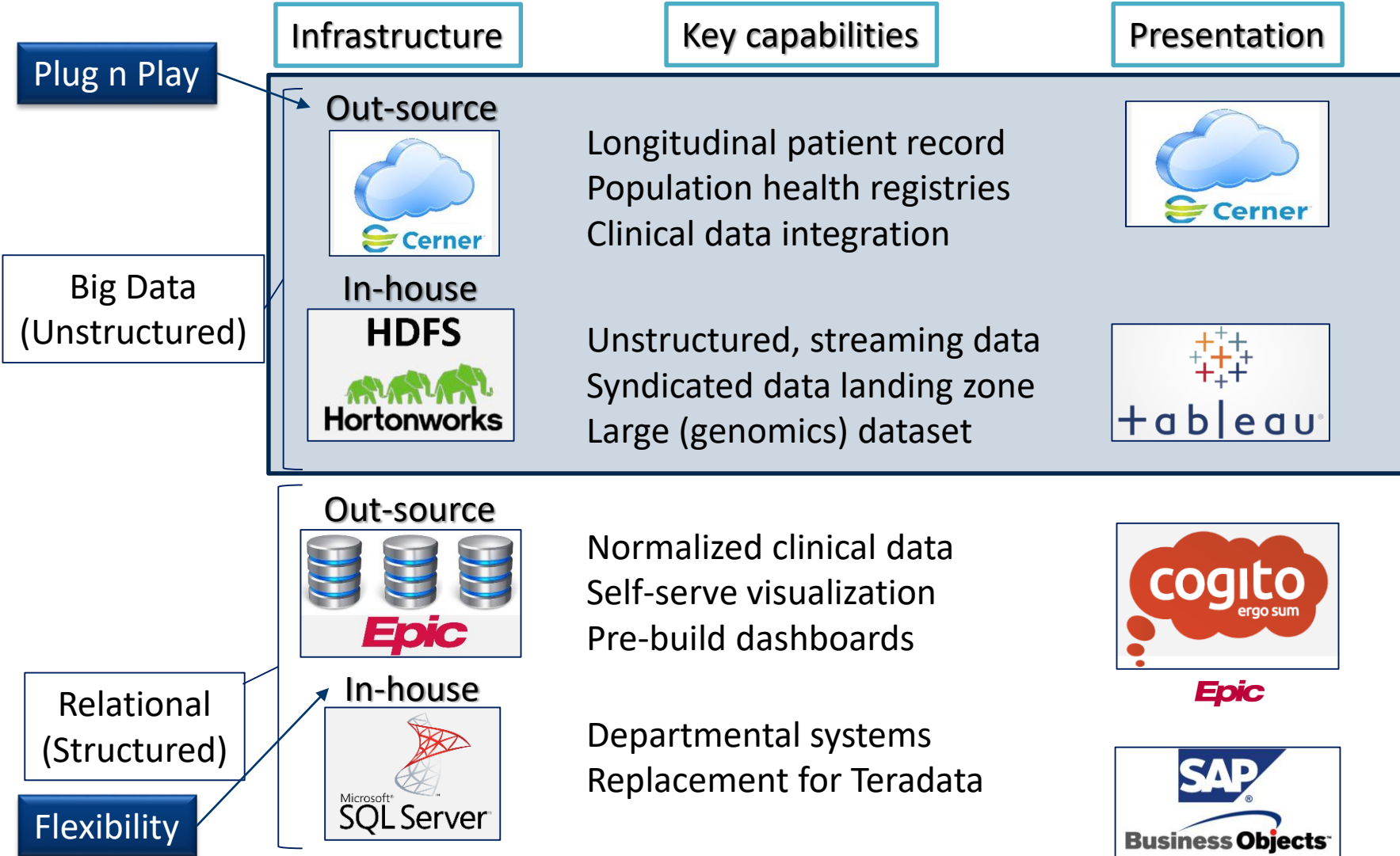
Point-of-Care
Decision Support

Unlocking the Value of HIE...



Unified Data Architecture & Big Data Solutions

UDA Big Picture



Why UDA Big Data?

