



Data Exchange Framework (DxF)

State Approaches to Event Notification

Thursday, July 16, 2026

10:30 am – 12:00 pm PT



Please note that this webinar will be recorded, and all questions and responses submitted through the Q&A feature may be posted on the DxF website.



Agenda



Welcome: *Rim Cothren, Independent Consultant, HCAI*

State Approaches to Event Notification:

1. North Carolina: *Jenell Stewart, DrBA; Assistant Director, North Carolina Health Information Exchange Authority (NC HIEA)*

2. Maryland: *Craig Behm, President and CEO, CRISP*

3. Massachusetts: *Angela Miller, Interoperability and HIE Project Director, Mass Hlway/MeHI*

4. New York: *David Horrocks, Chief Executive Officer, New York eHealth Collaborative (NYeC)*

5. Patient Centered Data Home (PCDH): *David C. Kendrick, MD, MPH; Chair, Department of Medical Informatics, University of Oklahoma College of Medicine; Strategic Advisor, Civitas Networks for Health*

Q&A / Wrap-up

The Vision for Data Exchange in California

Every Californian, no matter where they live, should be able to walk into a doctor's office, a county social services agency, or an emergency room and be assured that their health and social services providers can access the information they need to provide safe, effective, whole person care—while keeping their data private and secure.



DxF Road to Improving Statewide Exchange

Stakeholder Advisory Committee Meeting:

Review of QHIO Program issues, including impacts on event notification in California



Jun

Upcoming Stakeholder Advisory Committee Meeting:

Discussion of proposed solutions to address QHIO Program issues, including impacts on event notification



Aug

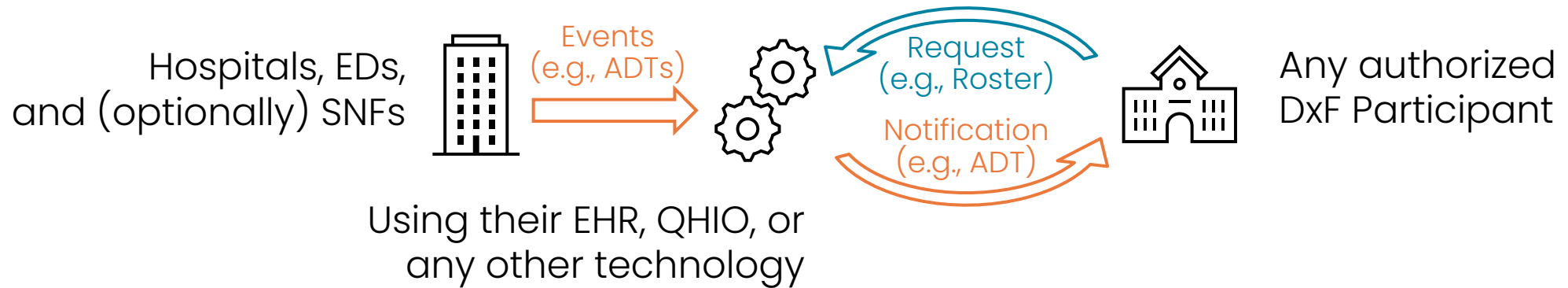
Event Notification Webinar:

Opportunity to learn from other states that have implemented event notification including their approach, lessons learned, and best practices



Event Notification under DxF

DxF Approach



Value to DxF Participants

No Gaps in Awareness

Providers are notified automatically—no one has to call around or hope the word gets out.

Safer, Smarter Care

Full history at every handoff means fewer errors, fewer duplicate tests, better decisions

Smoother Recovery

Timely discharge notifications prepare the care team before the patient even walks in the door.

Q&A Procedure

- Please submit your questions through the Zoom Q&A function.
- HCAI will select questions to be answered live during the webinar as time allows.
- If your question was not answered during the session and you would like to follow up with HCAI, please submit your question to: dxf@hcai.ca.gov



North Carolina

Jenell Stewart, DrBA

Assistant Director, North Carolina Health Information Exchange Authority (NC HIEA)



NORTH CAROLINA HEALTH INFORMATION EXCHANGE AUTHORITY

NC*Notify Service

July 16, 2026

Jenell Stewart, DrBA

Assistant Director, Health Analytics and External Services

N.C. Health Information Exchange Authority



The N.C. Health Information Exchange Authority

The NC HIEA was created in 2015 to oversee and administer the state-designated health information exchange, NC HealthConnex. Providers who provide health care to individuals whose health care is paid for with state funds, like Medicaid or the State's Health Plan, were mandated to connect to NC HealthConnex by January 1, 2023.



Vision: *Link all health care providers across North Carolina, enabling participants to access information to support improved health care quality and outcomes.*

Mission: *We connect health care providers to safely and securely share health information through a trusted network to improve health care quality and outcomes for North Carolinians.*

Who is the NC HIEA?



STATE - DESIGNATED



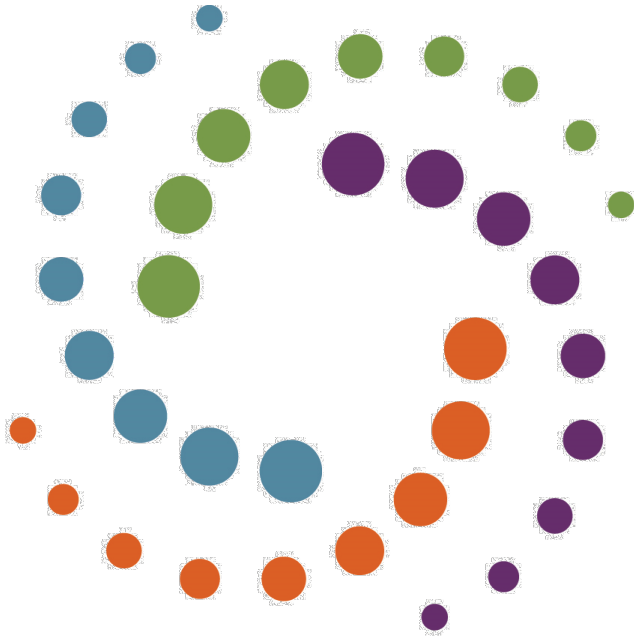
SECURE



PARTNERSHIP

- The North Carolina General Assembly created the North Carolina Health Information Exchange Authority (NC HIEA) in 2015 to facilitate the creation of a modernized HIE to better serve North Carolina's health care providers and their patients.
(*NCGS 90-414.7*)
- Part of the N.C. Department of Information Technology's Data Division.
- Technology partner is SAS Institute.
- Twelve-member [Advisory Board](#) made up of various health care representatives that includes the DHHS Secretary, DIT Secretary and GDAC Director.

NC HealthConnex by the Numbers



Footprint:

- More than 10,000 ambulatory care facilities
- All acute care hospitals in North Carolina
- 54 border and interstate HIEs connected via the eHealth Exchange and the Patient Centered Data Home, including connections to the VA and DoD
- 26 million+ unique patient records

Utilization on an average day:

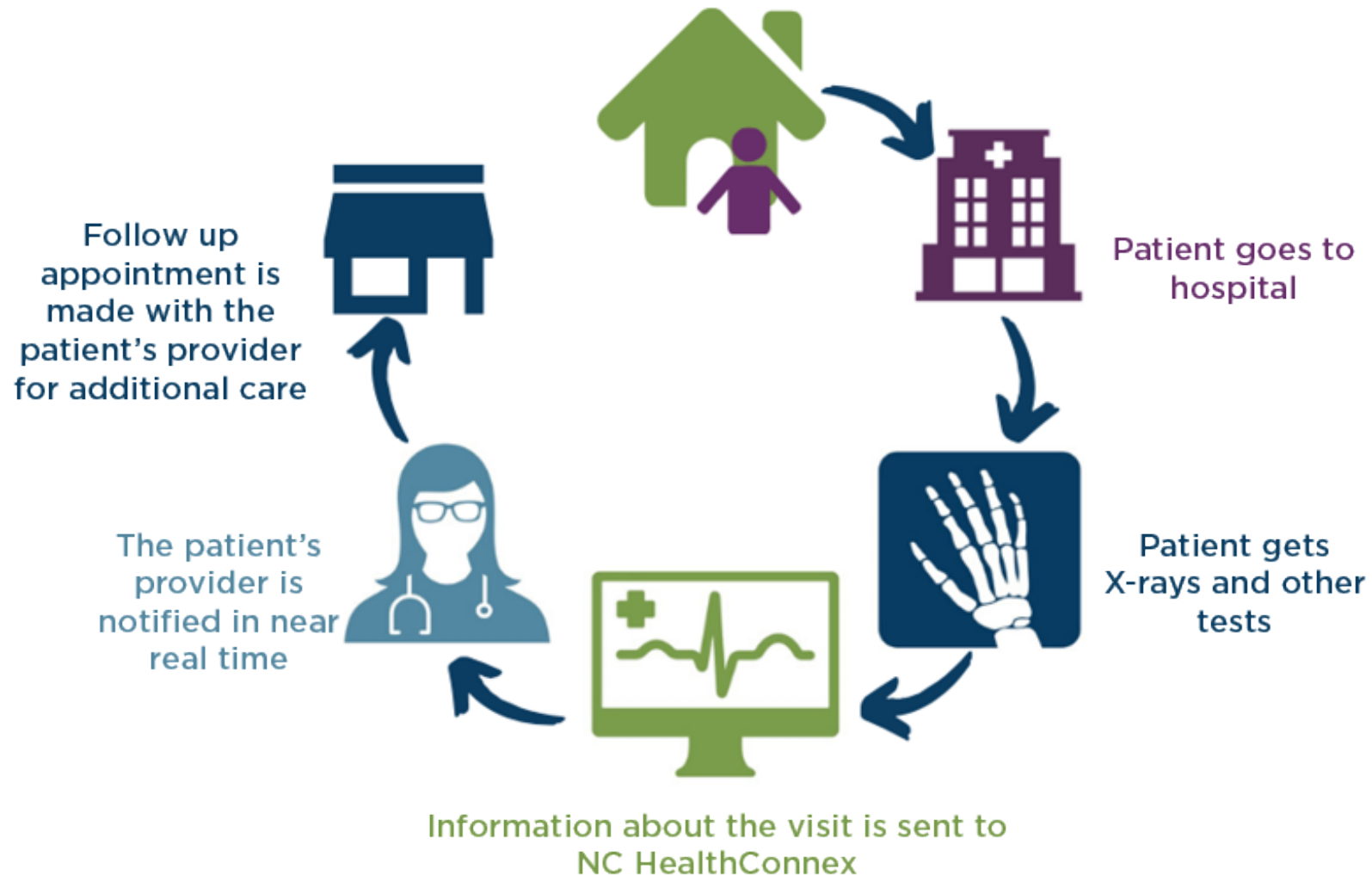
- Inbound –
 - 416K Continuity of Care Documents
 - 1.7M Admission Discharge Transfer messages
- Outbound –
 - 176K query responses
 - 164K clinical event notifications

Mandate/Connection Overview

- The [mandate to connect](#) to NC HealthConnex required that those receiving state funds for providing health care services, such as Medicaid and the State Health Plan, initiate their connection by **January 1, 2023**.
- Signing a [participation agreement](#) demonstrates a good-faith effort to meet the connection mandate.
- Actively engaging in the onboarding process with your technical vendor and the NC HIEA also demonstrates a good-faith effort to meet the connection mandate.
- Some provider types are not required to connect but may do so voluntarily. Recent legislation has updated this list to include chiropractors.
- A complete list of providers who needs to sign-up can be found in [N.C.G.S. § 90-414.4](#) or on our page [What Does the Law Mandate?](#)



NC*Notify - How Does It Work?



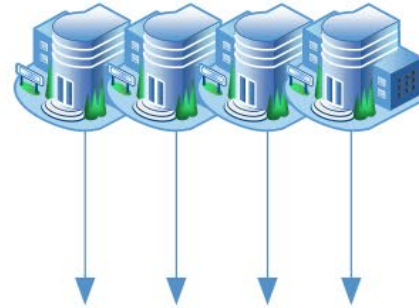
NC*Notify – How does it Work?

