CHCANYS NYS-HCCN presents

The Road to Interoperability: Connecting Data, Patients, and Policies

Day 5 - CDC's Data Modernization Initiative

January 23, 2023

For more information, please email Anita Li at ali@CHCANYS.org

Zoom Guidelines

- You have been muted upon entry. Please respect our presenters and stay on mute if you are not speaking.

- Please share your questions in the chat. CHCANYS staff will raise your questions to our speakers and follow up as needed if there are unanswered questions.

- The webinar is being recorded.

- Slides and recording links will be sent following the event.

Agenda

- Welcome

- Data Modernization Initiative & Electronic Case reporting
  - National Efforts
  - New York State Efforts

Schedule of Events

Day 1 (1/17)

- National Perspective on Interoperability

Day 2 (1/18)

- State Perspective on Interoperability

Day 3 (1/19)

- Patient Data
  - RPM
  - Patient Matching

Day 4 (1/20)

- Health Equity & Interoperability
- Open Forum: SDOH

Day 5 (1/23)

- **National Data Modernization Initiative**
- **Open Forum: RPM**

COMMUNITY HEALTH CARE ASSOCIATION of New York State chcanys.org

Data Modernization: Transforming Public Health Data, Systems, & Processes

Jennifer Layden, MD, PhD
Acting Deputy Director for Public Health Science and Surveillance

CHCANYS
January 23, 2023

Data Modernization Initiative?

CDC is at the heart of a national effort to create **modern, integrated, and real-time public health data and surveillance** that can protect us from any health threat.

DMI
@ CDC

Our Ultimate Goal

To move from siloed and brittle public health data systems to connected, resilient, adaptable, and sustainable **'response-ready'** systems that can help us solve problems before they happen and reduce the harm caused by the problems that do happen.

Better, Faster, Actionable Insights for Decision-Making

DMI
@ CDC

Problems we are trying to solve - current state

Siloed information
Disconnected and/or proprietary systems driven by disease-specific budget lines keep us from seeing the complete picture
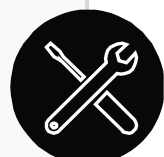
Systems not response ready
Most systems at health departments are not flexible, do not use cloud, and are not scalable.

Outdated skills
The public health workforce needs training to use today's technologies more effectively

Patchwork of policies
The variable landscape of data collection and reporting across the nation complicates rapid response to emerging threats

Heavy burdens for providers
Providers in healthcare and at health departments are burdened with sending data to many places in many ways

Public health not in healthcare data ecosystem
Public health got left behind as federal incentives and regulations helped healthcare systems to easily share data automatically in the Electronic Health Record.

Data not shared quickly
The combined effects of siloed systems, burdensome processes, and the disconnect with healthcare data limit public health's ability to move data in a timely manner.
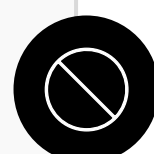
Inconsistent access to data
Disconnected systems and the patchwork of policies lead to inconsistent data access across public health jurisdictions and with the public.

Priorities and Opportunities for 2023

- Prioritize building response ready case and lab data systems to get data quickly and reliably

- Increase collaboration and data sharing with public health and private partners

- Invest in open data products for the public

- Establish and piloting public health use cases with TEFCA and QHINs

- Automate lab data exchange (ELR and ETOR)

- Develop and adopt of CDC Front Door

Phases of DMI strategic roadmap

Phase 1: Lay the groundwork

Established the DMI program, data exchange, visualization and foundational cloud computing capabilities; designed North Star Architecture, established DMI consortium

Phase 2: Adopt standards and establish impact

Drive to response-readiness and public health impact; includes use case delivery, adopt enterprise decisions, building core DMI capabilities, change management, adopting interoperability standards, establishing public health (PH) system certification

Today

Phase 3: Expand foundation for broader impact

Build on Phase 2 outcomes to build capabilities across US PH ecosystem and grow impact through activating further use cases

Phase 4: Improve ecosystem continuously

Establish 'flywheel' of public health-driven use cases, maintain and evolve externally provided capabilities and internal architecture

How can we modernize faster, more efficiently, and equitably?

DATA and TECHNOLOGY

Modernization means **reimagining what data can do** — and **what we can do with data and technology**.

It means creating a shared, common infrastructure to deliver high-quality, real-time information for public health decisions.

