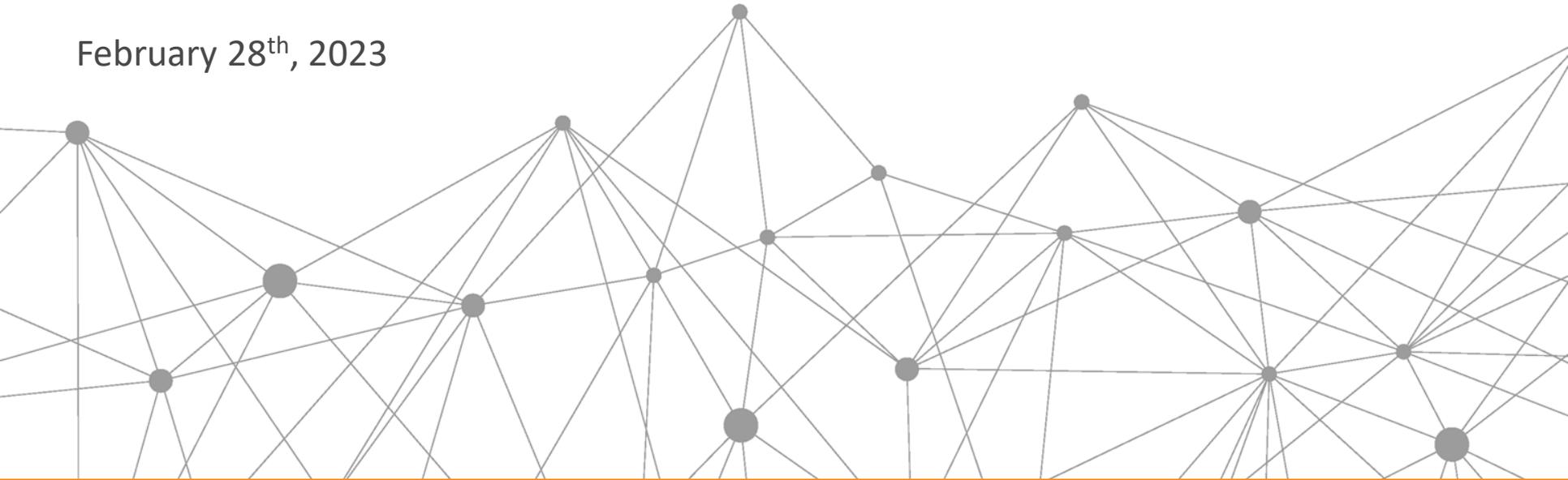


Pennsylvania's Federated HIE Model Provides Faster Data Insights and Decision-making

CDC – ONC Industry Days

February 28th, 2023



Legislative Mandate

- On July 8, 2016, **Act 76 of 2016** created the Pennsylvania eHealth Partnership Program (eHealth Partnership) within the Pennsylvania Department of Human Services (DHS). Concurrent with the passage of Act 76, **Act 121 of 2012** was repealed, and the independent Pennsylvania eHealth Partnership Authority (Authority) and its governing board were disbanded.
- Acts 121 and 76 require PA eHealth to “Develop, establish and maintain a health information exchange that complies with Federal and State law and that: Promotes efficient and effective communication among multiple health care providers, payers and participants.”
- Advisory Board, with a diverse membership representing interested and affected groups and individuals, meets on a quarterly basis.
- The HIE Trust Community Committee (HIETCC), made up of certified participating health information organization leaders, has met continuously on a monthly basis since 2013.

Strategic Plan

Pennsylvania eHealth Partnership Program

July 1, 2021 – June 30, 2024

VISION

Electronic health information exchange (HIE) enables initiatives striving to improve patient care and experience, population health, and health care cost.

MISSION

To enhance, expand and maintain the statewide interoperable system for participating organizations to electronically move health information in a manner that ensures the secure and authorized exchange of health information to provide and improve care to patients and reduce costs.

Strategic Goals

1. Enable ubiquitous, robust HIE, while maintaining privacy and security
2. Increase timely access, accuracy, and availability of clinical information to support diagnosis and treatment of individuals and to improve population health outcomes
3. Improve upon our existing Pennsylvania Patient and Provider Network (P3N) services by leveraging state services and resources
4. Alert patient care teams to relevant patient health care encounters
5. Support care coordination to improve quality and reduce health care costs
6. Improve patient outcomes and satisfaction
7. Optimize health information exchange stakeholders' experience

How HIE is Structured in PA

Electronic Health Information Exchange is the secure exchange of protected health information in a digital format.

Locally: HIE occurs within physician practices, health systems, and other provider organizations through their own electronic health records (EHR) systems.

Regionally: Providers connect to a network known as a health information organization (HIO). Patient records held by an HIO-connected provider are available to other providers connected to that same HIO.

Statewide: HIOs connect to the **PA Patient & Provider Network (P3N)**. A main service of the Pennsylvania Department of Human Services' PA eHealth Partnership Program, the P3N facilitates the secure sharing of patient information across a larger geographic area as well as enhanced provider reporting.

Pennsylvania Patient and Provider Network (P3N)

Statewide Connections with five Certified Participating HIOs

- ClinicalConnect Health Information Exchange (Connected: July 2016)
- Central Pennsylvania Connect HIE administered by Penn Medicine Lancaster General Health (Connected: May 2019)
- HealthShare Exchange of Southeastern Pennsylvania (Connected: April 2016)
- Keystone Health Information Exchange (Connected: May 2016)
- Lehigh Valley Health Network (Connected: February 2022)

State Agency EHR Connection

- PA Department of Corrections has begun the P3N Onboarding Process (Connected: September 2019)