Subscriptions

Subscribers establish their cohort of patients for whom they want to receive alerts.

Monitoring Feeds

All clinical data feeds coming into the HIE are monitored for a matching event or clinical data of interest to the subscribers. These events can then be pushed directly to the subscriber or made available on the web portal.



Receiving Notifications

Subscribers can receive notifications for events or data that match their patients via their preferred method.

- ☐ Batched notification files in delimited or HL7 format.
- ☐ Near real-time notifications via HL7 messages.
- ☐ Web-based NC*Notify dashboard via NC HealthConnex portal.



NC*Notify: Base Tier Overview

Base Tier

Standard Admission, Discharge, and Transfer (ADT) event notifications

For organizations monitoring a high volume of patients and/or notifications

For organizations that provide no direct care to patients

Patient panel submission via Secure File Transfer Protocol (sFTP) or Direct Secure Messaging (DSM)

Receive notifications as:

- Batched notifications flat file via sFTP
- Near real-time notifications formatted as HL7 messages or CCDs delivered via Transport Layer Protocol (TLS) or sFTP

NC*Notify: Plus Tier Overview

Plus Tier

Supported by a third-party vendor, PointClickCare (PCC)

Standard ADT and advanced alerts

For organizations wanting to leverage enhanced features

Panel submission via

- sFTP or DSM
- Self-service panel loader (SSPL)
- Auto-attribution

Receive notifications as:

- Batched notifications flat file via sFTP
- Near real-time notifications via DSM
- Near real-time notifications via the NC*Notify Dashboard, a web-based portal
- Tickler email option



NC*Notify – What Notifications are Available?

Admission, Discharge, or Transfer – Notification of any visit in the NC HealthConnex network. (Base and Plus Tiers)

COVID-19 alerts – Notifications of a COVID-19 test and the result. (Plus)

High utilizer alert – Notification of at least 2 ED visits in 90 days or at least 4 inpatient admissions in 12 months. (Plus)

Dental alerts – Providers are alerted when patients visit the emergency department for dental care. (Plus)

Care team change alert – Providers are informed when a new organization has subscribed to their patient. (Plus)

Diabetes diagnosis alert – Providers are alerted upon a new diabetes and/or pre-diabetes diagnosis for patients they are monitoring. (Plus)

Chronic care management alert – Providers receive an alert when a patient meets the Centers for Medicare and Medicaid Services' chronic care management services criteria. (Plus)



Questions and Discussion

Maryland

*Craig Behm
Chief Executive Officer, CRISP Shared Services*

CRISP Event Notifications

July 16, 2026

10480 Little Patuxent Parkway, Suite 800
Columbia, MD 21044
877.952.7477 | info@crisphealth.org
www.crisphealth.org



• Quick History

- State-Designated Health Information Exchange (HIE) and Health Data Utility (HDU) in Maryland
 - Established in 2009
 - Non-Profit 501(c)(3) Corporation
- Vision to advance health and wellness by deploying health information technology solutions adopted through cooperation and collaboration
- Robust corporate governance and data management
 - Transparency for data access and use through Accounting of Disclosures and Consent
 - HITRUST, audits, and continuous monitoring
 - Active Board of Directors and multiple committees for Participation and Data Use Agreements

CRISP and a Multi-State Platform



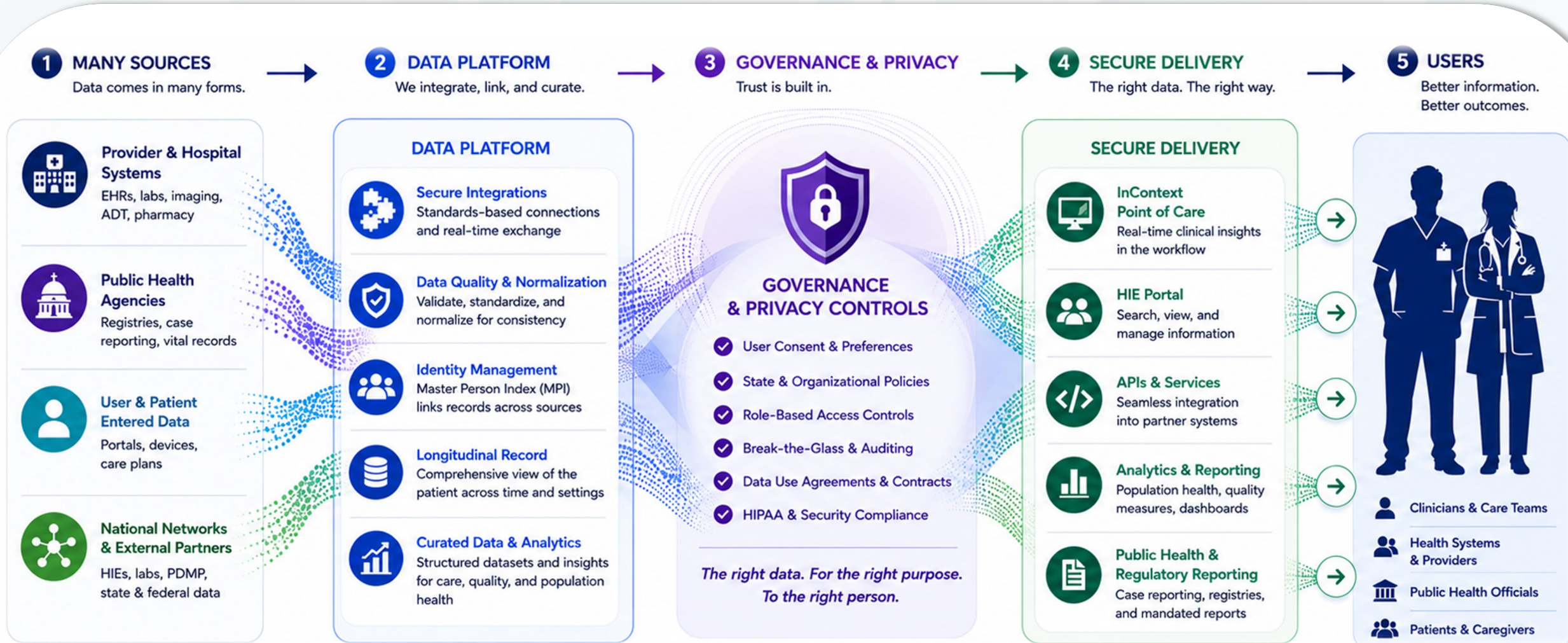
Trust, sustainability, and impact is best done locally; technology, best practices, and innovation require scale:

- Active governance means data use goes well beyond treatment for public health, research, payer exchange, and human services
- Patient match, data lake, streaming, delivery, and monitoring are highly performant at scale

CRISP formed CRISP Shared Services in 2020 to enable national leadership and growth without disrupting essential state activities:

- CSS mission is to assist member organizations in achieving economies of scale, pooling innovation, and enabling best practices
- Data rights, funding, and relationships remain locally controlled
- CSS customers participate in strategic decisions to foster reuse and efficiency

• Data Sources and Receivers



● Functionality Beyond Routing

Real-time alerts to appropriate end users based on treatment and care management relationships via CSS Event Notification Delivery Service (CEND)

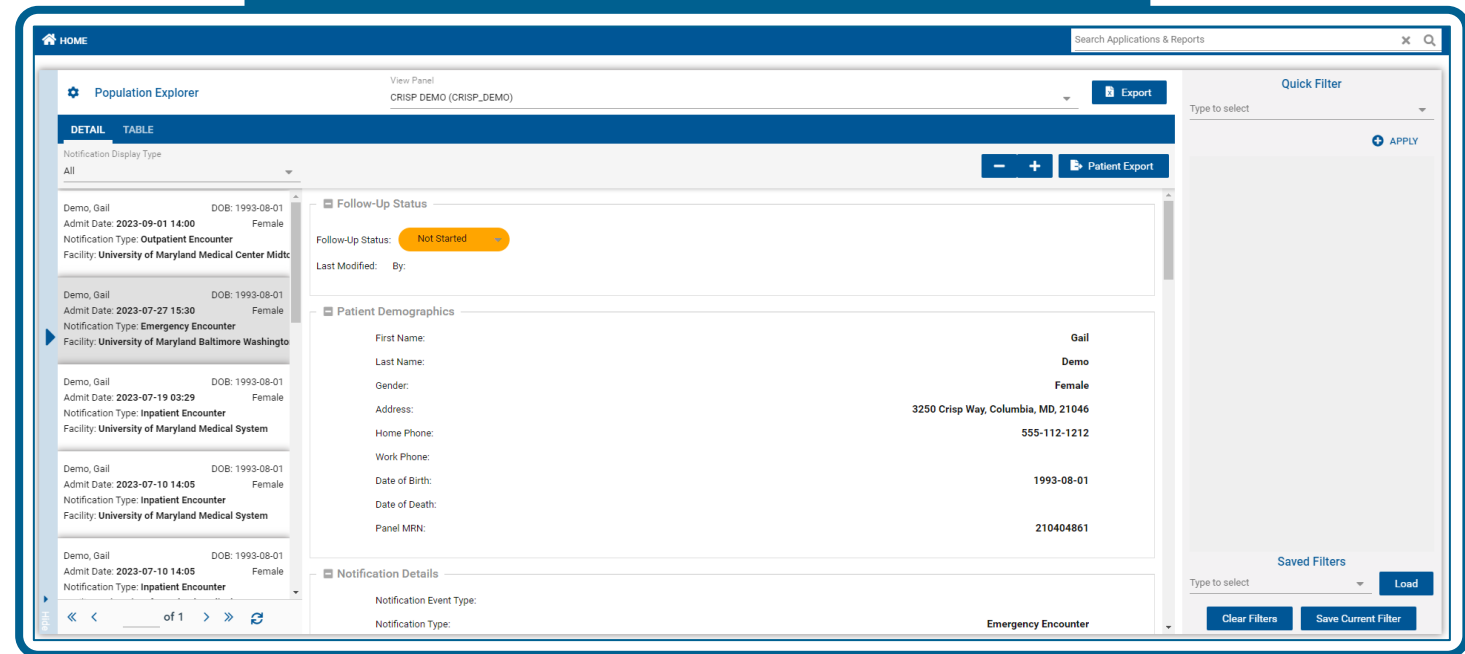
Delivery options:

- In web-based user application portal (Population Explorer)
- HL7 real-time
- Epic In Basket and Direct messaging
- Bulk extracts delivered on daily, weekly, bi-monthly basis

Custom triggers to see preventive services, abnormal labs, flagged conditions, and other personalized filters

Subscription information (a patient's Care Team) is shared across services

Population Explorer



The screenshot displays the Population Explorer web application. The interface includes a top navigation bar with a 'HOME' link and a search bar. Below the navigation bar, there's a 'Population Explorer' header with a 'View Panel' dropdown set to 'CRISP DEMO (CRISP_DEMO)' and an 'Export' button. The main content area is divided into two columns. The left column contains a table of patient records with columns for 'Notification Display Type' and 'All'. The right column contains a 'Follow-Up Status' section with a 'Not Started' button and a 'Patient Demographics' section with fields for First Name, Last Name, Gender, Address, Home Phone, Work Phone, Date of Birth, Date of Death, and Panel MRN. At the bottom, there's a 'Notification Details' section with fields for 'Notification Event Type' and 'Notification Type'. A 'Quick Filter' sidebar is visible on the right, and a 'Saved Filters' section is at the bottom right.

