

CDC's Data Modernization Initiative

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WHAT IS THE

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.



Our Ultimate Goal

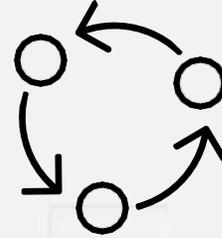
To move from siloed and brittle public health data systems to connected, resilient, adaptable, and sustainable **‘response-ready’** systems that can help us solve problems before they happen and reduce the harm caused by the problems that do happen.

DMI is a Unifying Foundation for Change



VISION

Unified goals and approaches to data, interoperability, and innovation



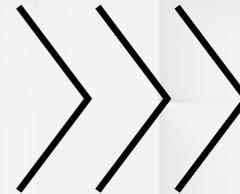
HARMONIZATION

Interconnected data across diseases, across systems, and at every level



CONNECTION

Unprecedented engagement with partners in public health, healthcare, academia, health IT, and industry



ACTION

Accelerated progress through shared policies and standards, unified governance, and robust evaluation

DMI IS BOTH
RESOURCED AND
COMPREHENSIVE,
AND IT UNIFIES US
IN WAYS NO
OTHER
STRATEGY HAS
BEFORE.

DMI Solves Longstanding Problems That Put Us at Risk



Siloed information:

Disconnected and/or proprietary disease systems driven by disease-specific budget lines keep us from seeing the complete picture



Outdated skills:

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



Point-to-point data transmission:

Providers in healthcare and at health departments are burdened with sending data to many places in many different ways



Outdated technologies:

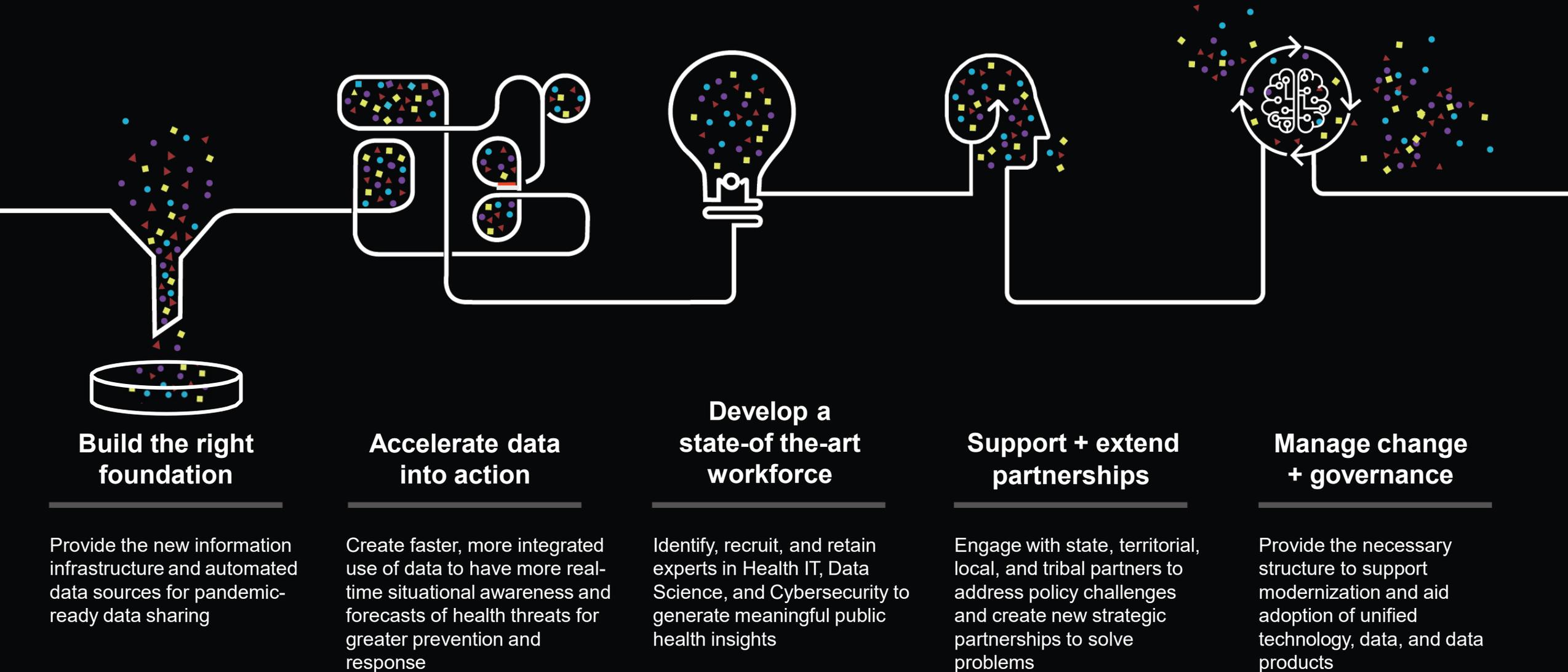
- Older systems at health departments are not flexible, do not use cloud, and are not scalable