Interstate Connections

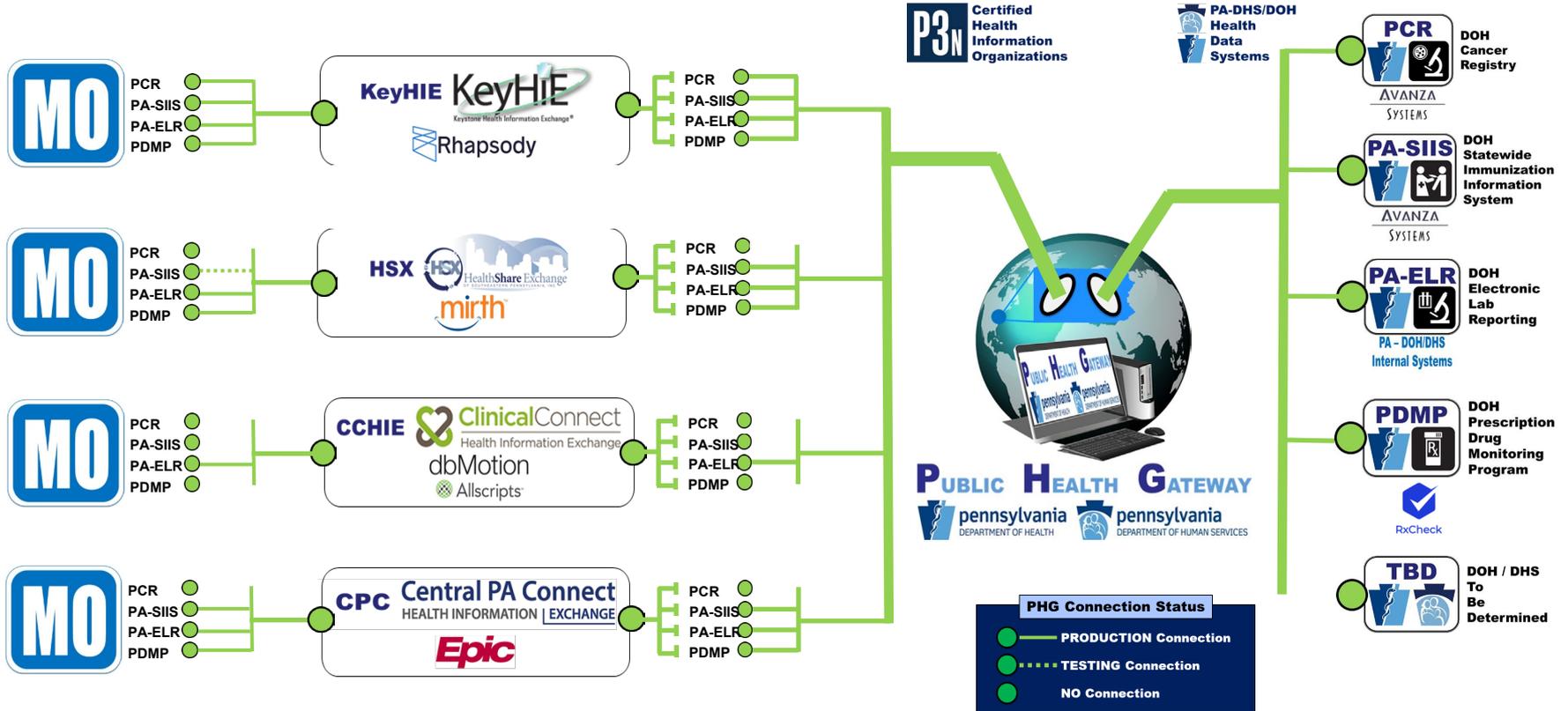
- Delaware Health Information Network (ADTs only: January 2022)
- CRISP Shared Services for Maryland, West Virginia, District of Columbia, and Connecticut HIEs (ADTs only: Data Sharing Agreement is in Pennsylvania state approval process)

Public Health and Population Health Initiatives

1. Pennsylvania Department of Corrections' EHR is integrated directly with the P3N
2. P3N-Certified HIOs can provide streamlined public health reporting and information retrieval for their provider members through the Public Health Gateway
3. Facilitates the real-time sharing of admission-discharge-transfer (ADT) messages across HIOs
4. Since March 2020, the P3N has provided daily patient-level reporting to Department of Health epidemiologists on confirmed and exposed COVID cases identified through ADT surveillance
5. Plan to leverage ADT surveillance to identify possible child-abuse cases for the Office of Developmental Program.
6. Provided grant funding for the selection and implementation of a statewide resource and referral tool to facilitate closed-loop referrals for unmet social determinants of health (SDOH) need that will be integrated with the state HIE infrastructure
7. P3N hosts a statewide Advance Directives and Care Plan Registry

Public Health Gateway

PHG HIO/MO and Commonwealth Health Data Systems Connectivity Overview and Status (February 2023)



PHG Messages by HIO and Registry (CY2022)

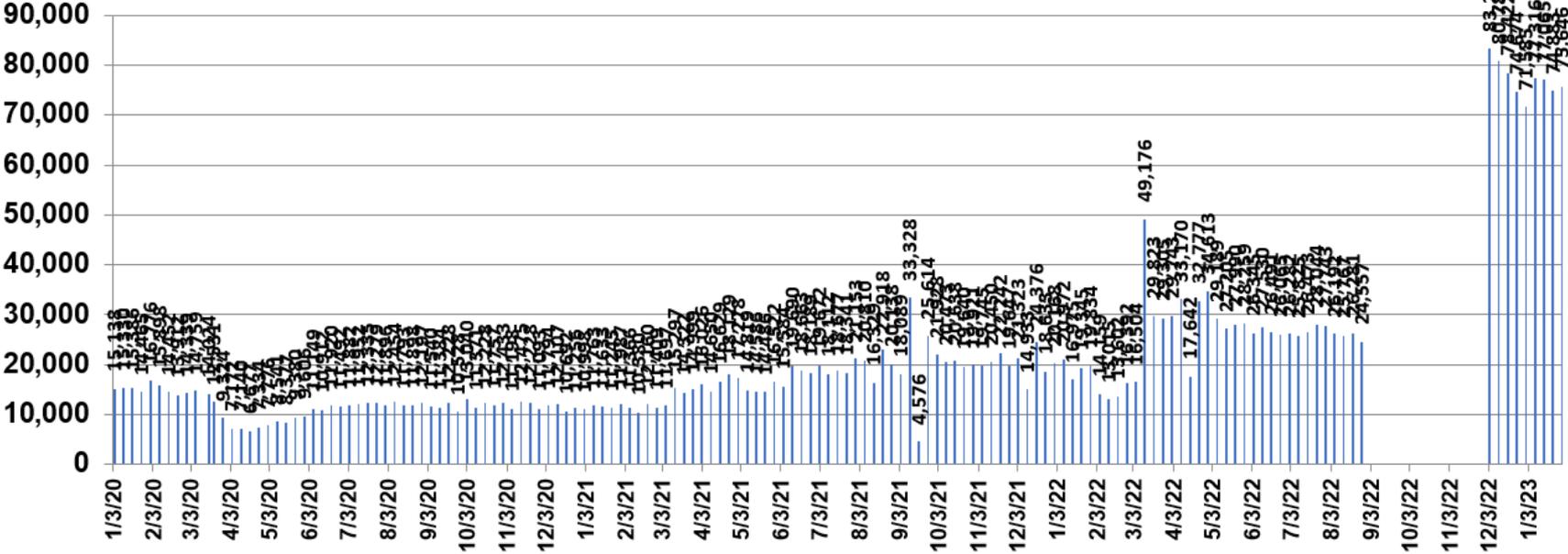
P3N Health Information Organization	Electronic Labs	Prescription Drug Monitoring Program	State Immunization Information System	Cancer Registry	Total Messages
Central PA Connect HIE	187,804	286,769	1,983,679	0	2,458,252
ClinicalConnect HIE	66,028	0	0	0	66,028
HeaalthShare Exchange	493,604	1	0	0	493,605
Keystone HIE	471,597	364,059	2,256,254	857	3,092,767
Mt. Nittany Exchange	57,792	0	0	0	57,792
Total	1,276,825	650,829	4,239,933	857	6,168,444