CORE SURVEILLANCE CAPABILITIES
- Case reporting
- Laboratory tests
- Deaths
- Notifiable diseases
- Emergency visits
- Immunizations

RESPONSE-READY DATA
- Common operating picture
- Forecasting & analytics
- Scalable outbreak response

REIMAGINED SYSTEMS
- Response ready systems that are delivered iteratively
- Always on systems that use DevOps best practices
- Invest in data as a product

NON-INFECTIOUS DISEASES AND CONDITIONS
- Accelerated Modernization Pilot Initiative

HEALTH EQUITY
- Race, ethnicity, and other demographic data
- Social Determinants of Health

PEOPLE

Modernization is about partnership and connection points.

It's about giving people the skills, tools, access, and support they need.

Ultimately, it's about **helping the people we serve.**

PARTNERSHIPS
- Consortium for Data Modernization
- CDC Foundation Listening Sessions
- Data and Surveillance Workgroup

TOOLS AND SKILLS
- Training and upskilling
- Technical support
- New hiring processes and mechanisms

CONNECTION POINTS
- CDC Implementation Teams
- CSTE S/I committee
- Communities of Practice (NVSS, NSSP)
- Public Health FHIR® Accelerators
- PHII Learning community

LOCAL DECISIONS
- More granular data
- Individual/family decisions

POLICY

Modernization relies on **getting data where it needs to go** to protect health.

We need to ensure the right policies, authorities, data use agreements, and relationships are in place to support **modern data exchange.**

INTEROPERABILITY AND SHARING
- USCDI+
- TEFCA
- Data Use Agreements
- Open data policies
- Data standards (FHIR)

FEDERAL POLICIES
- Evidence Act
- 21st Century Cures Act
- Federal Data Strategy
- FITARA
- Presidential Executive Orders

DATA AUTHORITIES
- ONC regulations
- CMS regulations
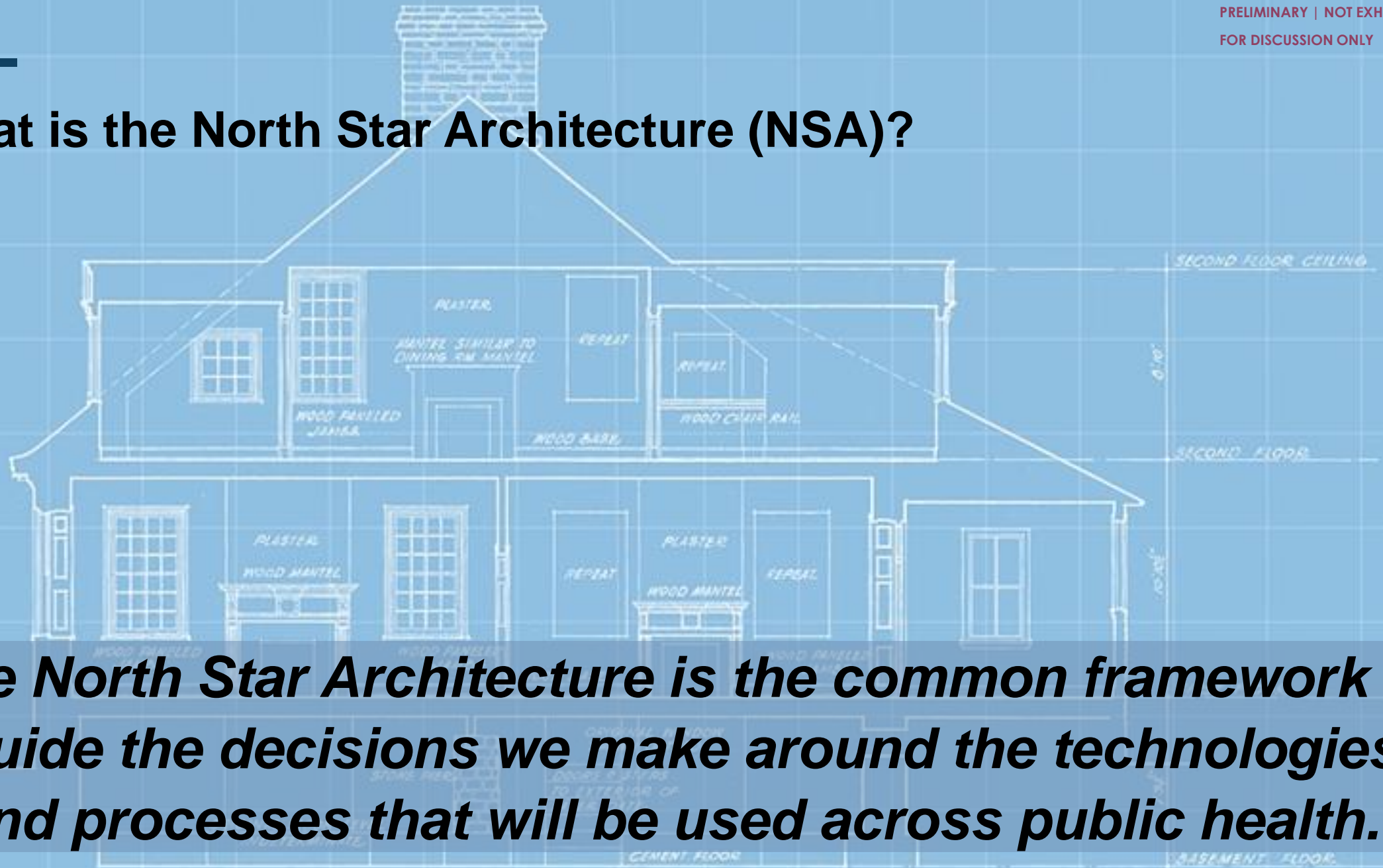- Public Health Emergency Declarations