CDIS

Data Silos

Pockets of data
Undocumented data sources

Data Sprawl

“Lift and Shift” model
Confusing views of data
Sparse data integration

Cost

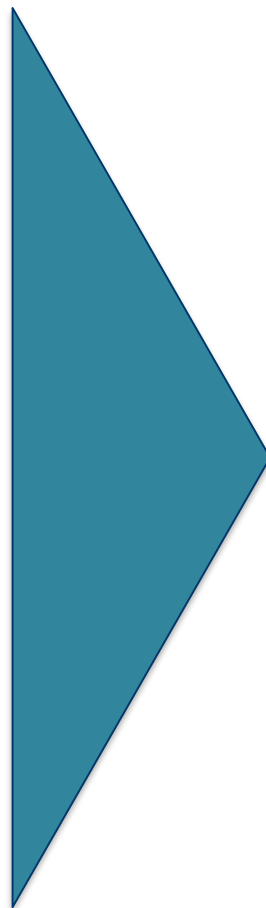
Months to ETL data
10-Terabyte cost ~500K

Scale

No unstructured data

Capability

Limited real-time capability



UDA

Unified Data Platform

Zones of data
Published data models

Data Integration

Enterprise patient view
Integrated healthcare model

Cost

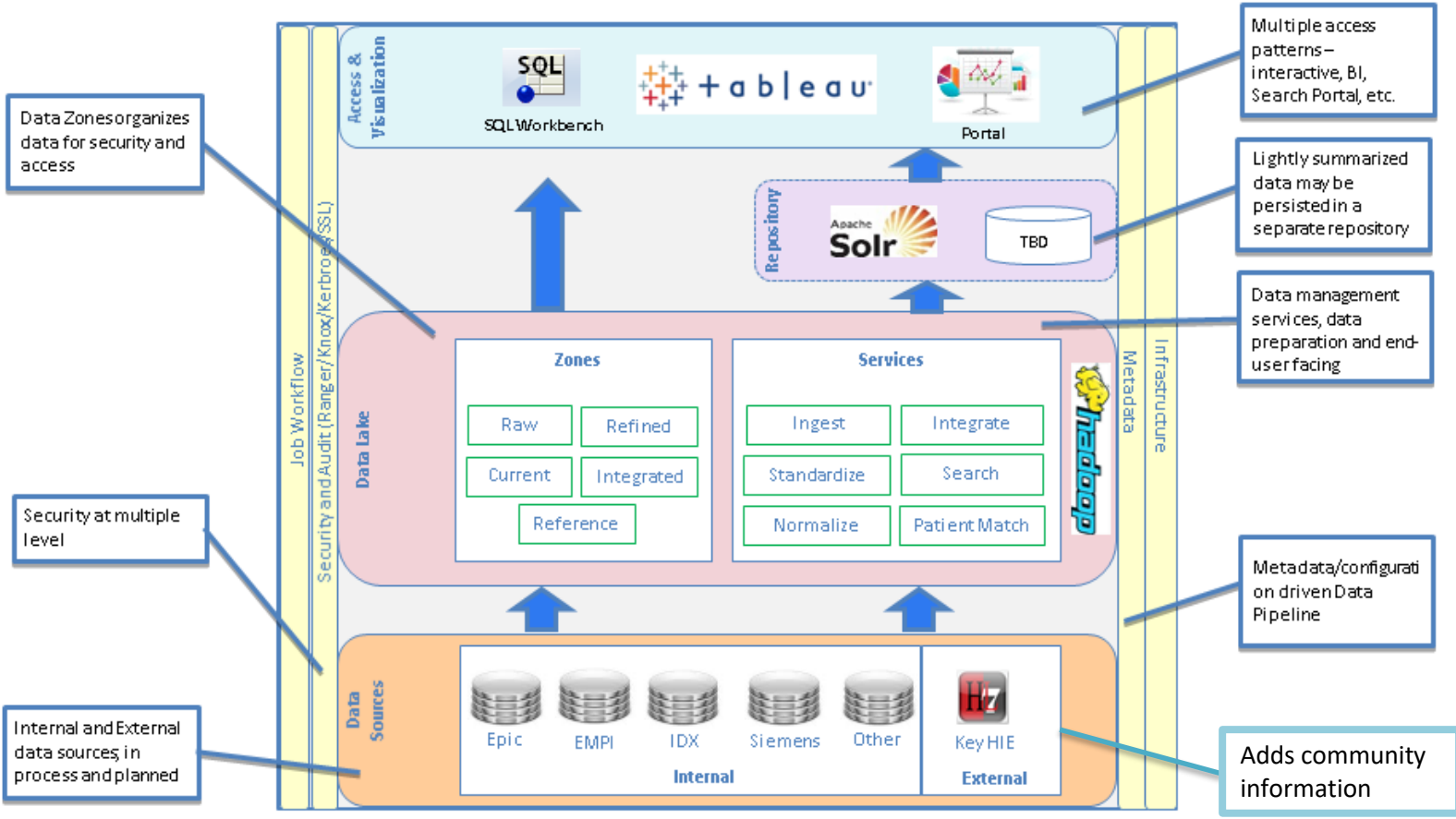
Days to ingest data
10-Terabyte cost ~15K