P3N ADT Service

- The P3N ADT Service has now delivered more than 110 million outbound ADT messages to HIOs.
- Began sending the full ADT message content in August 2022.
- There are more than 160 facilities sending Emergency Department (ED) and Inpatient ADTs to the P3N.
- The Delaware Health Information Network has participated in the P3N ADT Service since January 2022.
- CRISP Shared Services has agreed to onboard to P3N ADT Service for Maryland, West Virginia, District of Columbia, and Connecticut.
- An updated listing of facilities sending ED and Inpatient ADTs is on the DHS website.
- P3N ADT Service Operations Committee meets monthly.
- COVID surveillance of P3N ADTs continues.

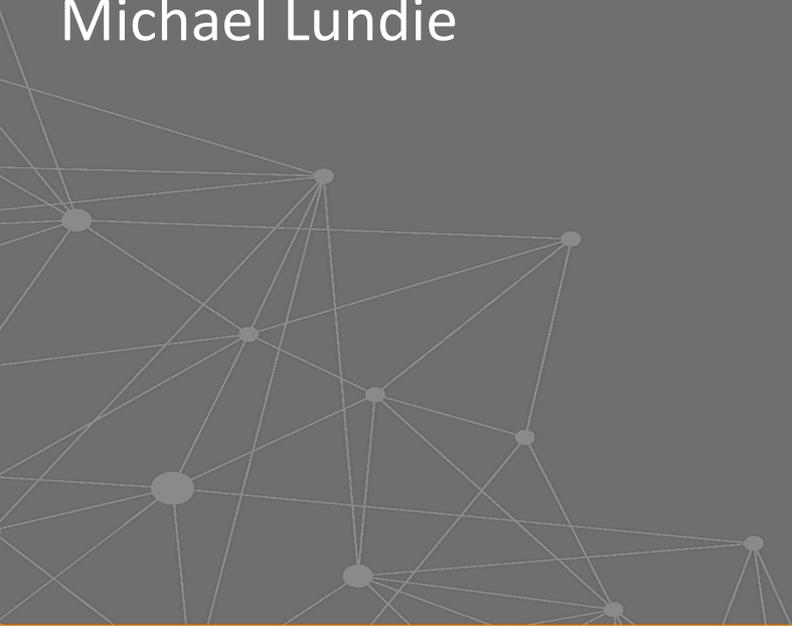
Unique Persons Served by P3N ADT Service