Notification Display Type	All
Demo, Gail	DOB: 1993-08-01 Admit Date: 2023-09-01 14:00 Notification Type: Outpatient Encounter Facility: University of Maryland Medical Center Midt
Demo, Gail	DOB: 1993-08-01 Admit Date: 2023-07-27 15:30 Notification Type: Emergency Encounter Facility: University of Maryland Baltimore Washingto
Demo, Gail	DOB: 1993-08-01 Admit Date: 2023-07-19 03:29 Notification Type: Inpatient Encounter Facility: University of Maryland Medical System
Demo, Gail	DOB: 1993-08-01 Admit Date: 2023-07-10 14:05 Notification Type: Inpatient Encounter Facility: University of Maryland Medical System
Demo, Gail	DOB: 1993-08-01 Admit Date: 2023-07-10 14:05 Notification Type: Inpatient Encounter

Follow-Up Status: Not Started

Follow-Up Status: By:

Patient Demographics

First Name: Gail
Last Name: Demo
Gender: Female
Address: 3250 Crisp Way, Columbia, MD, 21046
Home Phone: 555-112-1212
Work Phone:
Date of Birth: 1993-08-01
Date of Death:
Panel MRN: 210404861

Notification Details

Notification Event Type:
Notification Type: Emergency Encounter

Quick Filter

Type to select

APPLY

Saved Filters

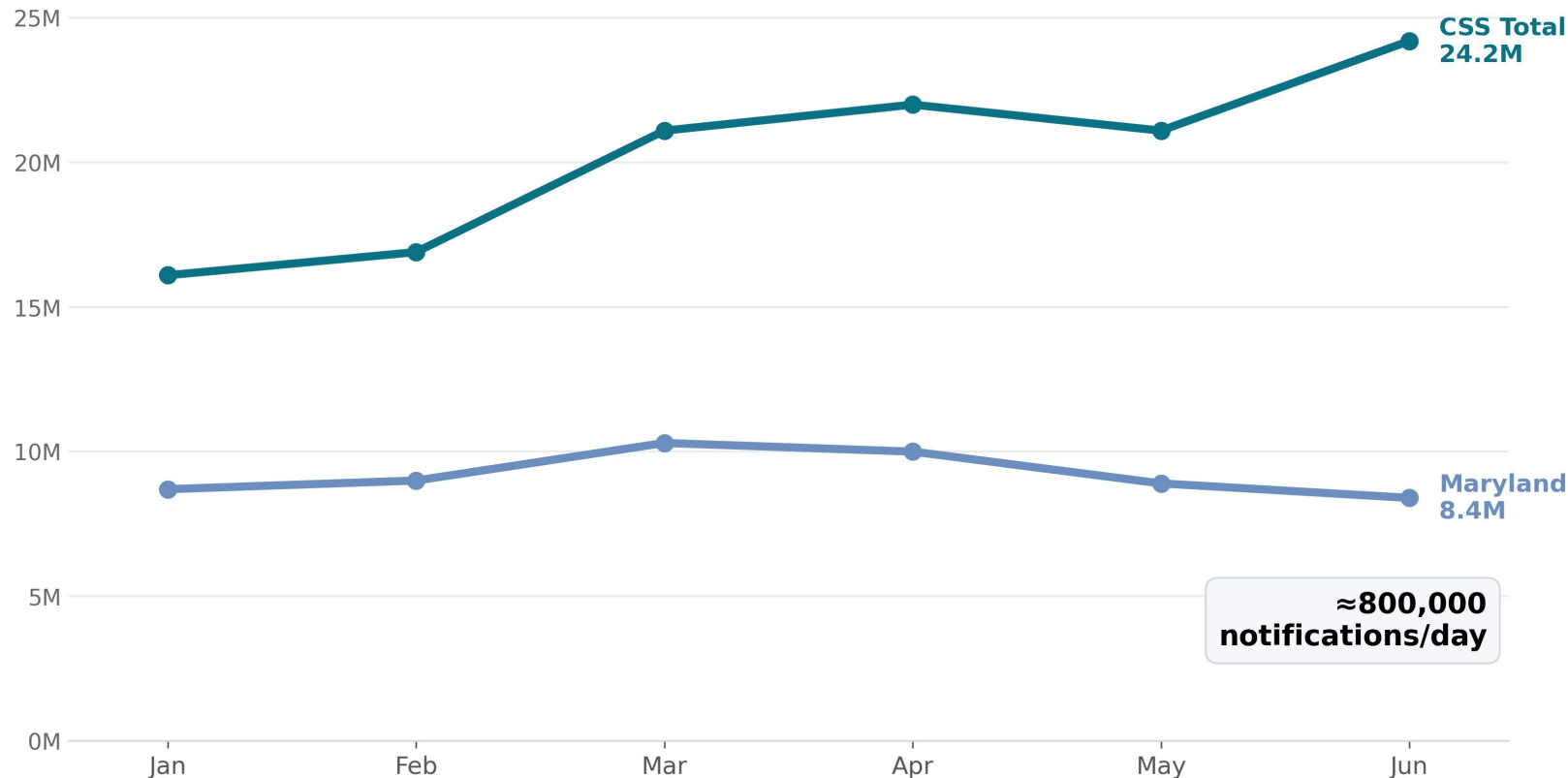
Type to select

Load

Clear Filters

Save Current Filter

• Statewide Utilization



Broad Reach

- 5M inbound daily ADTs
- 2,000 receiving organizations
- 90% of all Maryland patients have a subscriber notified of discharge

Policy Alignment

- Hospital payment model (moving to AHEAD) and value-based payment programs require participation
- Public Health and Medicaid are long-time, active partners

• Our Approach to Interoperability

1. Move from exchange to operational infrastructure

- Document exchange is largely solved for treatment; modern systems require longitudinal, multi-sector data to support real workflows, analytics, and outcomes

2. Governance enables use and must be local

- Trust depends on transparency, consent, and protection of sensitive data; local governance understands the nuance required

3. Build once and reuse everywhere

- Sustainable innovation requires shared infrastructure and common approaches, not fragmented integrations for every program



Questions?

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Massachusetts

Angela Miller

Interoperability and HIE Project Director, Mass Hlway/MeHI



Massachusetts Statewide ENS Framework Overview



To enable utilization of ENS across the state, EOHHS and the Mass HIway developed the Statewide ENS Framework in 2020 to create an interoperable ENS network.

- Certified ENS Vendors have been certified by the Mass HIway to meet specific functional, data security, data sharing and business criteria
- These vendors have **interconnected** their ENS systems to serve all care providers in Massachusetts

This means that care providers in the Commonwealth only need to subscribe to a single certified ENS vendor to receive ADT alerts from all Massachusetts Acute Care Hospitals to coordinate care after ADT events.



Requirements and Eligibility



- **Submission Requirements:** All Massachusetts Acute Care Hospitals are required to submit ADT data to one Certified ENS Vendor
- **Subscription Requirements:** All Massachusetts providers are eligible and encouraged to subscribe to a Certified ENS vendor, however subscriptions are not required or mandated by the state.
 - Current Subscribers include a variety of organization types including Ambulatory Practices, ACOs, Payers, Behavioral Health Organizations, Federally Qualified Health Centers, Home Health Agencies, and more.



Certified ENS Vendors



- **Massachusetts currently has two Certified ENS Vendors, PointClickCare and Bamboo Health**
 - Both Vendors have been certified to meet the Statewide ENS Framework certification criteria.
 - It is up to provider organizations to select the solution most appropriate for their business and clinical processes. The Mass HIway neither endorses nor recommends one Certified ENS Vendor over another

ENS Vendor Certification Criteria

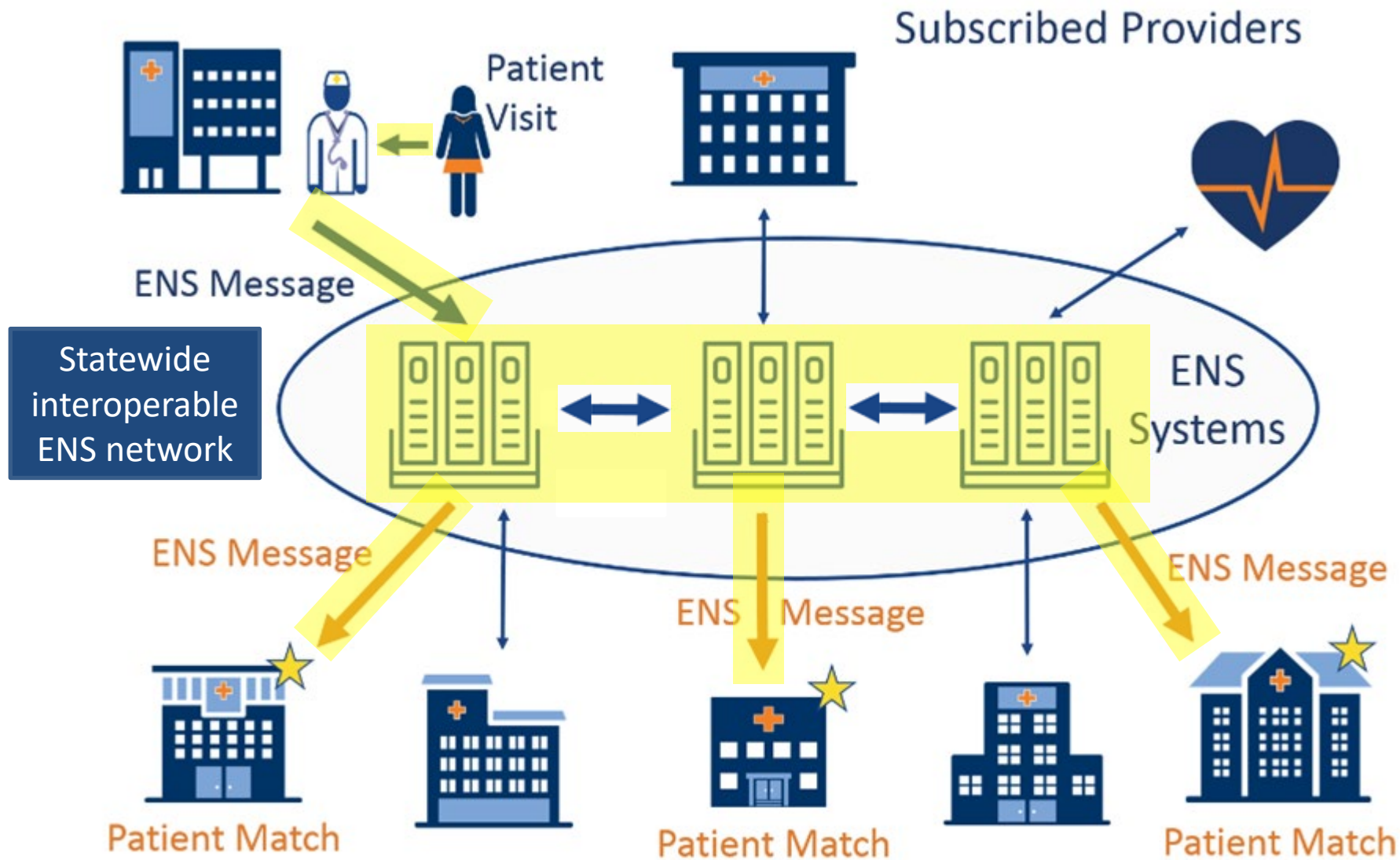
Business Requirements	Functional Capabilities	Security
Do business in Massachusetts	Send and receive HL7 ADTs	HITRUST Certified
Minimum operating threshold • Submission of ADTs from at least 20 MA acute care hospitals • At least one MA based subscriber	Patient matching algorithm	Encrypt data at rest
Full status • Threshold in MA	Generating notifications to ENS recipients	Use secured channel to transmit data
Additional business info • Adverse events • Data breaches	Secure destruction of ADTs	Use endpoint security measures like antivirus, security training, and secure destruction of ADTs
	Reporting to the State	

Certified ENS Vendor Obligations

Data Security	Data Reflection	Reporting Requirement
Maintain HITRUST Certification	Certified ENS Vendors must share ADTs with one another	Report quarterly transaction data
Maintain certification criteria standards • Encryption • Secure channel • WISP	Certified ENS Vendors must handle and delete ADTs appropriately	Report client list quarterly for program management (submitters + receivers)
Must treat ADT appropriately under data reflection	Immediate deletion of Raw ADTs, all but message header of non-match Processed ADTs	Report on submitter fill rates for key ADT fields
		Report adverse events or changes in certification condition



Massachusetts Statewide ENS Framework





Certified ENS Vendors

- Management and oversight of the two vendors and the ADT reflection process itself requires significant administrative time from the state
- Quarterly reporting from two vendors allows greater insight into the framework
 - Discrepancies between the two vendors' reporting has allowed us to identify and correct issues within the framework
- Having two vendors gives subscribing providers the opportunity to pick the vendor that best meets their organizational needs

Submitters (Acute Care Hospitals)

- Annual data quality checks of ADT feeds help to proactively identify potential issues and mapping/translation changes

Subscribers

- ENS Subscriptions give provider organizations control over how they receive event notifications, helping them streamline hospital follow-up workflows
- Subscription cost is a barrier for many provider organizations
- Having clinical information like Chief Complaint and Diagnosis included within ADT alerts is extremely valuable to subscribers. However, not all hospitals include this information.