GOVERNANCE
- CDC's IT and Data Governance board
- State and local governance

We need to know where we are going.
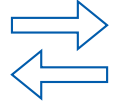
What is the North Star Architecture (NSA)?

The North Star Architecture is the common framework to guide the decisions we make around the technologies and processes that will be used across public health.

# North Star Architecture: Objectives and key features

Objectives

Reduce burden and friction of exchanging data between public health departments and with CDC

Reduce complexity of managing data lifecycle for STLTs to create more focus for public health activities

Remove siloes and ensure a scalable, response-ready system across public health departments and within CDC
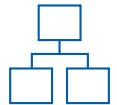
Get relevant, structured data quickly from healthcare delivery endpoints and ensure timely access to insights

Be responsive to modernization needs across the public health ecosystem

Key features

Flexible, standardized and replicable tools that meet users where they are – including different levels of capabilities

Secure cloud environment that offers more efficient, scalable sharing of data, infrastructure, applications and tooling

End-to-end enterprise approaches to ingest, share, analyze, disseminate data

Offers a **range of support levels to STLT partners** to increase adoption – centrally hosted, hybrid, locally hosted

CDC-STLT participatory governance and stakeholder-centric design and development

Capabilities built over DMI Strategic Roadmap phases support the North Star Architecture (NSA) objectives and key features

North Star Architecture

Benefits for different groups

State, Tribal, Local, Territorial Health Departments	Data Providers	CDC Programs
✓ Easier collection and sharing of data with public health partners and CDC	✓ Easier data sharing with STLTs and CDC, including simpler more automated methods to comply with regulations	✓ Better tools to collect data efficiently
✓ Easier and faster processes to use data for public health action		✓ More reusable technological components to enable consistent data processing and analytics, reduced data duplication, and more time to serve public health needs
✓ Faster response time using fewer resources and less intensity		✓ Clear guidance to help direct decisions about IT and data systems and processes

Read more about North Star Architecture:
https://www.cdc.gov/surveillance/data-modernization/technologies/north-star-architecture.html

Engage with us!

Add your name to our user panel.

- Email dmibuildingblocks@cdc.gov

Tell us your stories.

- Email dmi@cdc.gov with the subject line "ATTN: Stories from the field"

Contact us
dmi@cdc.gov

Visit our website
www.cdc.gov/surveillance/
data-modernization/index.html

Introduction

- Timely and complete patient data is critical for public health surveillance and response during routine and emergency times

- Reporting of conditions of public health significance is required in all U.S. states and territories

- There are currently over 170 conditions that can be reported using eCR to any given public health jurisdiction, including:
  - **infectious diseases** such as COVID-19
  - **foodborne illnesses** such as salmonellosis
  - **noninfectious conditions** such as Parkinson's disease

What is Electronic Case Reporting (eCR)?