Weekly # of Unique Persons' ADTs sent by P3N to HIOs

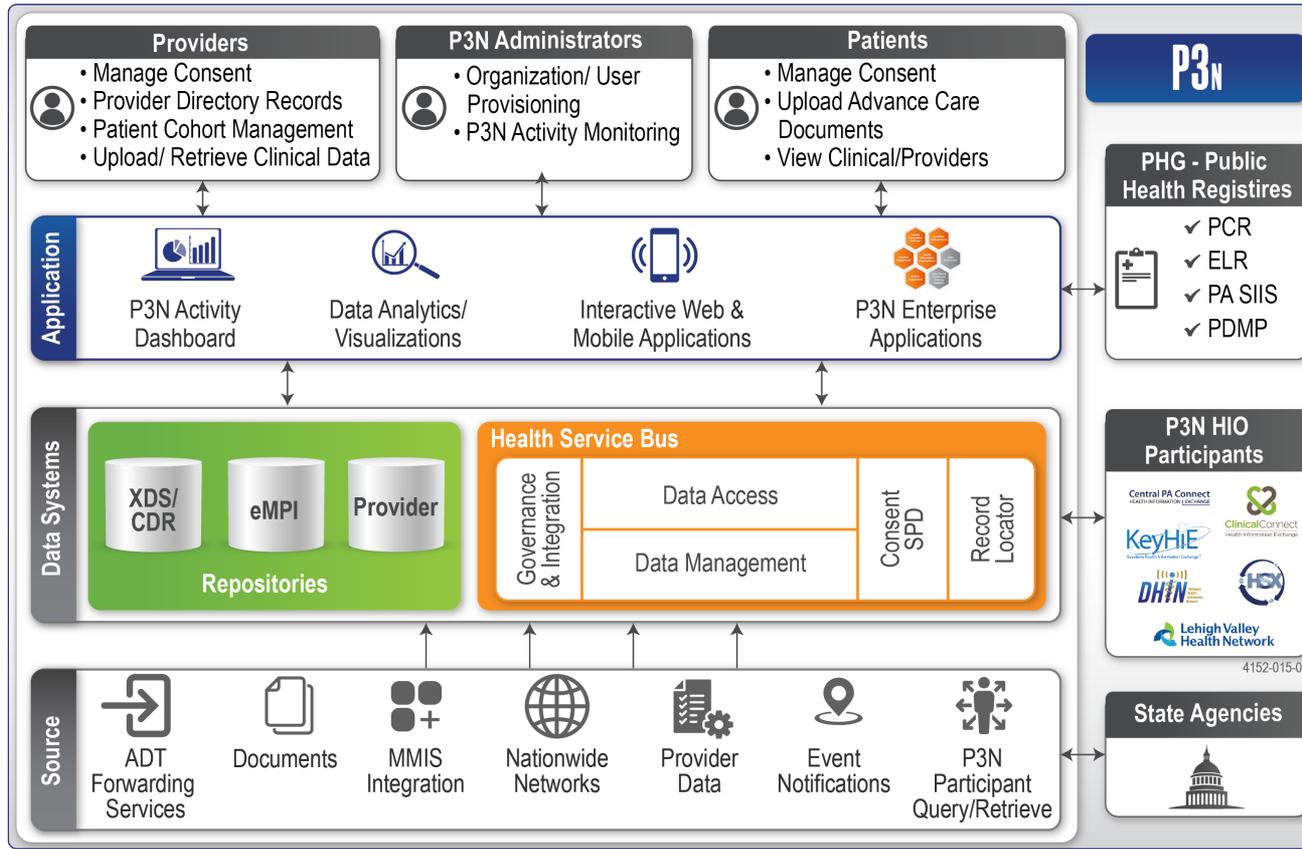


P3N Infrastructure Overview

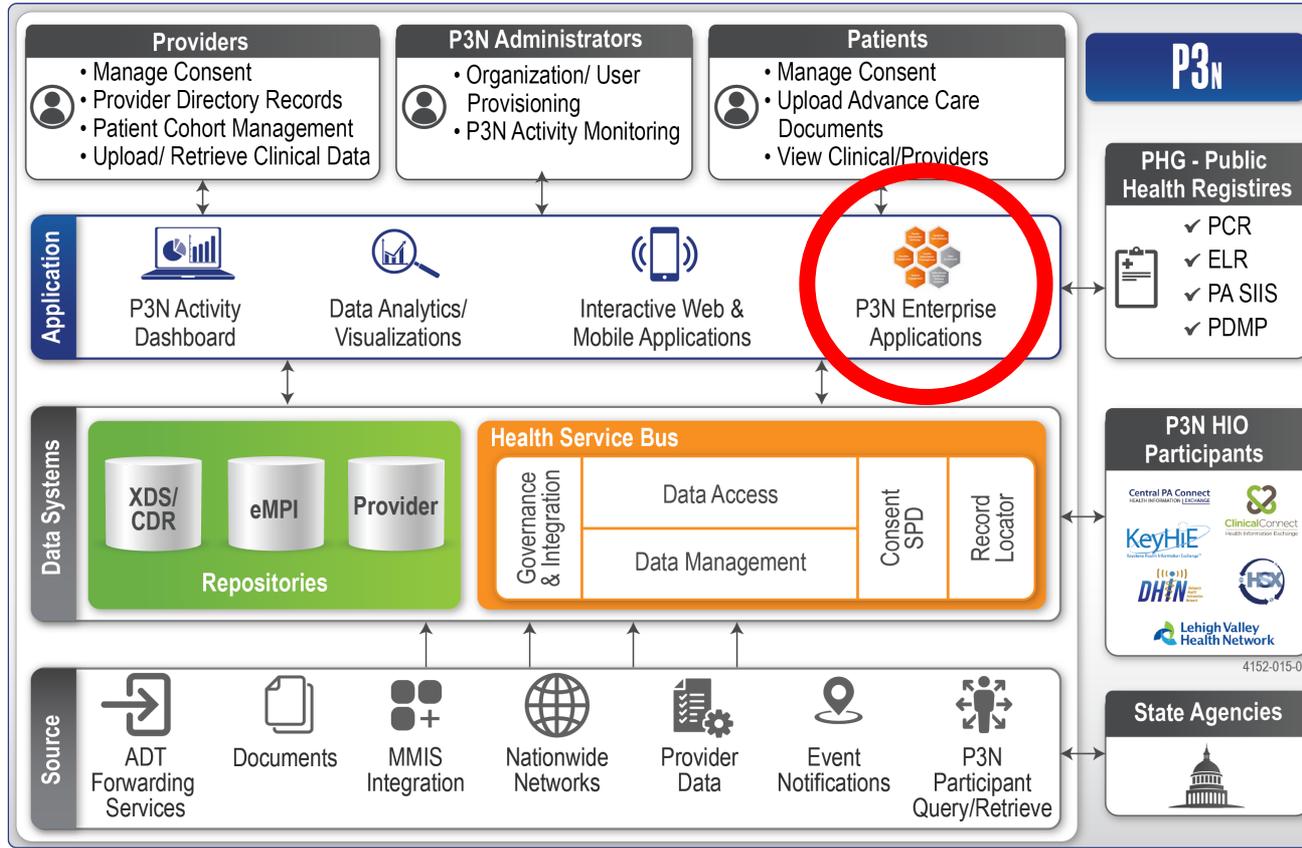
Michael Lundie



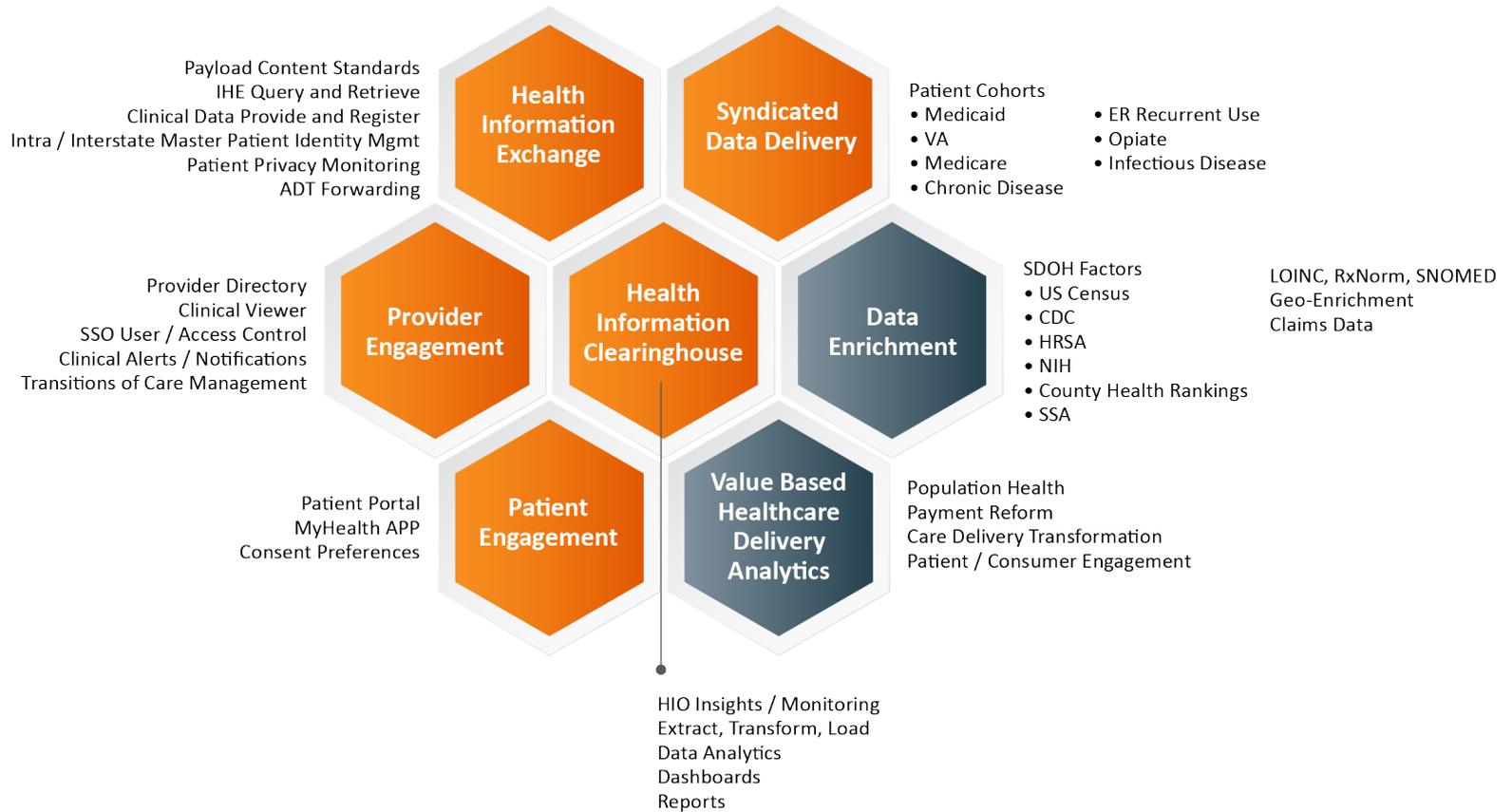
P3N Functional Diagram



P3N Functional Diagram



P3N Enterprise Application - Health Information Clearinghouse