Questions?



Contact Information

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New York

David Horrocks

Chief Executive Officer, New York eHealth Collaborative (NYeC)

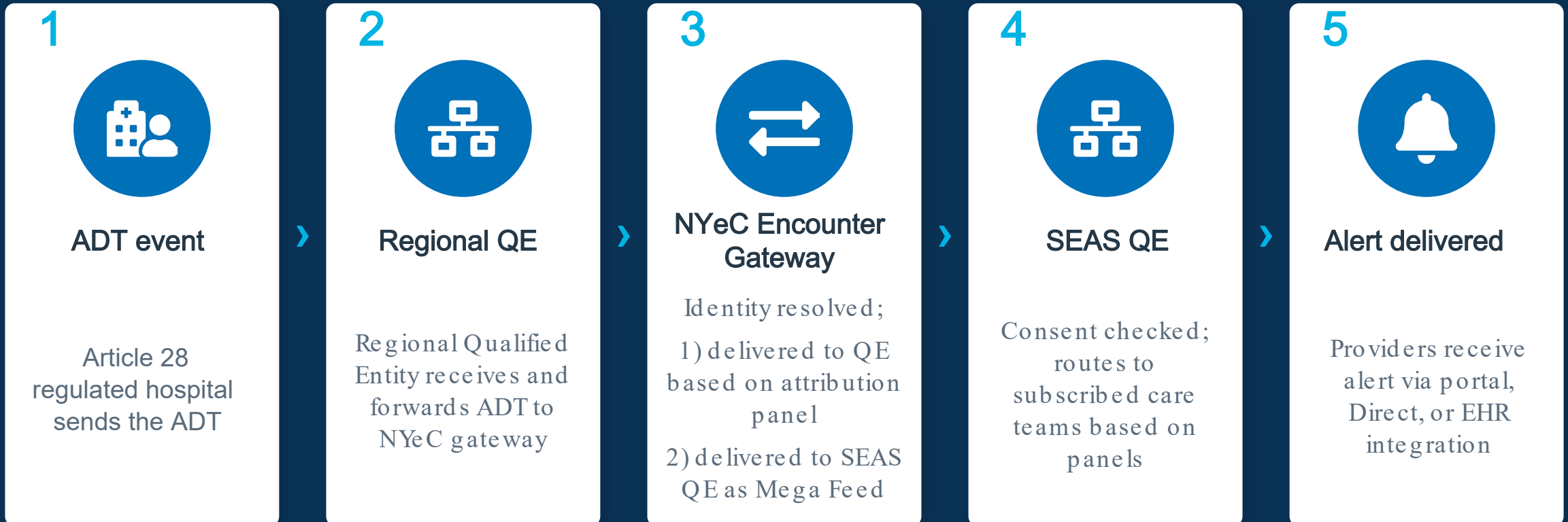
Statewide Encounter Alerting Services (SEAS)

NYeC Approach • July 2026



How a SEAS Notification Travels

Six regional Qualified Entities (QEs); two QEs contracted for Statewide Encounter Alerting Services (SEAS)



Current scope: Article 28 hospitals. Future phases under evaluation include skilled nursing facilities and other settings.

A Centralized, Modern Architecture

Moving from a point -to-point cross-QE mesh to hub-and-spoke intake, matching, and routing.

LEGACY MODEL

Point -to-point. Each QE managed its own alerting. QEs forwarded ADT messages to other QEs based on attribution recorded in the statewide MPI —a mesh with limited statewide visibility.

SEAS MODEL

Hub -and -spoke. NYeC receives all ADT messages centrally from regional QEs to the Encounter Gateway — statewide production since Oct 1, 2025 —and routes ADTs to the right SEAS providers via panels or in the Mega Feed.

Modern statewide stack



Statewide MPI

Verato cloud -based referential matching replacing IBM InfoSphere —go -live completed June 2026.



Encounter Gateway

Zen Healthcare hosted gateway.



QE Alerting Apps

- Hixny self-developed alerting.
- HealtheConnections partnership with Point Click Care.

Milestone delivered: Verato sMPI go-live completed June 2026 —legacy UPI and IBM InfoSphere MPI retired.

Handling Sensitive 42 CFR Part 2 Data

Behavioral-health and other Part 2 data flow through SEAS with the right agreements, routing, and consent controls.

QSOA FOUNDATION

Part 2 facilities share data with their QE under a Qualified Service Organization Agreement (QSOA) —provisions already incorporated into the SCPA BAA. No additional agreement is needed to send alerts through the Encounter Gateway.

HUB / ROUTING SERVICE

NYeC operates the Encounter Gateway as a hub/routing service on behalf of the QEs: a statewide Mega Feed to the SEAS QEs—HealtheConnections and Hixny —and gateway routing to non - SEAS QEs with a relationship to the patient.

CONSENT -GATED DELIVERY

Participants receive Part 2 data only with a Part 2-compliant consent —the SHIN-NY consent forms qualify. Events flagged as sensitive, or of uncertain status, are treated as Part 2 out of caution.

Based on NYeC Part 2 FAQ guidance (draft, Nov 2025)

Observations

Old System: Cross QE Forwarding

- Legal underpinning was local HIE participation agreements plus an inter-QE exchange agreement
- Low overhead – used the statewide MPI to attribute a patient to QEs
- We probably could have, with adjustments to the inter-QE exchange agreement, skipped the attribution and simply had receiving QEs send every ADT to every other QE
- In theory allowed for statewide alerting, but in practice alerts from the local QE were better due to data quality

The big strength was achieving statewide capabilities at a low cost and with minimal coordination overhead. But the end-product was underwhelming, and in practice we still had little monopolies in each region.

New System: Encounter Gateway Hub

- Legal underpinning is a Statewide Common Participation Agreement (SCPA)
- Only works because the State is paying regional QEs to collect ADTs
- Provides choices at the application layer, without loss of fidelity between regions
- Better for monitoring statewide data quality and consistency
- Better for secondary use of ADT data, such as for outcome measures in statewide programs
- Better for monitoring system performance and troubleshooting problems

Consider the ADT aggregation to be a Health Data Utility (HDU) function, with a marketplace of alerting providers on top.



NEW YORK eHEALTH
COLLABORATIVE

nyehealth.org

Patient Centered Data Home (PCDH)

David C. Kendrick, MD, MPH

*Chair, Department of Medical Informatics, University of Oklahoma College of Medicine
Strategic Advisor, Civitas Networks for Health*

Event Notifications
enabled by
HIEs and Health Data Utilities
through
Patient Centered Data Home™

Restoring the Commons

David C. Kendrick, MD, MPH
Senior Strategic Advisor, Civitas Networks for Health

Patient-centric Principle of Interoperability

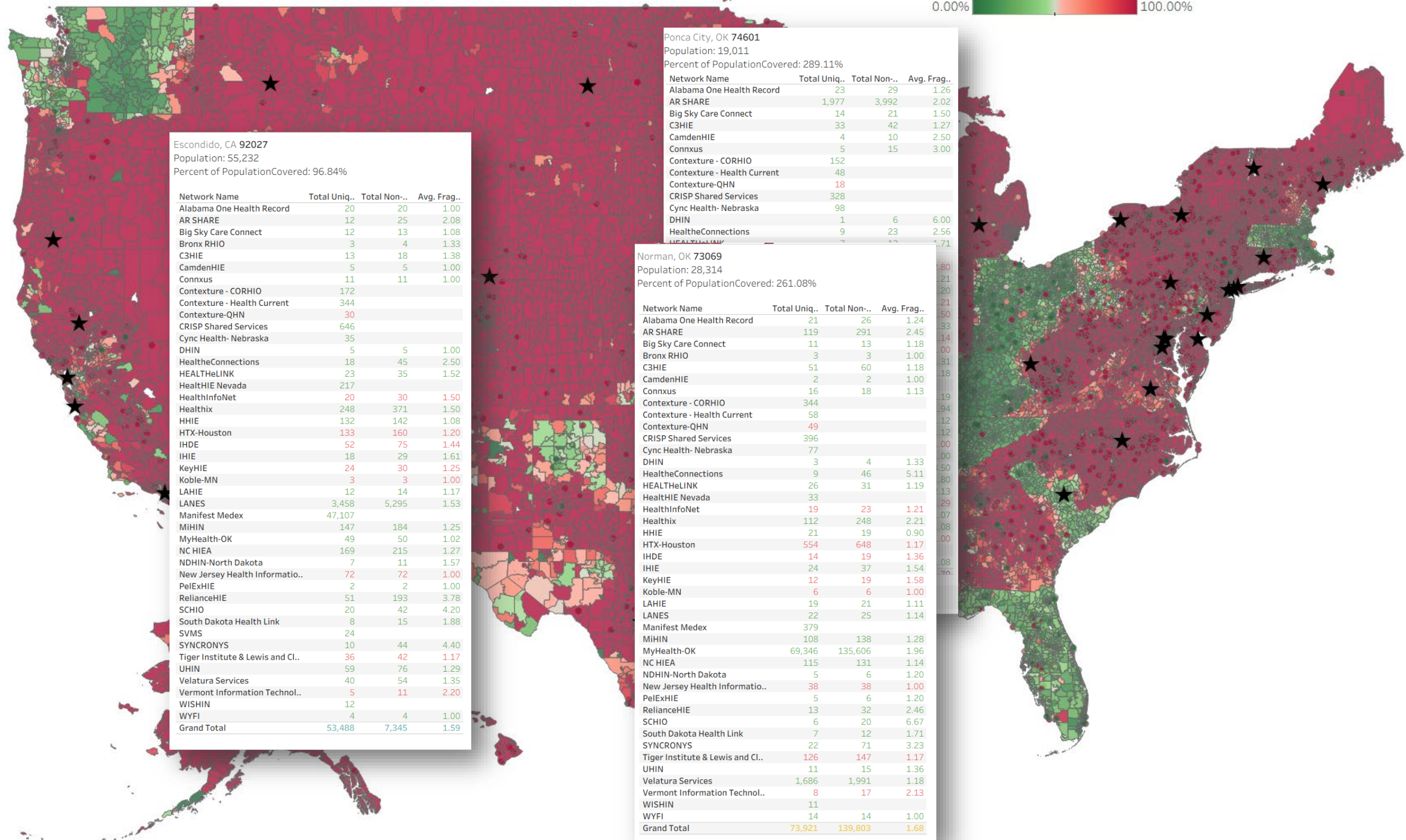
Every patient deserves to have their complete longitudinal health information securely available wherever and whenever needed to support decisions about their care and well-being.