The **automated generation** and transmission of case reports from the electronic health record (EHR) to public health agencies for review and action

How Does eCR Work?

HOW DOES ELECTRONIC CASE REPORTING (eCR) WORK?

Patient is diagnosed with a reportable condition, such as COVID-19

Healthcare provider enters patient's information into the electronic health record (EHR)

Data in the EHR automatically triggers a case report that is validated and sent to the appropriate public health agency if it meets reportability criteria

The public health agency receives the case report in real time and a response about reportability is sent back to the provider

State or local health department reaches out to patient for contact tracing, services, or other public health action

cdc.gov/eCR

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eCR is a Key Component in Case Surveillance

Case Reporting

Case Notification

Hospitals

Healthcare Providers

Electronic Case Reporting (eCR)

State, Tribal, Local, and Territorial Public Health Agencies

eCR

Infrastructure
Shared Services Tools
APHL AIMS Platform

CDC
National Notifiable Diseases
Surveillance System (NNDSS)

U.S. Centers for Disease Control and Prevention

Public health events of international concern

World Health Organization

Identified Data

Based on state reportable conditions

Anonymized Data

Based on nationally notifiable conditions
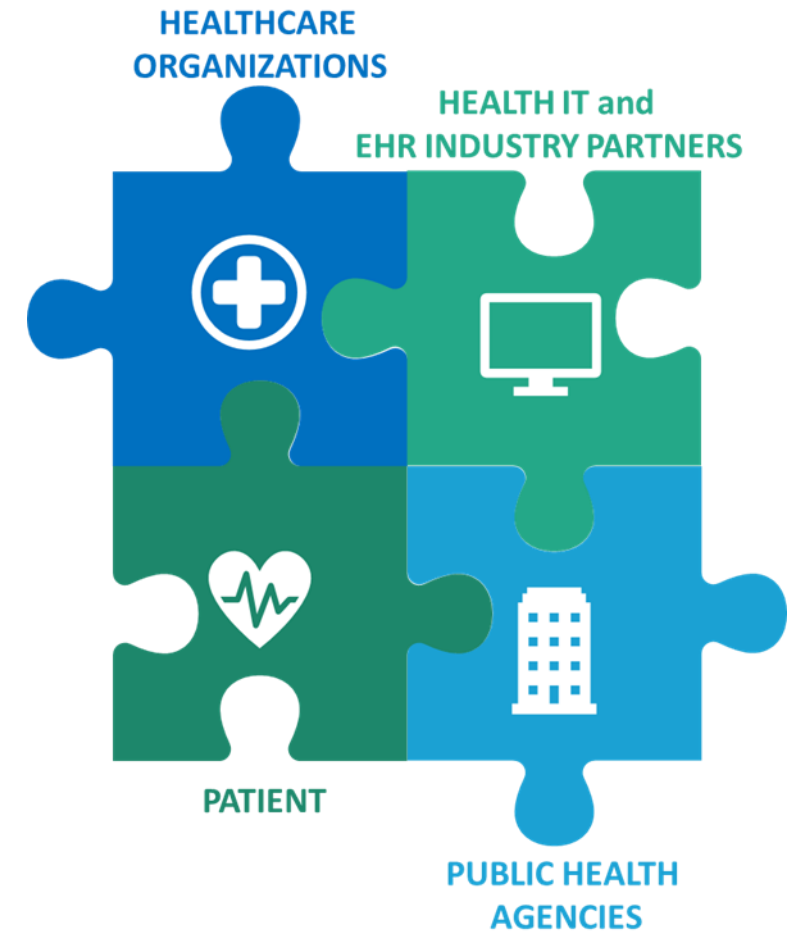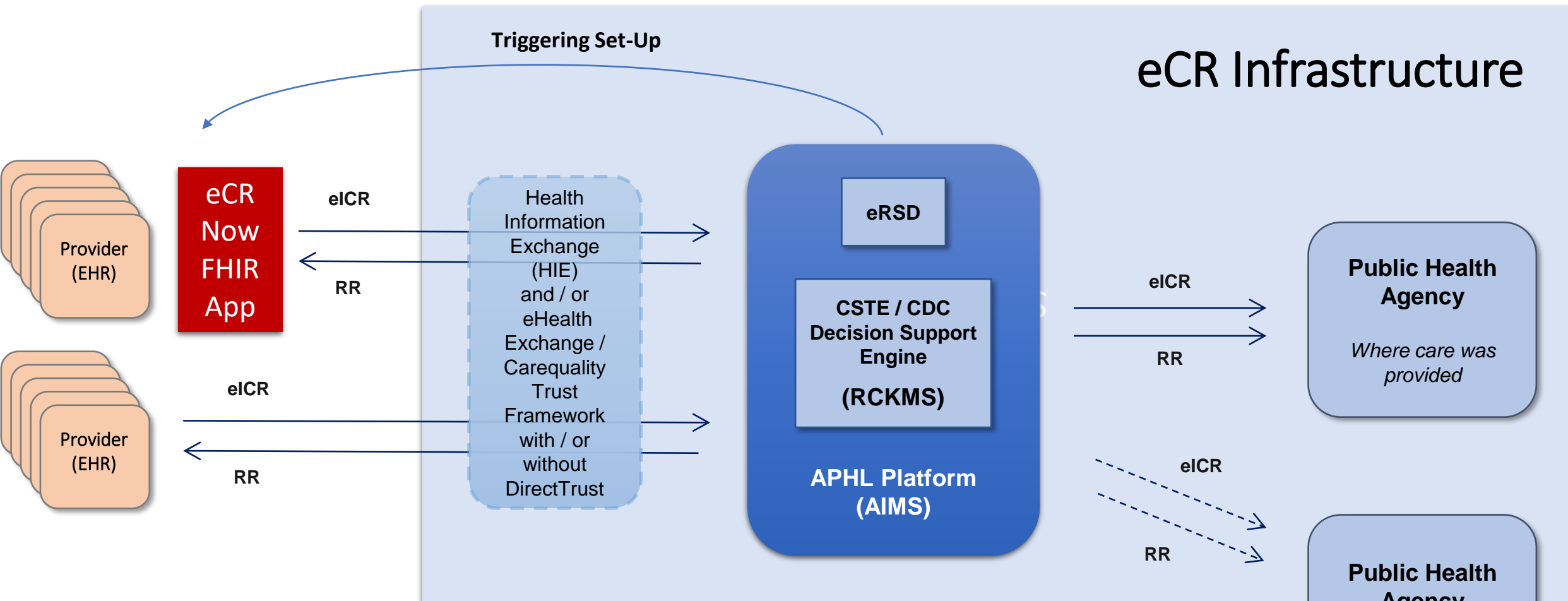
Nationwide eCR Scale-Up: Putting the Pieces Together