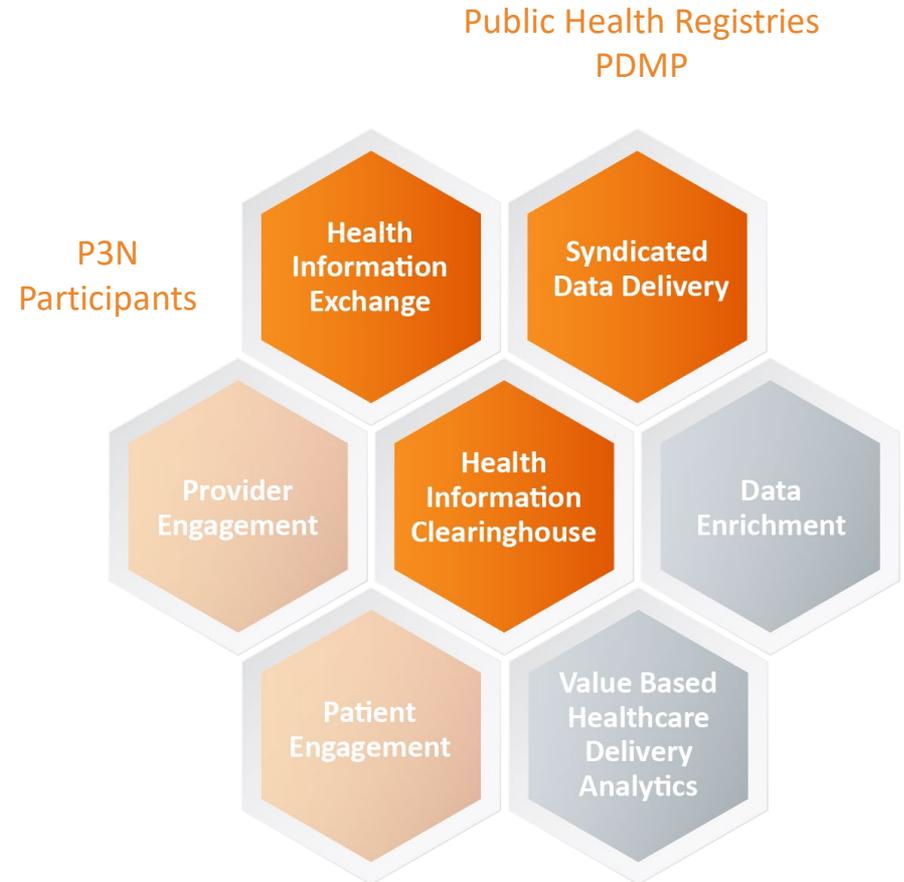
Health Information Clearinghouse – Data Privacy / Governance

- Data Sharing Agreements / Policies / Guard Rails
- Security
 - Authorized Access Control
 - Data Encryption
 - HITRUST / ISO 20000-1, 27001, 9001
 - Services, Security Framework, Quality