Scale

Unstructured data capability
Real-time capability
Data volume support

Big Data Architecture

Solution Architecture – Components

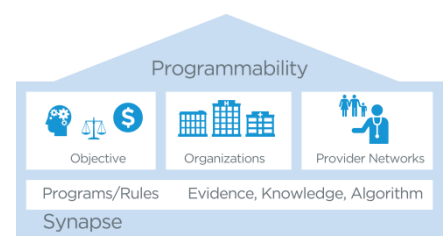
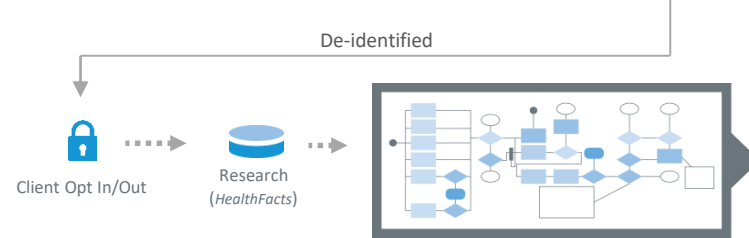
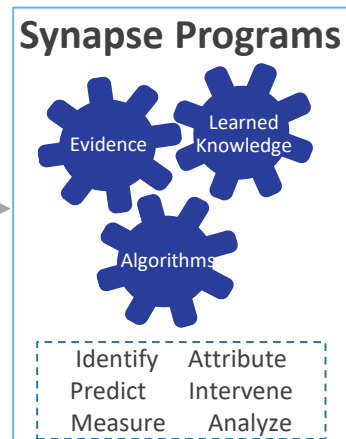
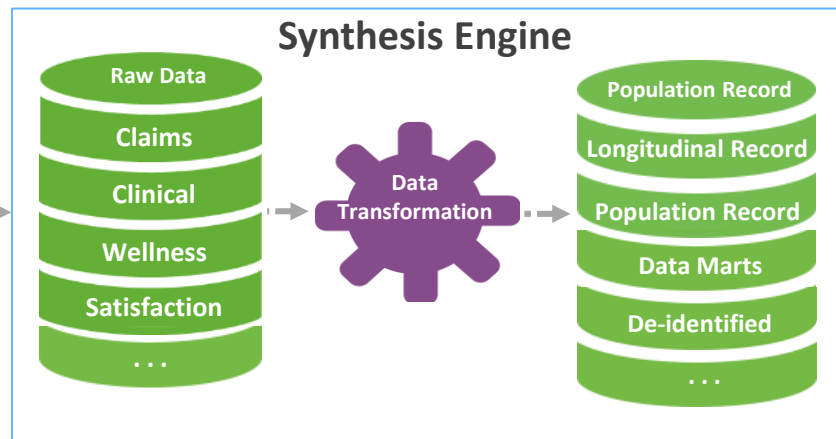