Bringing eCR to scale requires aligning efforts of three collaborators:

- Public health agencies

- Health IT and EHR industry partners

- Healthcare organizations

eCR Infrastructure

Triggering Set-Up

Provider (EHR)

eCR Now FHIR App

eICR

RR

eICR

RR

Health Information Exchange (HIE) and / or eHealth Exchange / Carequality Trust Framework with / or without DirectTrust

eRSD

CSTE / CDC Decision Support Engine (RCKMS)

APHL Platform (AIMS)

eICR

RR

eICR

RR

Public Health Agency

Where care was provided

Public Health Agency

Patient residence

Terms

RCKMS - Reportable Condition Knowledge Management System

eRSD – Electronic Reporting and Surveillance Distribution System

Possible Policy Agreements

eHealth Exchange, Carequality, CommonWell, APHL participation agreement

HL7 Standards

eICR - Electronic Initial Case Report CDA v1.1

RR - Reportability Response CDA v1.0

Source: eCR Team

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Electronic Initial Case Report (eICR)

- Uses HL7 CDA-based document or FHIR.
- Includes CSTE-identified data elements necessary for public health to initiate a case investigation.
- Currently implemented: the CDA eICR R1.1 Implementation Guide was published in January 2017.
  - FHIR eCR IG was published in January 2020.
  - CDA Release 2.0 was published in January 2020.
  - Based on COVID lessons, IG was updated in HL7 Jan 2021 ballot cycle. Released 3.1 in July 2022