Agenda

- **Overview of PCDH's event notification model** including governance, launch date, current scale, funding model, etc.
- **Key actors within the model**
 - Who contributes events to your environment (e.g., hospitals, SNFs, other providers)
 - Who provides event notification services (i.e., state and regional HIEs) and requirements for participation
 - Who consumes events (e.g., potentially any customer of the recipient HIE)
- **Governance and policy**
 - Who governs how PCDH is used
 - What standards are required of participating HIEs
 - How are these standards enforced
- **The benefits and risks of the model's interstate design and the use of geographic attribution, from the perspective of a statewide service in California**
- **Other key lessons learned, challenges overcome, and recommendations** for any state that is building or expanding its event notification services
- **Future directions or enhancements underway**

Overview: Patient Centered Data Home™

- Founded: 2015
- Participants: State and Regional Health Information Exchanges
- Number of Participants: 40 connecting >200M lives
- Governance:
 - **PCDH Governance Council** with representatives from each regional hub and now individual participants.
 - Civitas staffing support
- Policy:
 - National PCDH Data Exchange Agreement
 - Hub Region Policies can be more expansive but not less
- Funding: \$0- networks and the hubs do not charge for services



Escondido, CA 92027
Population: 55,232
Percent of PopulationCovered: 96.84%

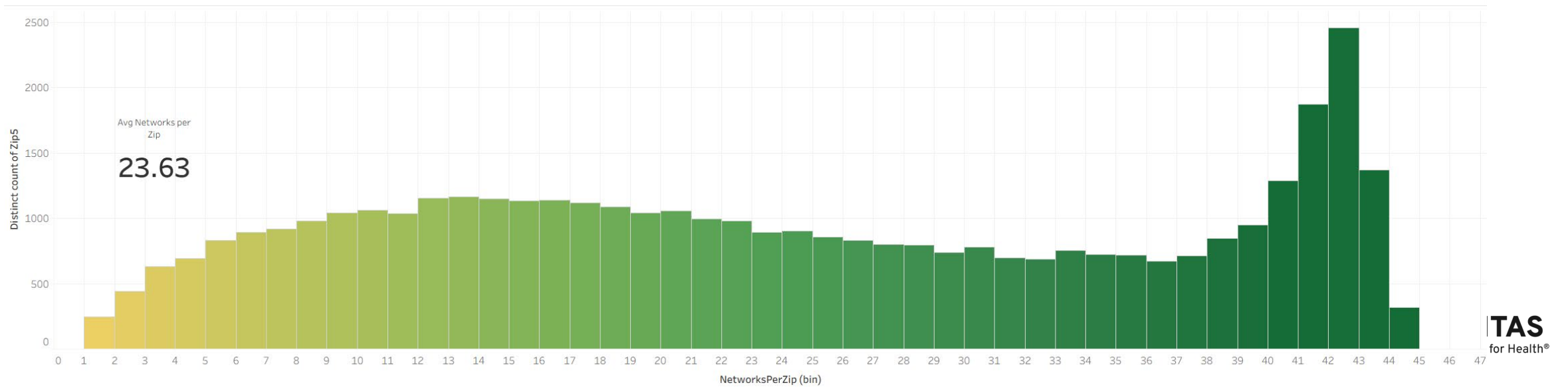
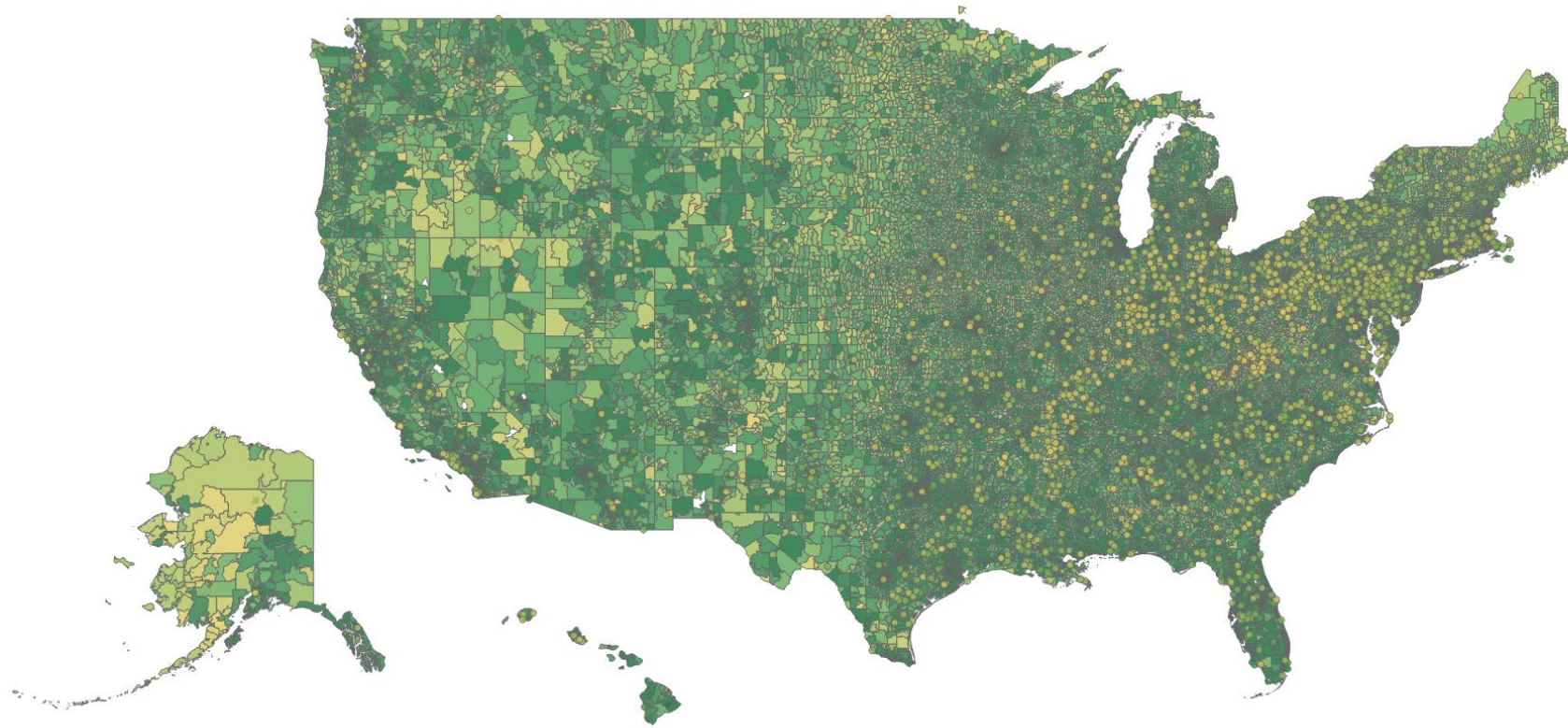
Network Name	Total Uniq..	Total Non-..	Avg. Frag..
Alabama One Health Record	20	20	1.00
AR SHARE	12	25	2.08
Big Sky Care Connect	12	13	1.08
Bronx RHIO	3	4	1.33
C3HIE	13	18	1.38
CamdenHIE	5	5	1.00
Connxus	11	11	1.00
Contexture - CORHIO	172		
Contexture - Health Current	344		
Contexture-QHN	30		
CRISP Shared Services	646		
Cync Health- Nebraska	35		
DHIN	5	5	1.00
HealtheConnections	18	45	2.50
HEALTHeLINK	23	35	1.52
HealthIE Nevada	217		
HealthInfoNet	20	30	1.50
Healthix	248	371	1.50
HHIE	132	142	1.08
HTX-Houston	133	160	1.20
IHDE	52	75	1.44
IHIE	18	29	1.61
KeyHIE	24	30	1.25
Koble-MN	3	3	1.00
LAHIE	12	14	1.17
LANES	3,458	5,295	1.53
Manifest Medex	47,107		
MiHIN	147	184	1.25
MyHealth-OK	49	50	1.02
NC HIEA	169	215	1.27
NDHIN-North Dakota	7	11	1.57
New Jersey Health Informatio..	72	72	1.00
PeIExHIE	2	2	1.00
RelianceHIE	51	193	3.78
SCHIO	20	42	4.20
South Dakota Health Link	8	15	1.88
SVMS	24		
SYNCRONYS	10	44	4.40
Tiger Institute & Lewis and Cl..	36	42	1.17
UHIN	59	76	1.29
Velatura Services	40	54	1.35
Vermont Information Technol..	5	11	2.20
WISHIN	12		
WYFI	4	4	1.00
Grand Total	53,488	7,345	1.59

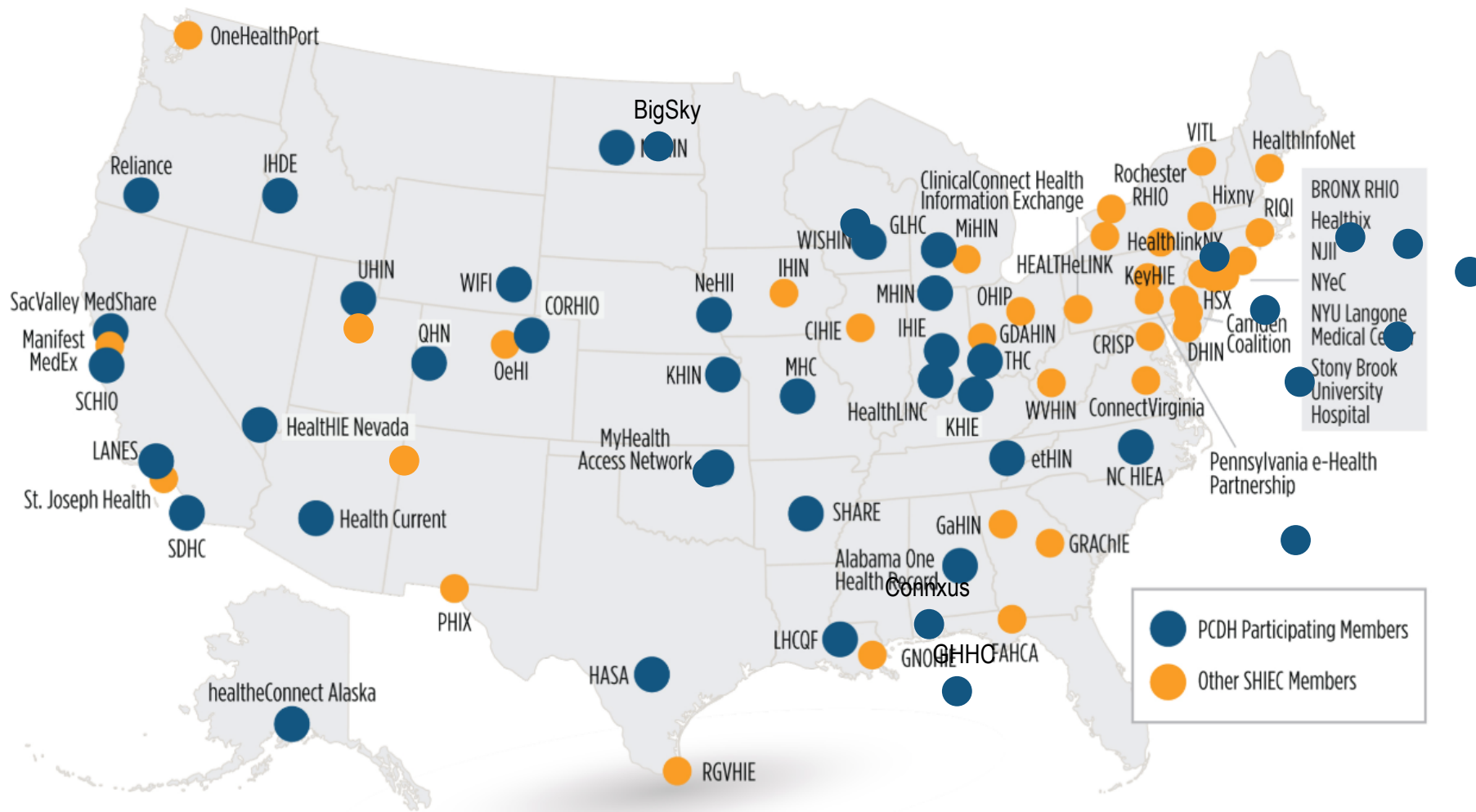
Ponca City, OK 74601
Population: 19,011
Percent of PopulationCovered: 289.11%

Network Name	Total Uniq..	Total Non-..	Avg. Frag..
Alabama One Health Record	23	29	1.26
AR SHARE	1,977	3,992	2.02
Big Sky Care Connect	14	21	1.50
C3HIE	33	42	1.27
CamdenHIE	4	10	2.50
Connxus	5	15	3.00
Contexture - CORHIO	152		
Contexture - Health Current	48		
Contexture-QHN	18		
CRISP Shared Services	328		
Cync Health- Nebraska	98		
DHIN	1	6	6.00
HealtheConnections	9	23	2.56
HEALTHeLINK	7	12	1.71