Population Health

HealthIntent - Programming Population Health

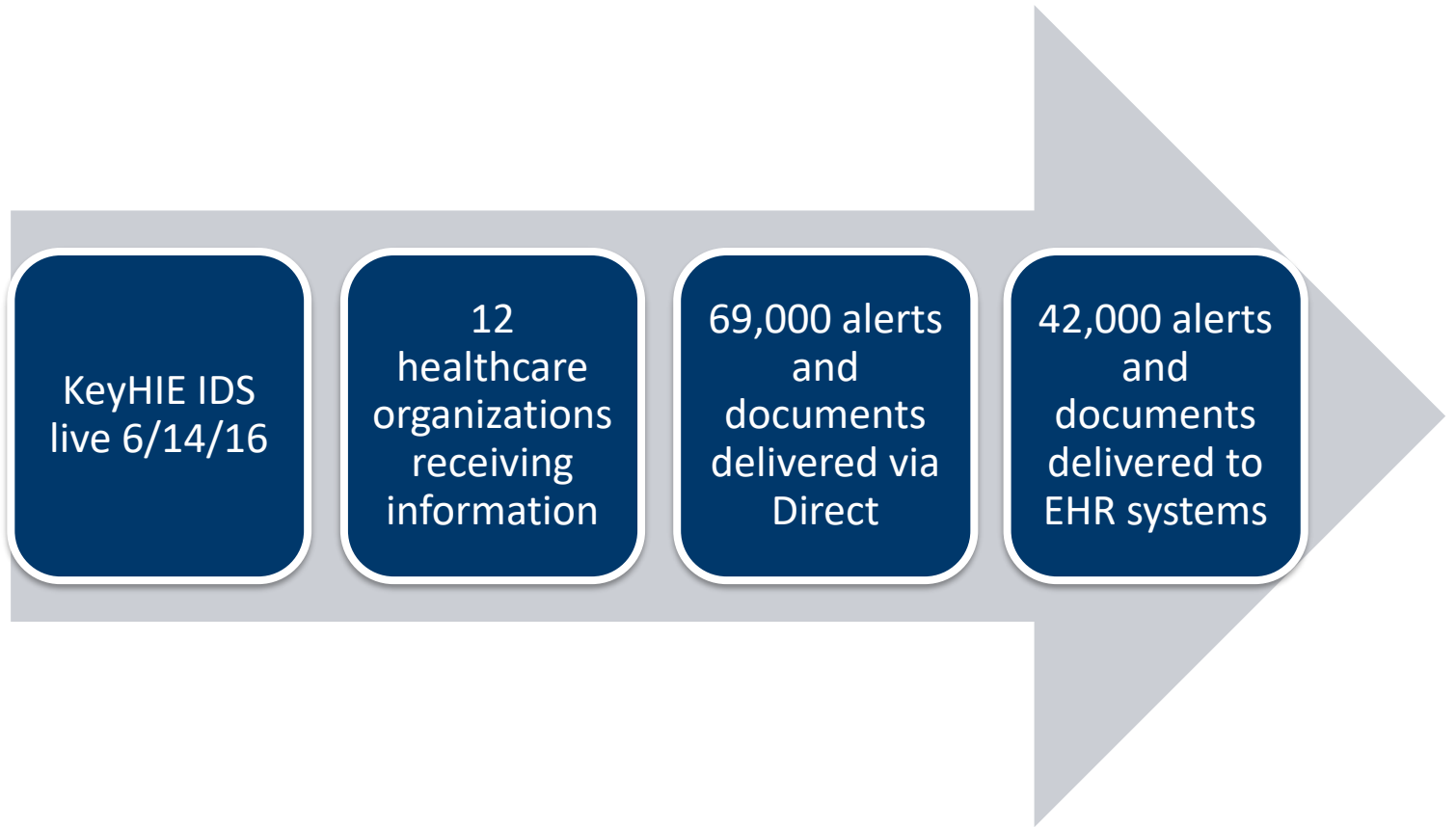


- Person
- Clinic
- Hospital
- Device
- HIE
- Payer
- Pharmacy
- Post-Acute
- Public Data