Healthcare Provider eCR Benefits

Reduces burden without disrupting the clinical workflow

Saves time by eliminating manual data entry and reporting

Fulfills legal reporting requirements

Streamlines jurisdiction reporting challenges

Can be implemented for all reportable conditions

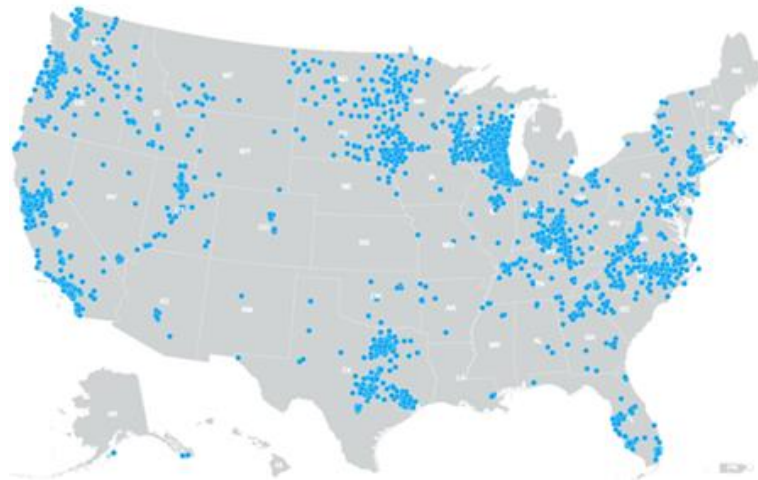Receives information back from public health associated with the reportable condition

Fulfills the CMS Promoting Interoperability Program requirement for eCR
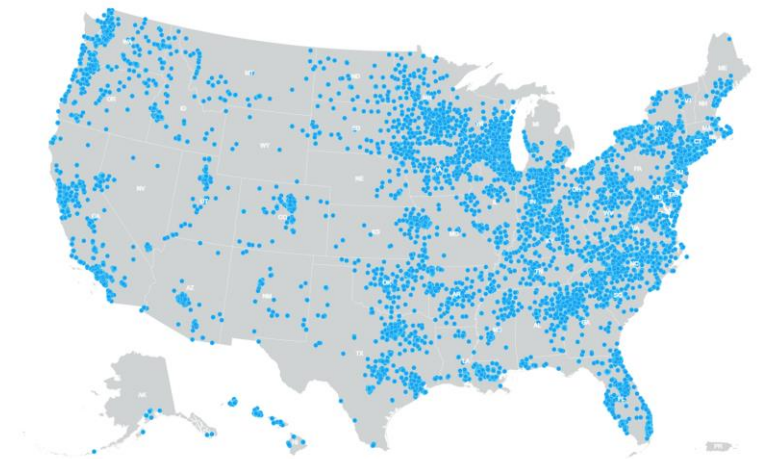
Healthcare's Use of eCR Widens

On January 20, 2020, **187 facilities** were using eCR for 5 pilot conditions

At the end of 2020, over **6,500 facilities** were using eCR for COVID-19

As of January 9, 2023, over **22,000 facilities** are using eCR for COVID-19

Over 27.2 million COVID-19 reports have been sent from healthcare as of January 5, 2023

Learn More

- Visit us online
  - eCR for COVID-19
  - www.cdc.gov/ecr - General Info
  - https://ecr.aimsplatform.org/ – Implementation Info
  - https://www.rckms.org/about-rckms/

Ready to implement? Have questions? Email us at ecr@cdc.gov

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Data Modernization Initiative & ECR Reporting

New York State Department of Health

- ❖ Dina Hoefer | Director of Bureau of Surveillance and Data Systems
- ❖ James Kirkwood | Director of Center for Healthcare Data Innovation

NYSDOH eCR and Data Modernization

Dina Hoefer, PhD
Director, Bureau of Surveillance & Data Systems
Division of Epidemiology

Jim Kirkwood, MPH
Director, Center for Health Data Innovation
Office of Quality and Patient Safety

New York State Department of Health

Current status

- 26 HealthCare Organizations submitting data to NYS
- Data is being stored and reviewed
- No investigations
- Multiple encounters per patient
- The human readable screen have been created for technical administrators.
- The process for presenting the human readable form to the LHDs is being created.

Important flag: This process does not replace electronic laboratory reporting requirements.