Norman, OK 73069
Population: 28,314
Percent of PopulationCovered: 261.08%

Network Name	Total Uniq..	Total Non-..	Avg. Frag..
Alabama One Health Record	21	26	1.24
AR SHARE	119	291	2.45
Big Sky Care Connect	11	13	1.18
Bronx RHIO	3	3	1.00
C3HIE	51	60	1.18
CamdenHIE	2	2	1.00
Connxus	16	18	1.13
Contexture - CORHIO	344		
Contexture - Health Current	58		
Contexture-QHN	49		
CRISP Shared Services	396		
Cync Health- Nebraska	77		
DHIN	3	4	1.33
HealtheConnections	9	46	5.11
HEALTHeLINK	26	31	1.19
HealthIE Nevada	33		
HealthInfoNet	19	23	1.21
Healthix	112	248	2.21
HHIE	21	19	0.90
HTX-Houston	554	648	1.17
IHDE	14	19	1.36
IHIE	24	37	1.54
KeyHIE	12	19	1.58
Koble-MN	6	6	1.00
LAHIE	19	21	1.11
LANES	22	25	1.14
Manifest Medex	379		
MiHIN	108	138	1.28
MyHealth-OK	69,346	135,606	1.96
NC HIEA	115	131	1.14
NDHIN-North Dakota	5	6	1.20
New Jersey Health Informatio..	38	38	1.00
PeIExHIE	5	6	1.20
RelianceHIE	13	32	2.46
SCHIO	6	20	6.67
South Dakota Health Link	7	12	1.71
SYNCRONYS	22	71	3.23
Tiger Institute & Lewis and Cl..	126	147	1.17
UHIN	11	15	1.36
Velatura Services	1,686	1,991	1.18
Vermont Information Technol..	8	17	2.13
WISHIN	11		
WYFI	14	14	1.00
Grand Total	73,921	139,803	1.68

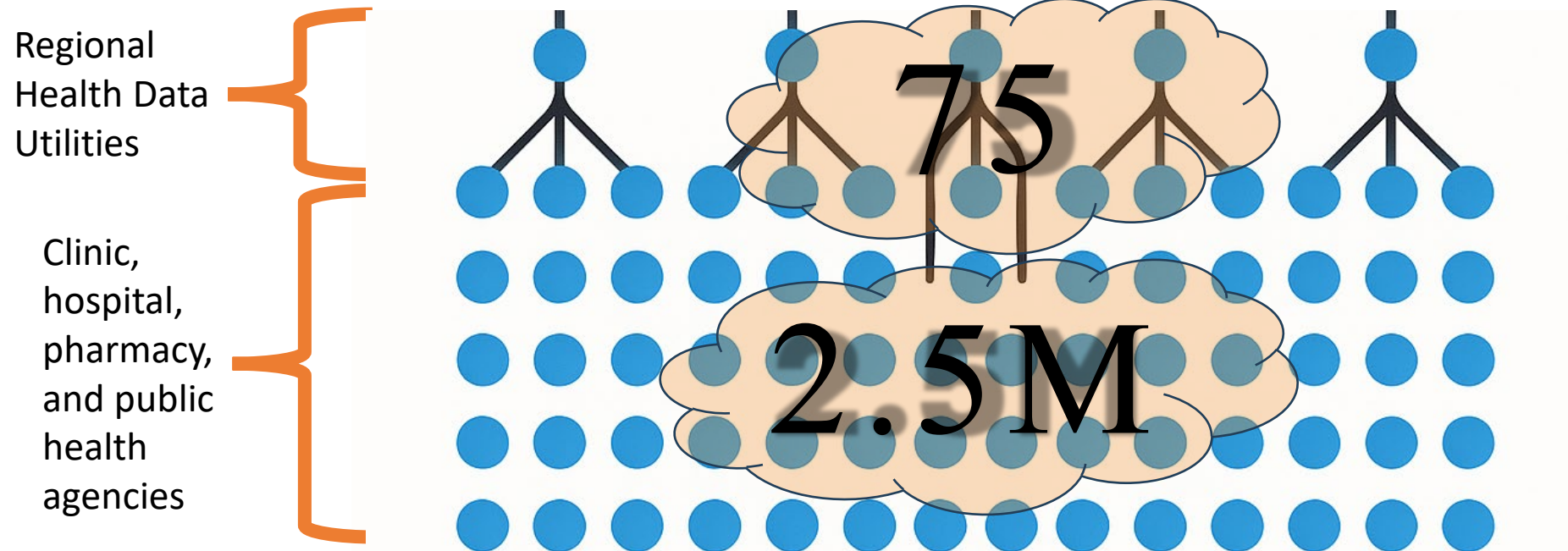


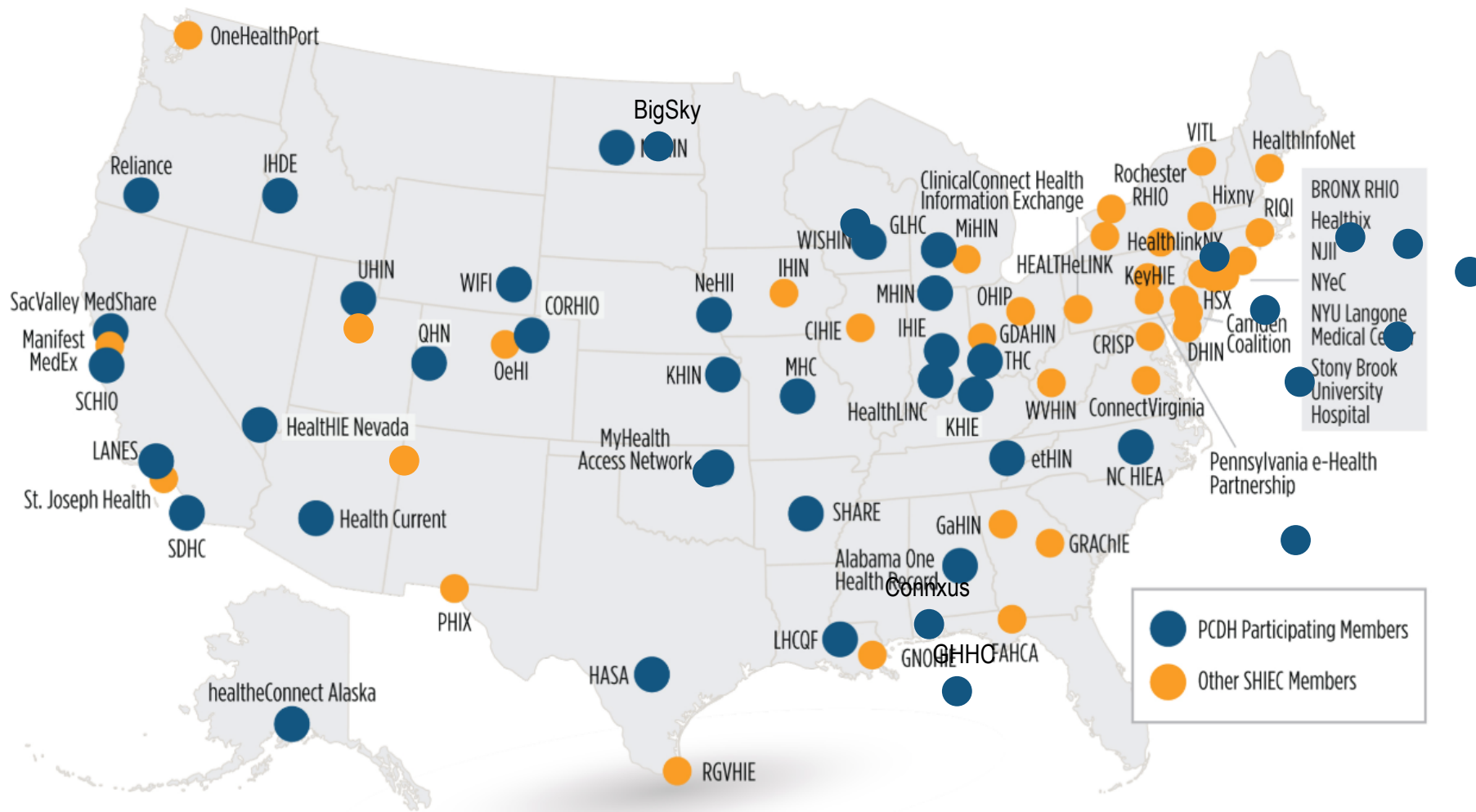


How does this model scale nationwide?

Interoperability math

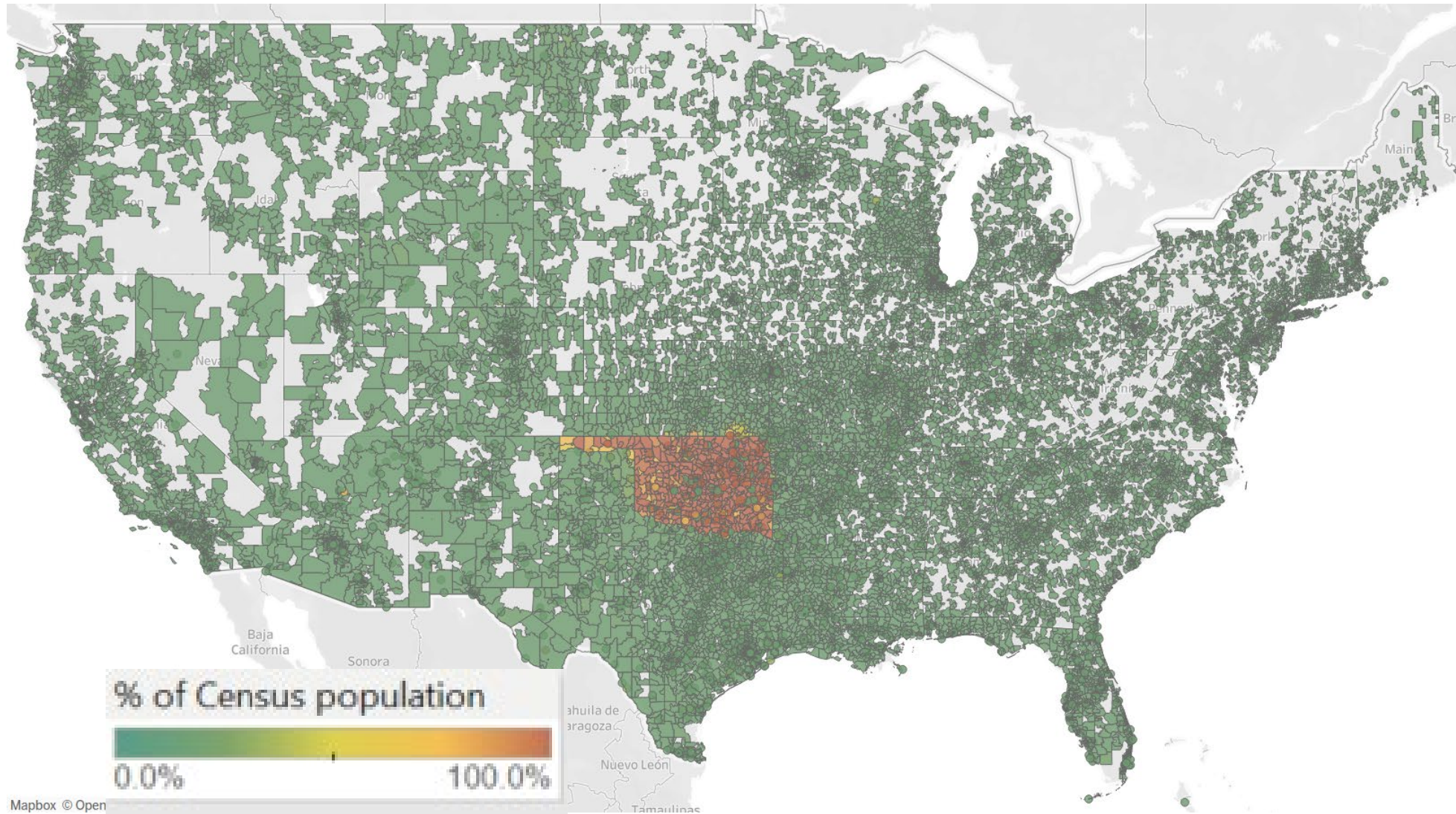
-2015





How does this model scale nationwide?