Outdated technologies:

- Public health is not a part of the healthcare data ecosystem
- Public health got left behind as federal incentives and regulations helped healthcare systems to be able to easily share data automatically in the Electronic Health Record.

DMI Priorities



Automating and expanding the core of public health surveillance

SYNDROMIC
SURVEILLANCE

Continuous monitoring of emergency room visits to detect potential outbreaks

ELECTRONIC
CASE
REPORTING

Real-time, secure, automated reporting from electronic health records to public health

NOTIFIABLE
DISEASES

Reduced burden on states for reporting notifiable diseases to CDC

ELECTRONIC
LABORATORY
REPORTING

Automated reporting of laboratory test results as soon as they are available

VITAL
RECORDS

Real-time reporting of death data from multiple sources

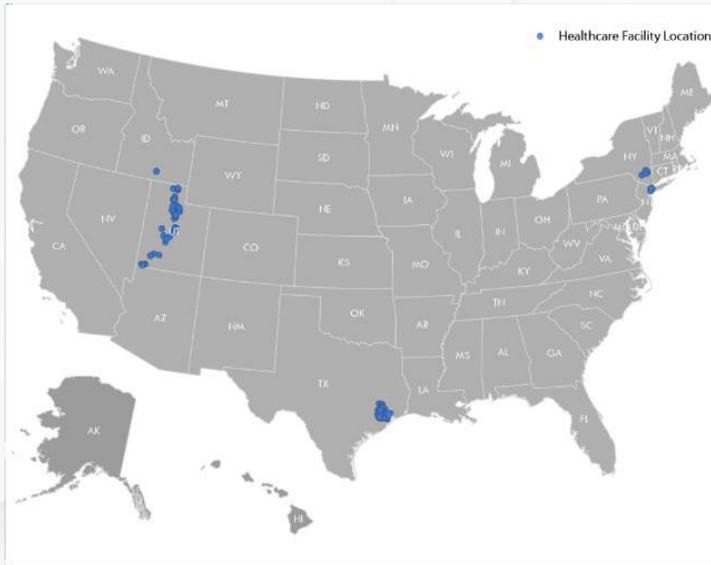
Many Data Sources Reveal the True Picture and Drive Public Health Action



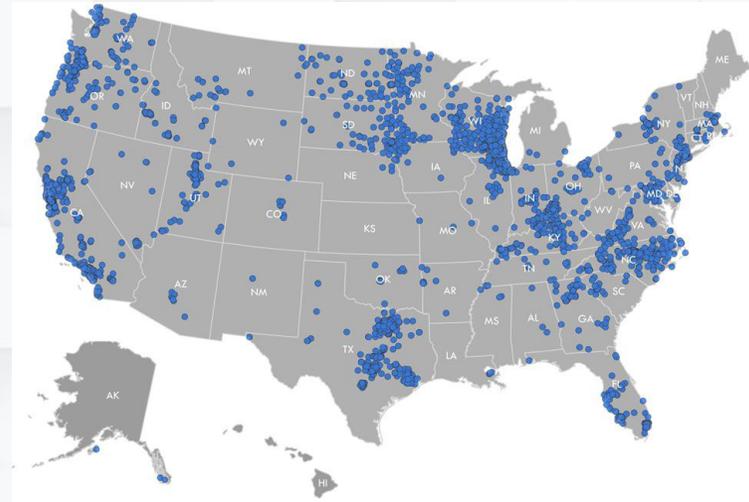
- **Case and death surveillance**
 - Line level case reports
 - Aggregate counts
 - Vital records
- **Syndromic surveillance**
- **Laboratory and genomic data**
- **Healthcare data**
- **Vaccination data**
- **Non-traditional sources**
 - Mobility data
 - Social vulnerability data