QA/QI
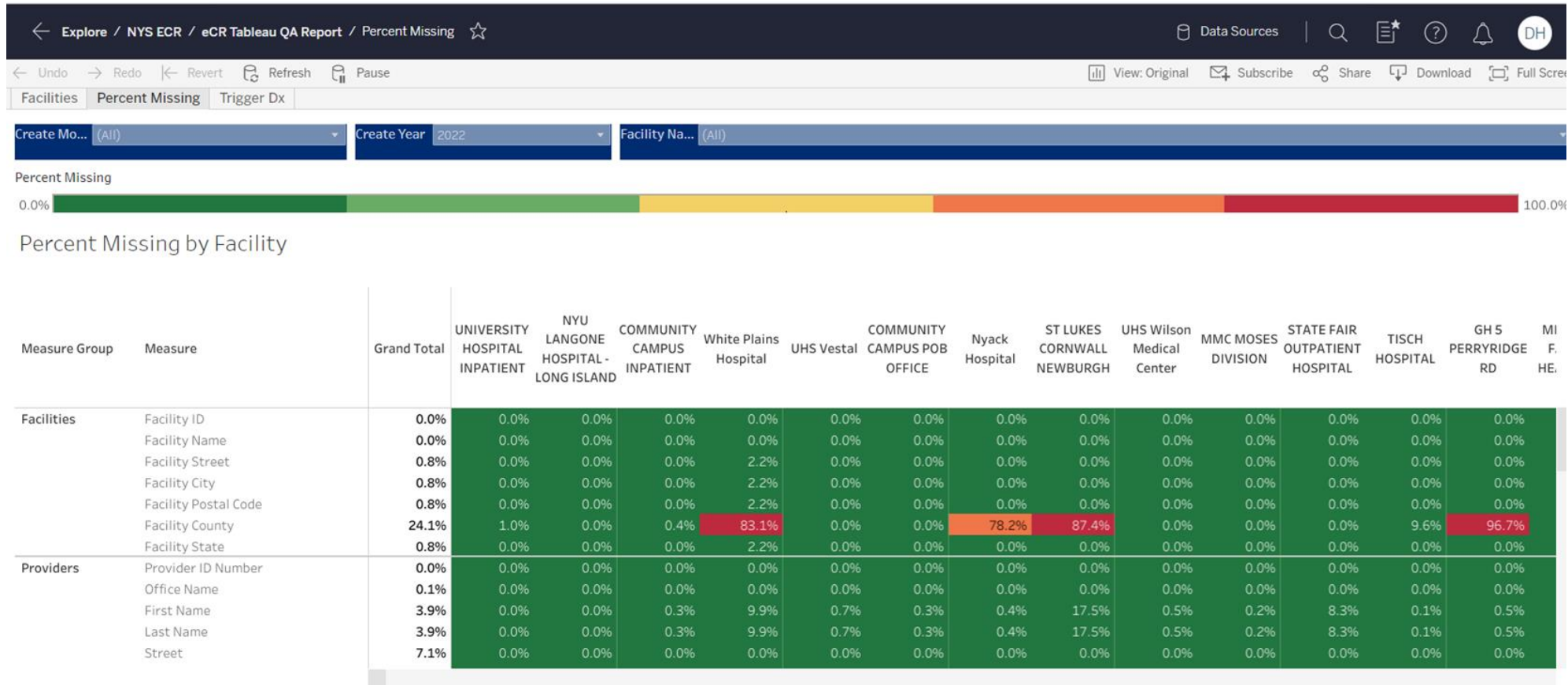
Data as of: December 12, 2022

Note: All percents are based on the number with missing/null values divided by the number of records submitted to the respective category, with the exception of the following variables: 1) Pregnancy (records limited to gender is female and age at time of record 12 - 55, note gender utilized instead of birth sex due to high % missing for birth sex); 2) Parent/Guardian Name & Telecom (records limited to age at time of record < 18); 3) Employment Status/Employer Details (records limited to age at time of record >=18)