- Patient Consent Management
- Super Protected Data Monitoring
 - Intra & Inter state
- Data Quality / Agreed upon Standards for Data Ingestion / Delivery
- HIO Participant Onboarding Processes



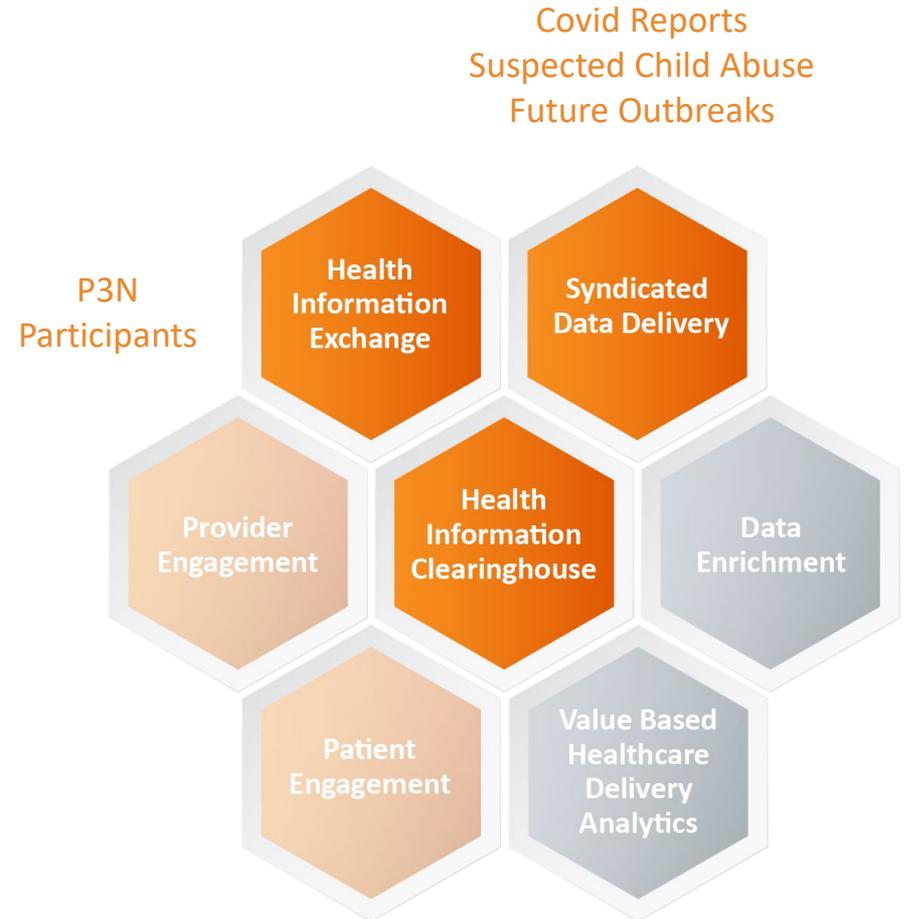
Health Information Clearinghouse – PHG Unified Interoperability