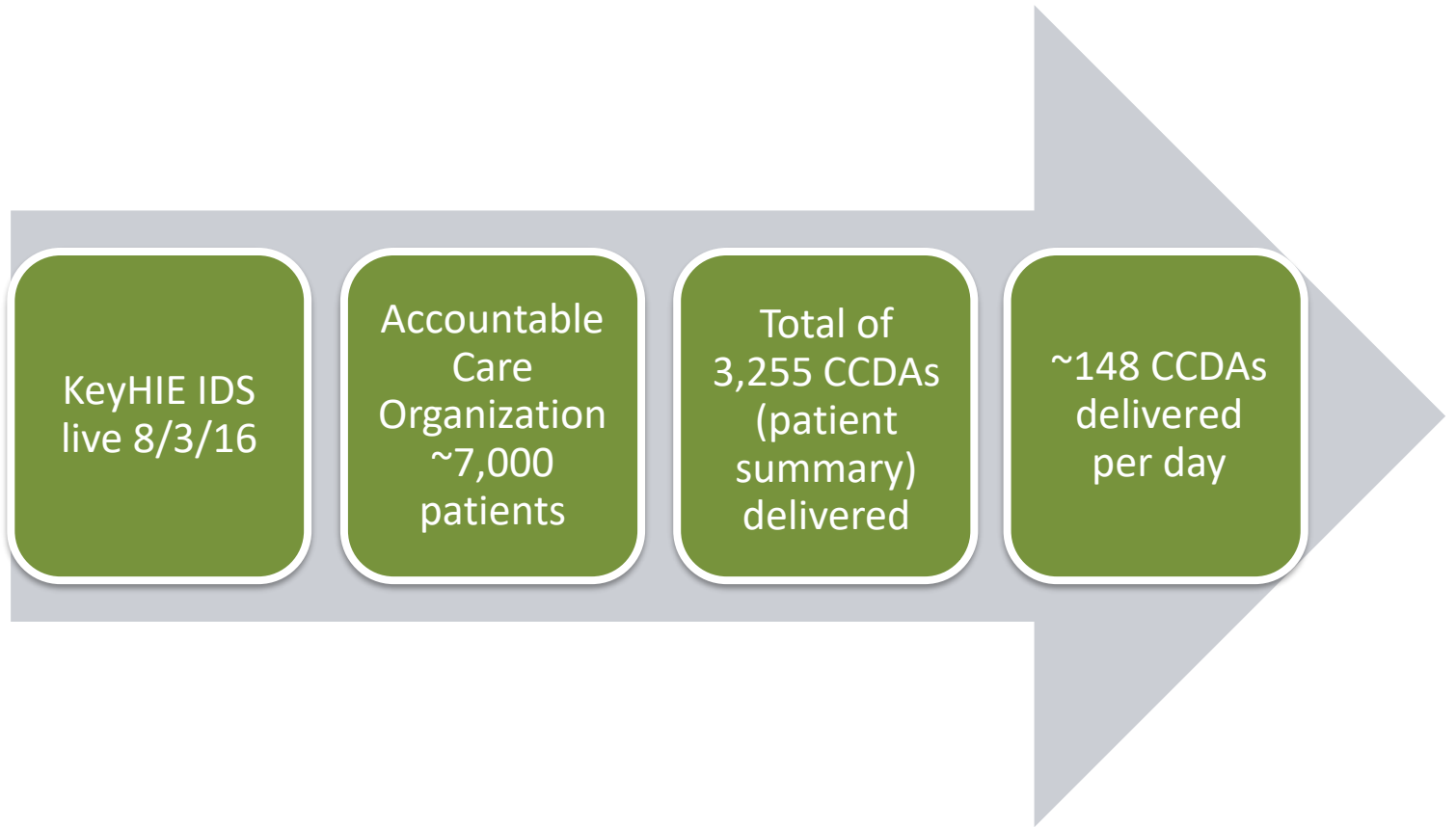
KeyHIE IDS: The Big Picture

HIE



KeyHIE IDS: The Big Picture

ACO



Questions/Discussion