QA/QI
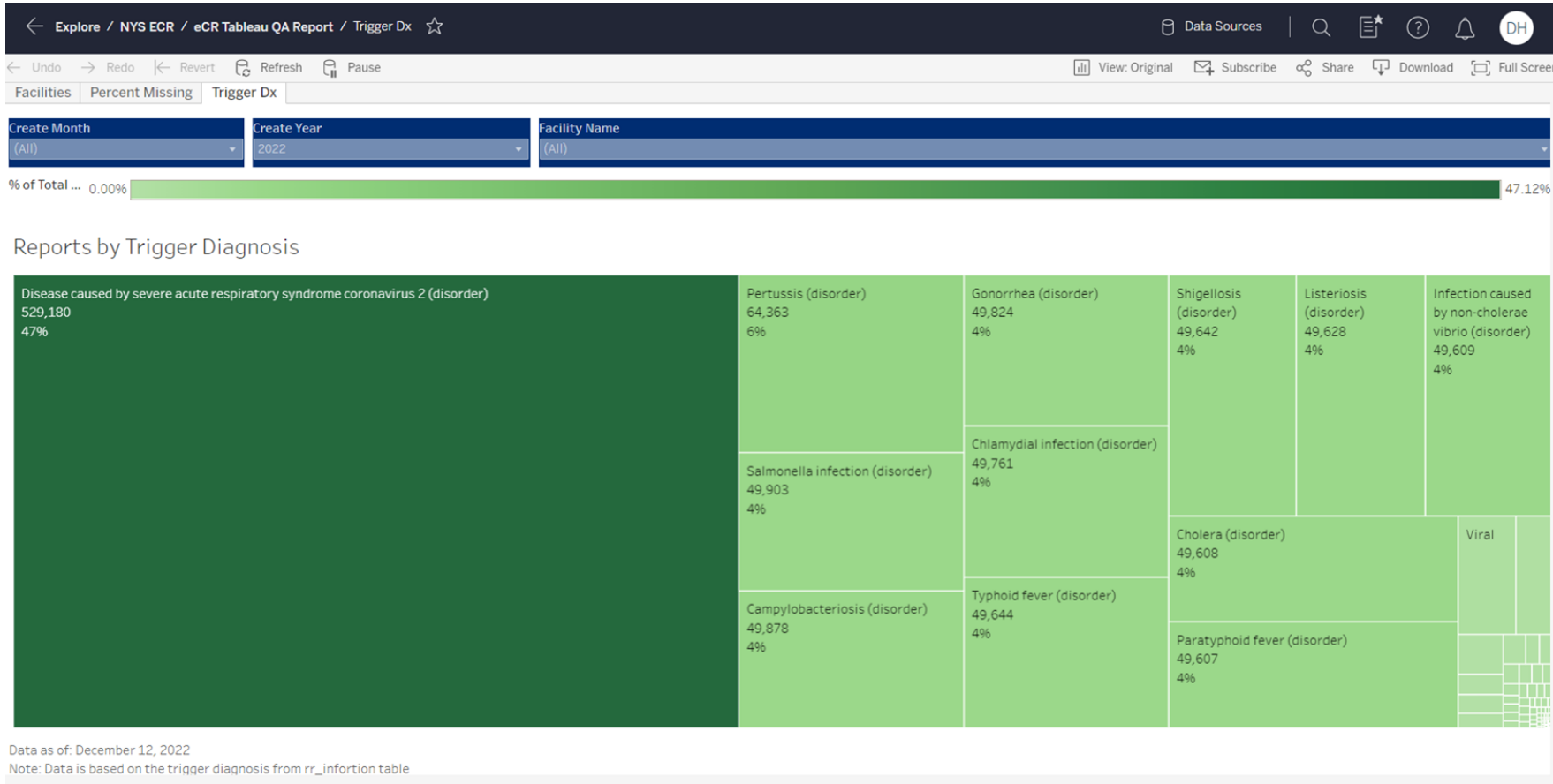
Future Status of eCR

- Move to Cloud-based infrastructure
- Develop feedback for submitting facilities
- Integration into existing disease surveillance systems

- QUESTIONS : nysecr@health.ny.gov

Data Modernization

- Governance
  - Establish more consistent governance across systems
- Modernizing NYSDOH Public Health systems
  - Many systems were built in early 2000s
  - Take advantage of innovation in technology and practices
- How do we share data of clinical relevance with clinical providers?
  - ex- Using the SHIN-NY to share Covid lab result and Covid vaccination information
  - Evolve to share information in a more modern and standardized way
- Matching data via Master Patient Index
- More modern analytic platform

eCase Reporting: nysecr@health.ny.gov

Continue the Conversation!

We are launching a new asynchronous **Interoperability 101** course in the new CHCANYS leaning management system.

If interested sign up using the QR code below or contact Anita Li at ali@chcanys.org.

Thank you for joining us today. Please share your feedback using the survey link in the chat, the QR code below, or the link in the follow up email!