- PHG Unified On-Ramp for P3N Participants
- Pass-Through Delivery of Clinical Payloads between P3N Participants and Registries
- Transaction Volume Analytics / Trends
 - HIO Participation Levels
 - Registry Delivery / Inquiry Volumes



Health Information Clearinghouse – Patient Cohort Monitoring

- Admission, Data, Transfer (ADT)
Selective Cohort Abstraction
 - Diagnosis Codes
 - Age Ranges
 - Zip Code / County
 - Gender
 - Provider
 - Data Source
 - P3N Participant
 - Data Contributor

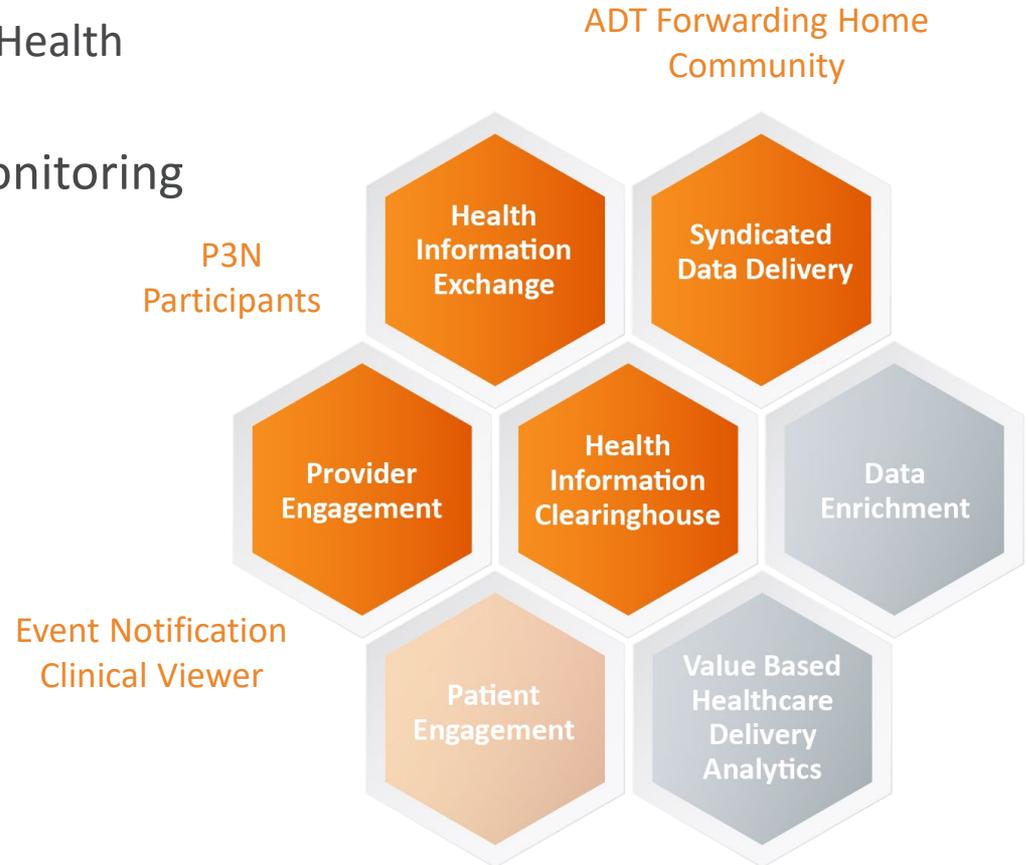


Health Information Clearinghouse – Patient Cohort Monitoring

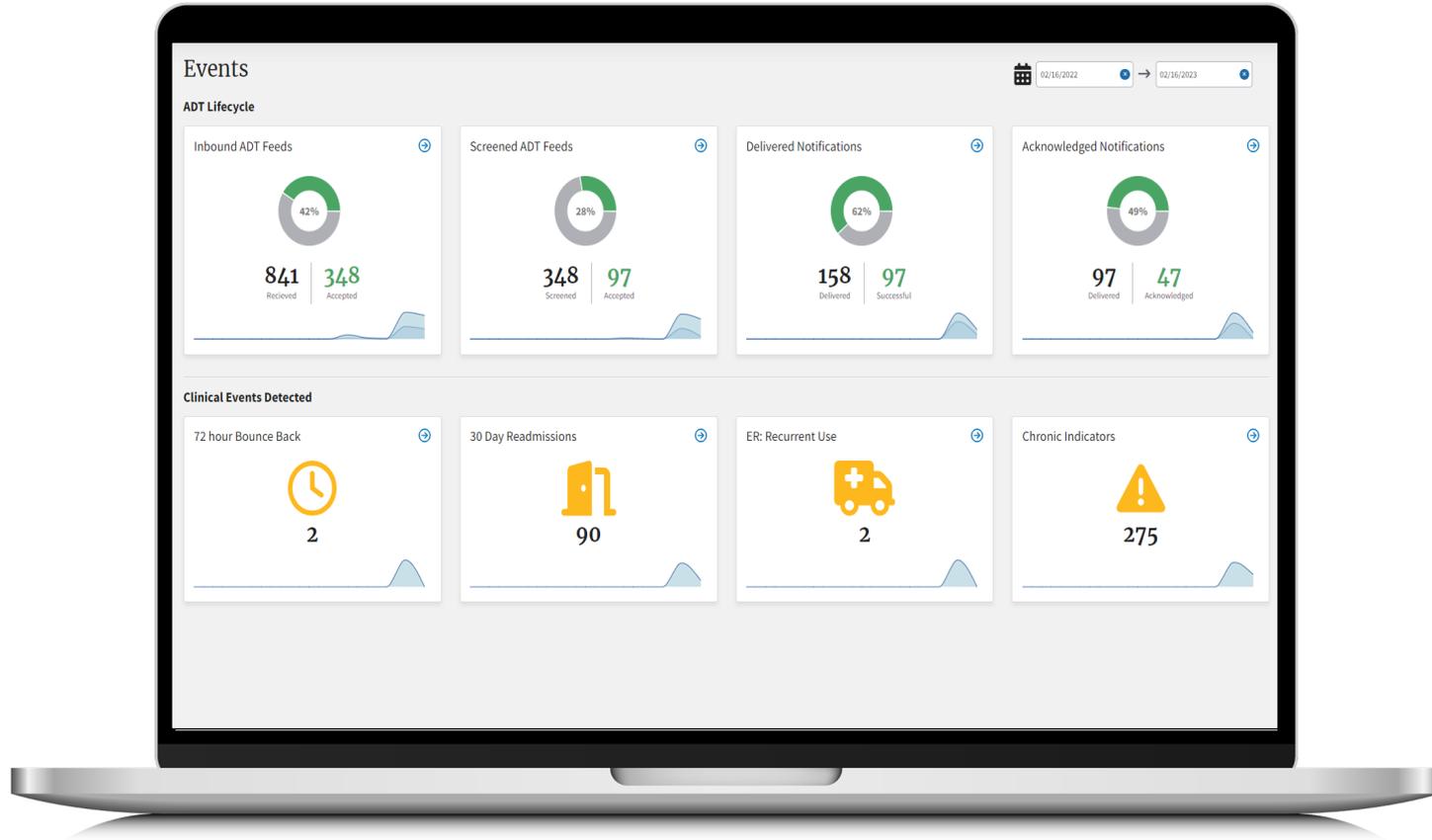


Health Information Clearinghouse – Event Notification Monitoring

- Subscription Based
 - Provider / Care Manager / Public Health Screening ADTs
- At-Risk Patient Cohort Roster Monitoring
 - Admissions
 - Discharges
 - Diagnosis Code Cohort Screening
 - 30 Day Readmissions
 - 72 Hour Bounce-Backs
 - ER Recurrent Use
 - Acknowledgments
- Integrated Clinical Viewer
- ADT Forwarding



Health Information Clearinghouse – Event Notification Monitoring



Health Information Clearinghouse – Event Notification Monitoring

Patient Information: Renee Osweiler, Female, 54 yo, 111 Shirley Ave, Revere, MA 02151

Diagnoses:

Low back pain Dr. Kenneth Ross 1/19/2022	Chest pain on breathing Dr. Kenneth Ross 10/19/2021
Intercostal pain Dr. Adam Robinson 7/19/2021	Pain in left foot Sandra Lambert 4/19/2021
Pericumbical pain Sandra Lambert 1/19/2021	Acute bronchitis due to coronavirus Dr. Adam Robinson 10/19/2020

Allergies & Alerts:

Suffs Tongue swelling 8/29/2014	severe	Betadine Skin Rash 8/29/2014	mod
IV Contrast dye itching 8/29/2014			mod

Documents:

Name	Type	Date	Con
Advance Directive	Advance Directives	03/06/2022	e54
My Pennsylvania POLST Form	Pennsylvania Physician Orders for Life Sustaining Treatment (POLST)	02/06/2022	e54
Renee 2022 01 29 Opt In	Consent Form	02/09/2022	e54
Renee 2021 10 01 Opt Out.pdf	Consent Form	02/06/2022	e54
Patient Summary	CCDA	01/28/2022	e54
Enteral Nutrition Order	Enteral Nutrition	11/22/2021	e54

Medications:

Medication	Quantity	Start Date	End Date	Refills
Central line IV JANICE WHITE	1 Tablet(s)	1/24/2022		1 Tablet(s)
Levula 20mg JANICE WHITE	1 Tablet(s)	5/24/2021		1 Tablet(s)
Omeprazole 20mg JANICE WHITE	1 Tablet(s)	9/24/2021		1 Tablet(s)
Sertraline Hcl JANICE WHITE	1 Tablet(s)	5/24/2021		1 Tablet(s)
Levula 20mg JANICE WHITE	1 Tablet(s)	5/24/2021		1 Tablet(s)
Metoprolol 50mg JANICE WHITE	1 Tablet(s)	7/24/2021		1 Tablet(s)
Cozaamin 2.5mg JANICE WHITE	1 Tablet(s)	3/24/2021		1 Tablet(s)

Abnormal Lab Results:

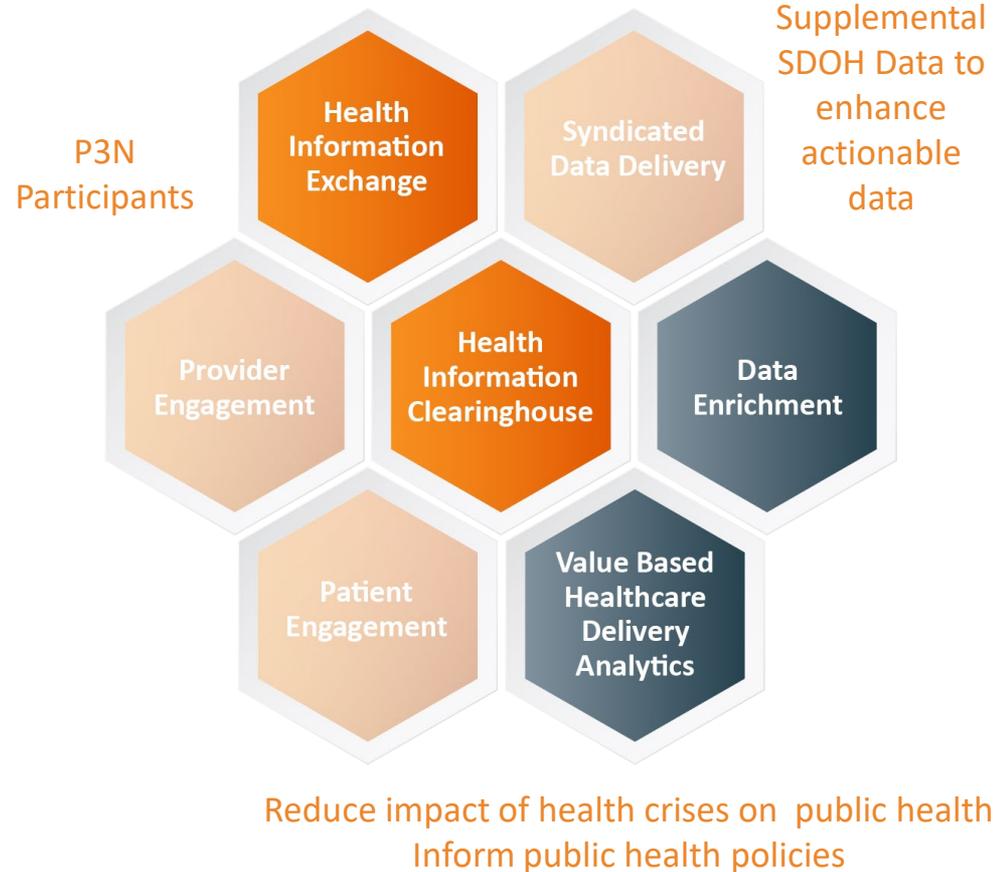
Test	Result	Date	Time
Hemoglobin A1c measurement device panel	Low	01/20/2022	10:27 AM
Hemoglobin A1c measurement device panel	Low	01/20/2022	10:27 AM
Hemoglobin A1c measurement device panel	High	11/25/2021	10:16 AM
BMP	Low	08/23/2020	08:00 AM
HgA1C	High	08/23/2020	08:00 AM
HgA1C	High	10/20/2014	07:28 AM

Radiology Results:

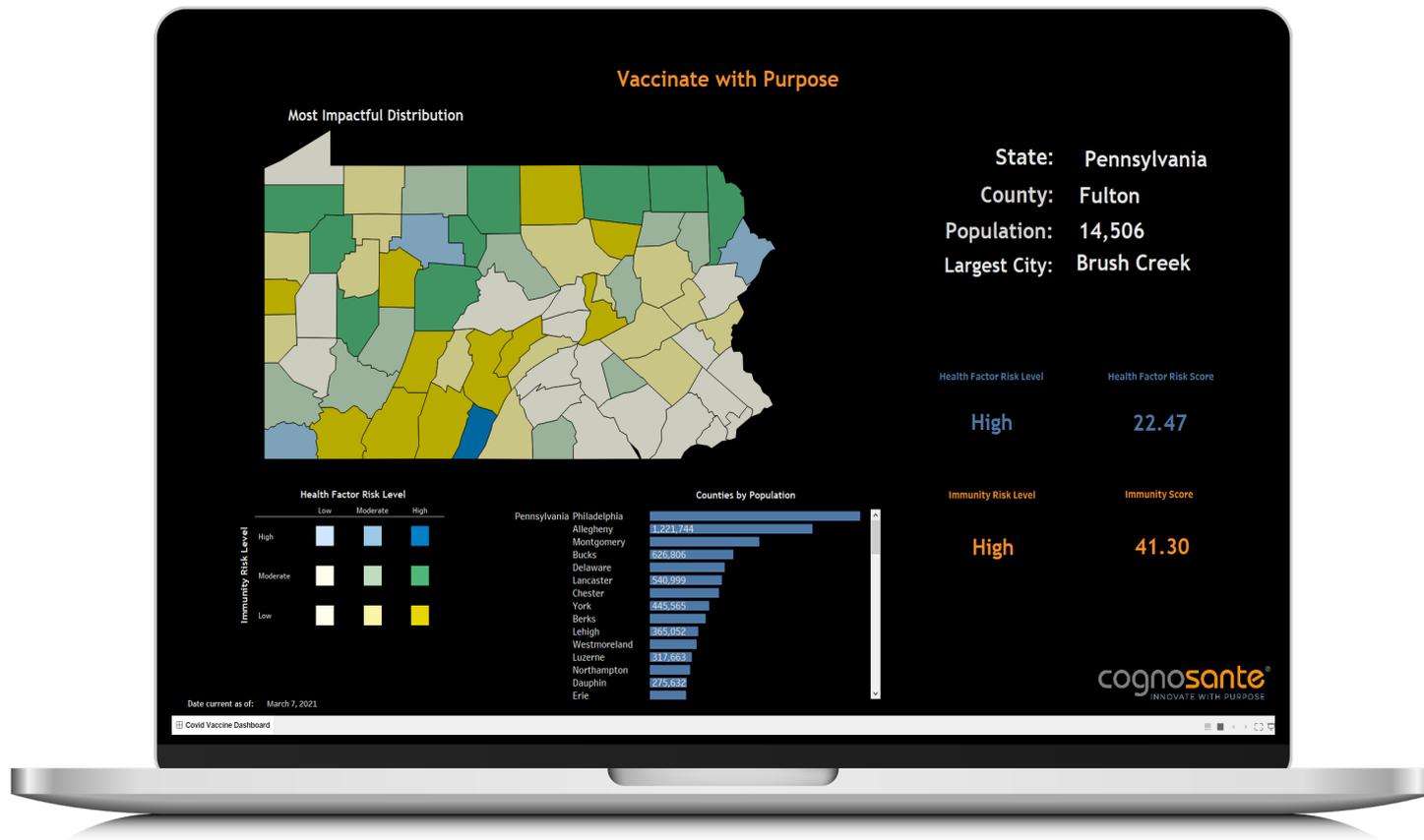
Description	Date Created
Breast Mammogram	08/14/2020
Left Foot xray from previous hospitalizations with nail in foot	02/04/2020
Left Foot xray from previous hospitalizations with nail in foot	03/07/2020
MRI of heart	03/07/2020
X Ray Exam of Knee	03/27/2015

Health Information Clearinghouse – Patient Cohort Analysis / Predictive Modeling

- At-Risk Patient Cohort Analysis
 - Demographics
 - Health Factors (i.e., -Immunization status, Comorbidities)
- Data Enrichment
 - Geographics disparities
 - Income
 - Housing
 - Environmental Hazards
- Predictive Analytics
 - Identify Patterns, Trends, Risks
 - Track Rise or Fall of cases in a particular region
 - Identify hotspots
 - Monitor changes in demographics



Health Information Clearinghouse – Patient Cohort Analysis / Predictive Modeling



Questions?

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