MyHealth Patient Population



Member Population: Contexture

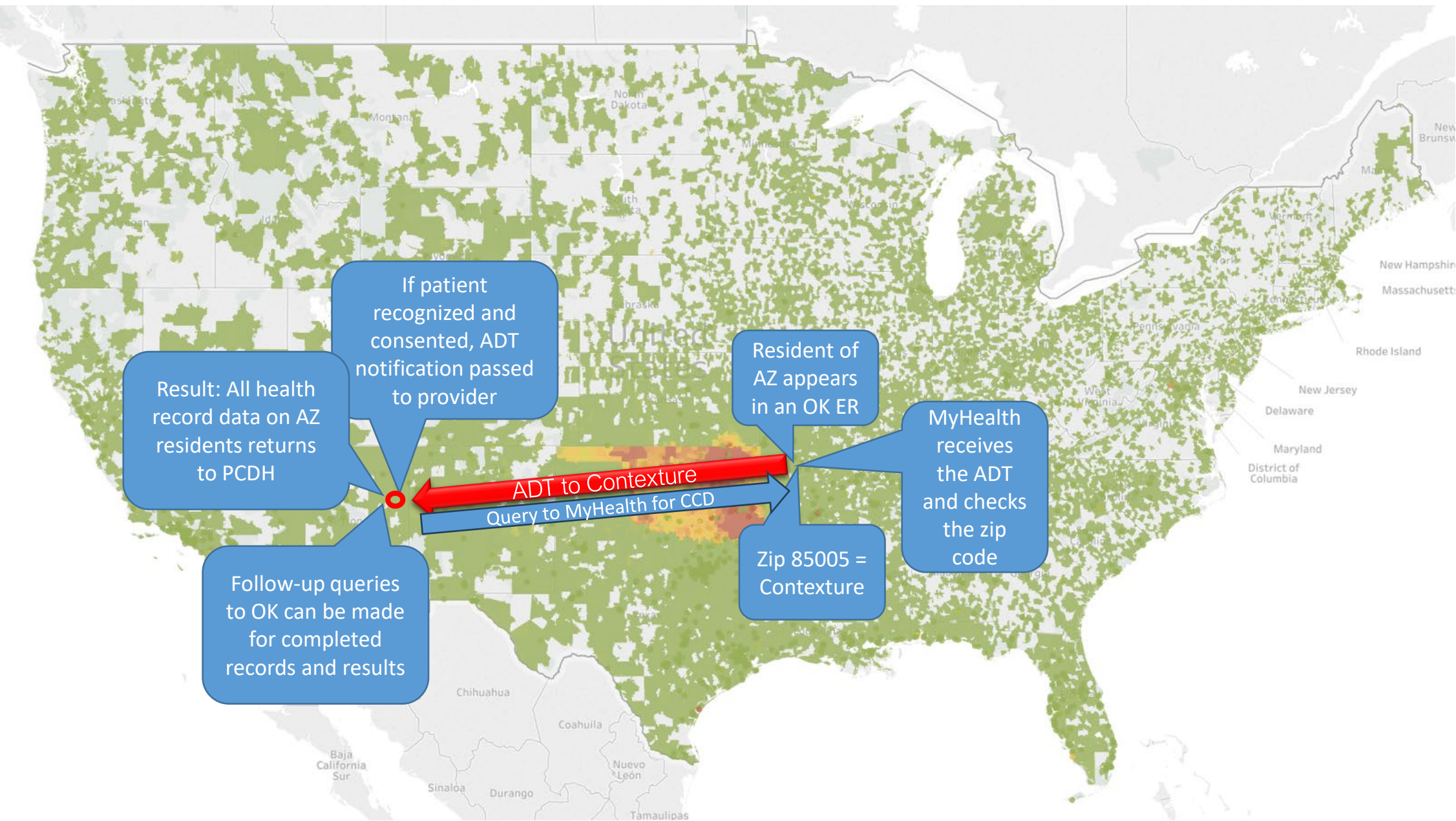


Member Population: Contexture

The map displays the geographical distribution of member populations across the United States. The color intensity represents population density, with red indicating the highest concentration and green indicating the lowest. A prominent area of high density (red/orange) is located in the southwestern United States, specifically in California and Arizona. The majority of the rest of the country is shown in green, suggesting a more dispersed population. State names are labeled throughout the map, including California, Texas, New York, and others.

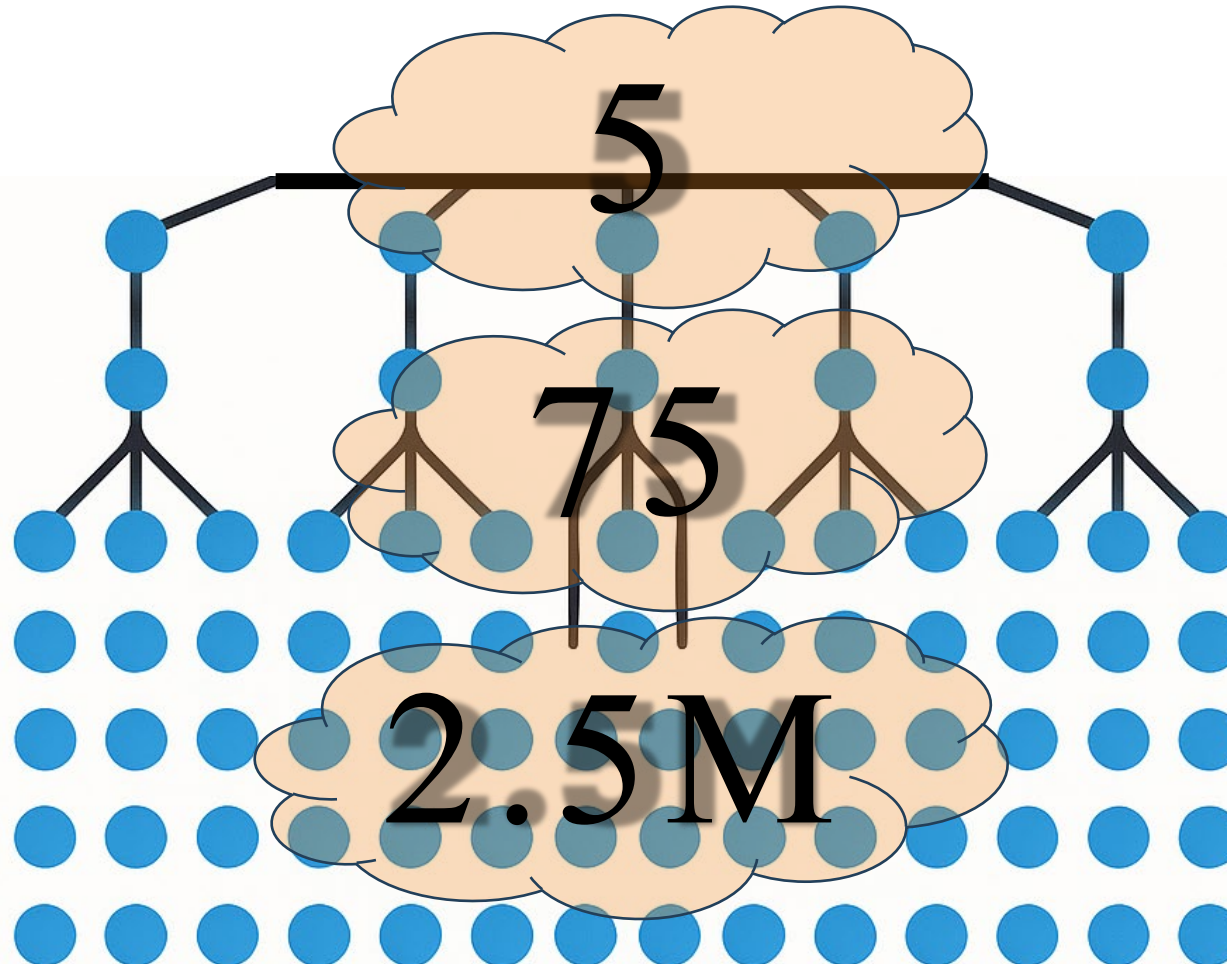
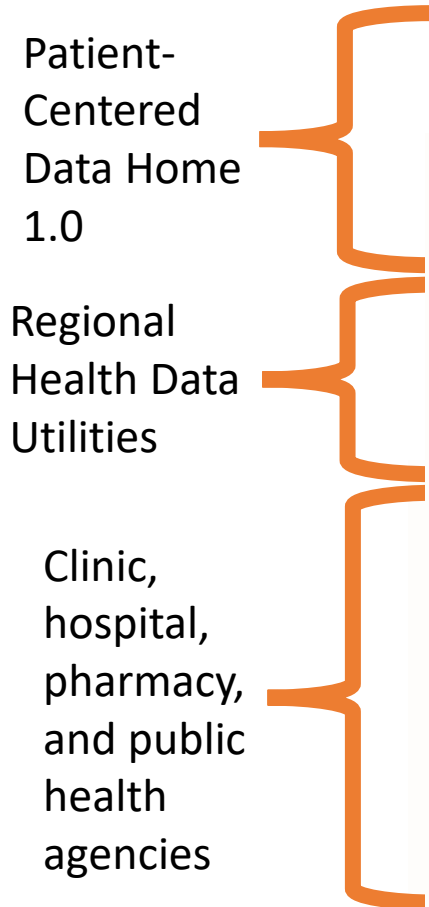
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Networks for Health®

Patient Centered Data Home™

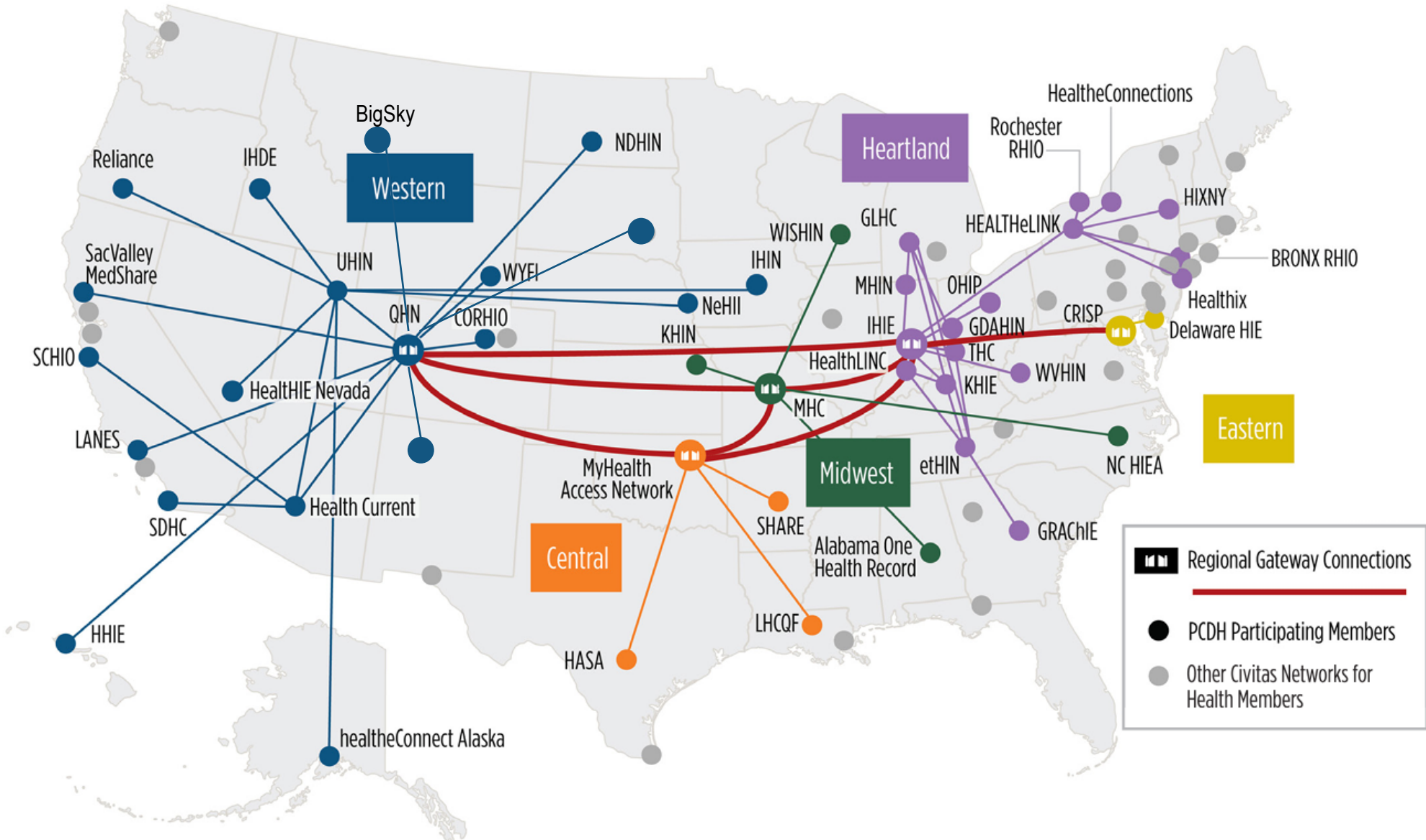


Interoperability math

2016-2025



Patient Centered Data Home™ rapid growth

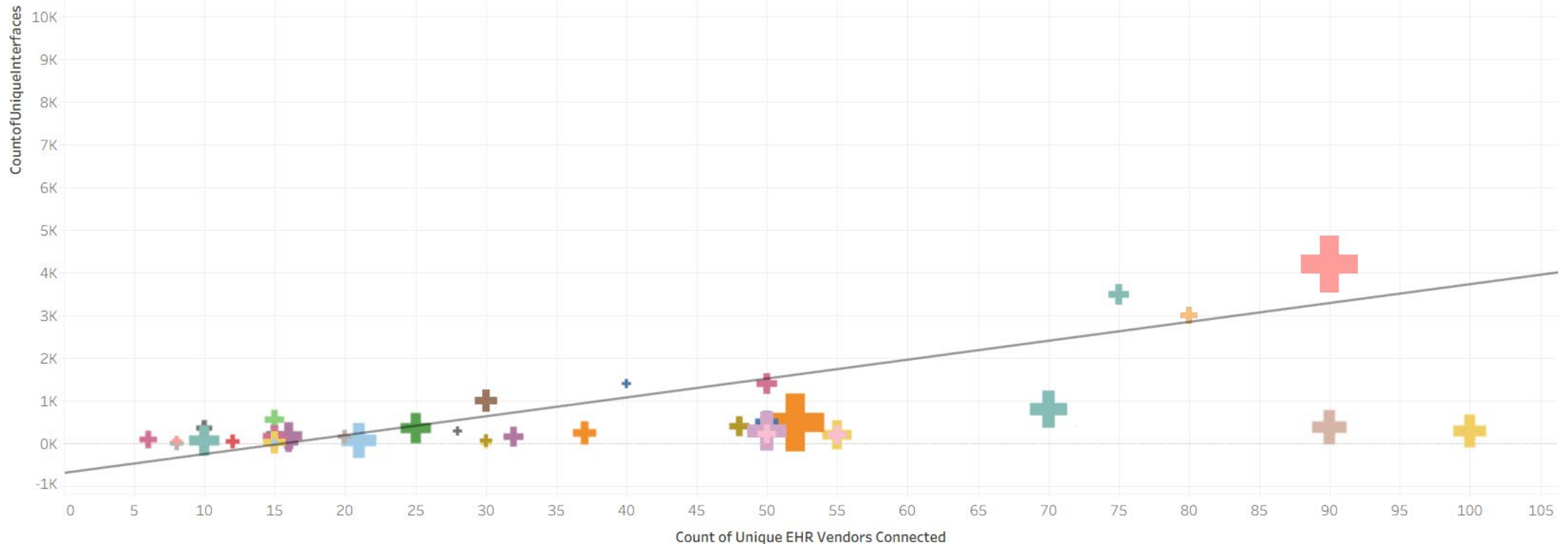


Key Actors: Nearly Every Health & Wellness Stakeholder

- Deliver Care & Services (Produce & Consume events)
 - Providers: Health Systems & Hospitals, Providers of all types, FQHCs, Community Health Centers, VA, DoD, Tribal
 - Public Health Authorities: State, Territorial, Local, Tribal
 - Community Benefit Organizations: Social services, Non-medical services
- Pay for Care & Services (Consume events)
 - Health Plans: Commercial, Advantage, Managed Care, etc.
 - Agencies: Medicaid, Public Health, Human Services, Tribal, etc.
- Receive Care & Services (Consume events)
 - Patients: HIEs offer patient portal access, individual access support

Unique EHR Vendors vs. Total Connections

45,824 clinical connections



Data Types Exchanged by HIO Network

[illegible]

Governance & Policy

- PCDH Governance Council:
 - 4 Hub representatives (1 Representative from each Hub)
 - 5 At-large network representatives
- Policies:
 - Master National Collaboration Agreement
 - Regional Access Policies
- Standards:
 - Tier 1: ADT message from the Away HIE, indicating that a patient from the Home HIE is receiving treatment (Confirmed)
 - Tier 2: ADT message from the Home HIE, providing a short-term synchronization of patient identifiers (Confirmed)
 - Tier 3: MDM message from the Home HIE, providing a medical history in CCD form for the patient (In development)
 - Tier 4: MDM message from the Away HIE, providing an encounter summary of the patient's visit (In development)
- Enforcement:
 - Live monitoring dashboards in design for deployment by September

Risks of Interstate Routing with Geographic Attribution to HIE

Risk	Mitigation
Data breach	Thin architecture, data only at rest in HIEs, each HIE insured, most are HiTrust certified
Bad actor	All users accessing data are already vetted HIE participants
Misrepresentation of patient relationship	HIE vets all users and manages all access
Injection of Bad Data	No incentive, all data sources are peer HIEs
Violations of State Law	HIE enforces state & local laws
Violations of Patient Consent	HIE honors patient consent
HIE claims geography they do not serve	Transparent data reporting on population coverage & Governance decisions

Benefits of Interstate Routing with Geographic Attribution to HIE

Benefit	Implications
HIE Networks enforce State laws & Policies	Protect data sources & recipients and patients
Patient Consent honored	Patient trust earned
Many Use Cases/Purposes of Use supported	Not limited to Treatment
Near-real time alerting	Use cases are numerous for coordinating care and services
Defers to HIEs for most of infrastructure	Lightweight technology layer requires minimal maintenance and expense
Low/No cost	All HIEs can afford to participate
Keeps every patients' record whole	Innumerable benefits for high quality care, cost efficiency, public health, research, etc.
Low complexity	Low downtime, low staff skill requirements
Functions well within States, among States, and among Nations	Scalable to any geography
10 years of active interoperability, hundreds of millions of alerts delivered	Proof
Zero data breaches, security incidents, or lawsuits	Trust

Lessons Learned

- Health data is more fragmented than almost anyone understands
- Value of PCDH is not perceived the same by all:
 - Network operator vs. Hospital administrator vs. Clinician vs. Patient
- The right architecture enables the right thing to happen by default
 - And prevents the wrong thing from happening
- Trust is the essential ingredient of successful governance
 - Assuming positive intent is critical
- Health data is perhaps the most valuable asset on earth— patients and their communities should control its distribution and use (and benefit from it where appropriate)

Future Direction and Enhancements

- PCDH Governance expanded
 - Considering incorporation and sustainability models
- PCDH 2.0 in planning, and could include:
 - Data routing beyond HIE's to national stakeholders
 - Ability to import and enforce Patient Attribution
 - National Record Locator Service (10 years of history already in audit logs)
 - FHIR API Repository
 - Data quality and Service Level Agreements
 - National FHIR API

Interoperability math

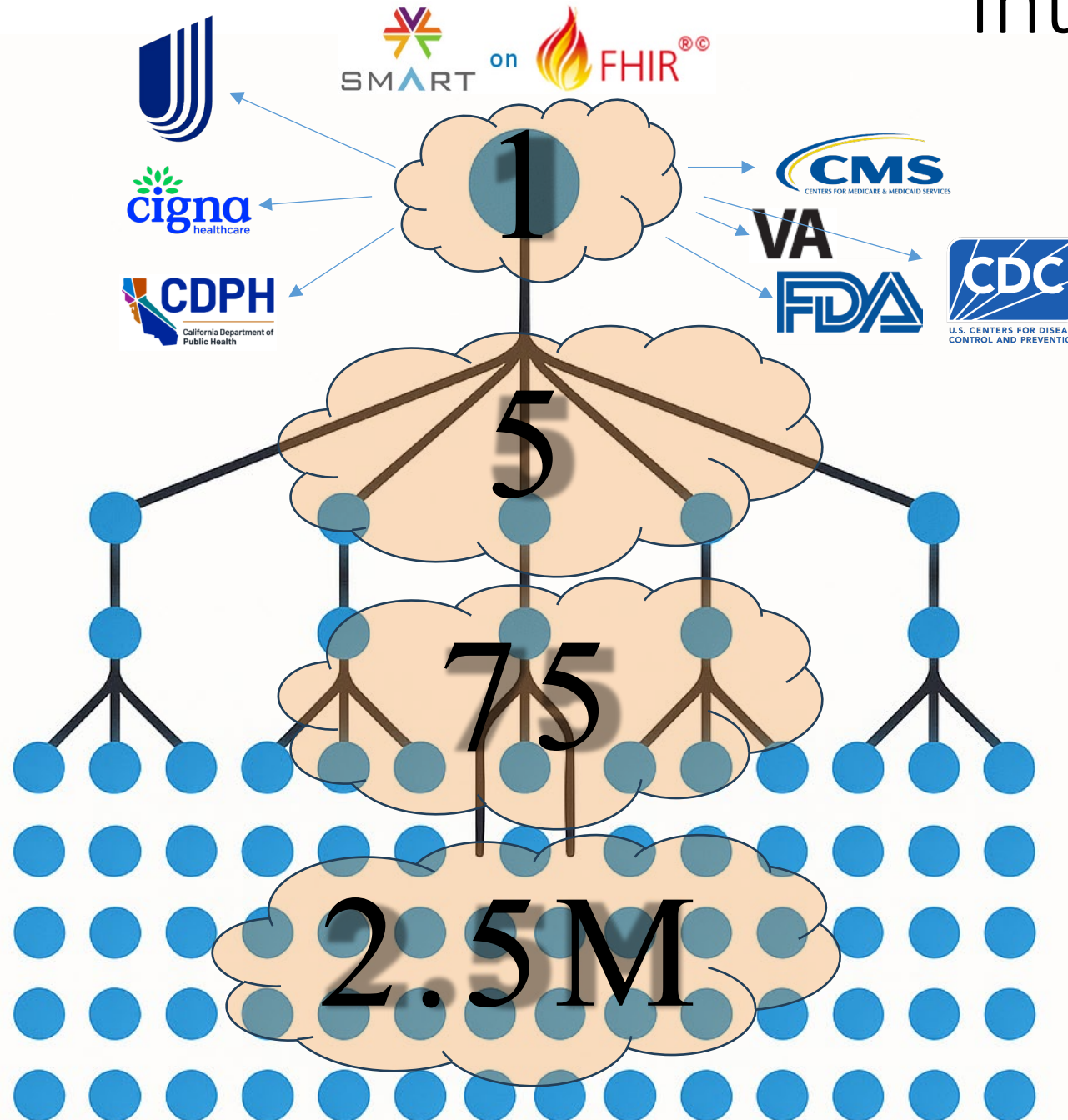
2026-

Patient-
Centered
Data Home
2.0

Patient-
Centered
Data Home
1.0

Regional
Health Data
Utilities

Clinic,
hospital,
pharmacy,
and public
health
agencies



Questions?

David-Kendrick@ou.edu

<https://civitasforhealth.org/patient-centered-data-home/>

Question & Answer





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