Example: COVID-19 Led to an Explosion of Electronic Reporting

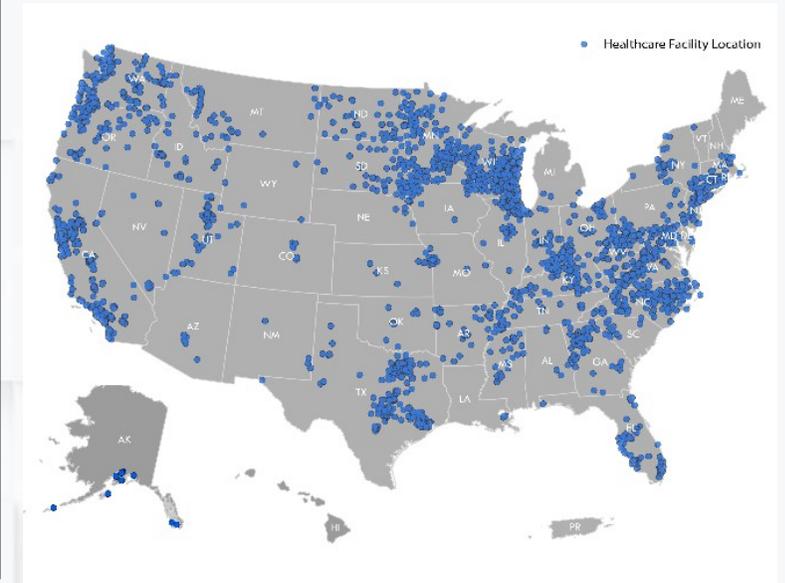
On January 20, 2020,
187 facilities were using eCR for
5 pilot conditions



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



As of August 5, 2021, over
9,400 facilities
are using eCR for COVID-19



Over 10.7 million COVID-19 reports have been sent from healthcare

Building a New Foundation to Collect Novel and More Comprehensive Data

CELR Laboratory Data Flow



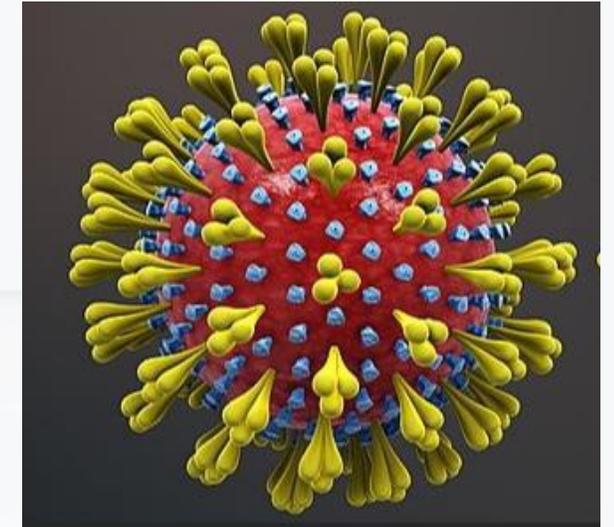
Streamlined lab data
from state health
departments to CDC

COVID-19 Vaccination Data flow



Advanced pipelines to
inform action

Genomic Data Flows



Tracking variants and
spread of disease

Accelerating Data Into Action Through Forecasting and Outbreak Analytics



Predict

Generate forecasts and analyses to support outbreak preparedness and response efforts

Establish and maintain **CFA data architecture**

Collaborate with Federal, State and local leaders on decision-making



Inform

Communicate next-generation public health data with expert disease modelers, emergency responders to meet the needs of decision-makers

Share timely, actionable information with the Federal government; STLT leaders, and the public

Coordinate early warning efforts between CDC subject matter experts and USG interagency



Innovate

Support research and development to improve outbreak forecasts and analyses

Collaborate with and support academic, private sector, and interagency partners

Create translational tools, products, enterprise enhancements to make analyses of pandemic data flexible, fast, and scalable for STLT authorities

DMI Accomplishments are Critical to Forecasting and Analytics

Longstanding Problems

Siloed Information

- Disconnected and/or proprietary disease systems



Outdated Skills

- Workforce needs training to utilize today's technology



Point-to-Point Data Transmission

- Providers are burdened with sending data to many places in many ways



Outdated Technologies

- Antiquated systems at health departments
- Manual data entry
- Lack of cloud infrastructure



DMI Solutions

Integrative Data Solutions

- Syndromic Surveillance
 - Continuous monitoring of ER visits to detect outbreaks
- Vital Records
 - Real time reporting of death data from multiple sources

Creating a State-of-the-Art Workforce

- Implement data science upskilling program
- Enhance training available to employees

Enhanced Interoperability

- Allow data to be easily shared among public health and healthcare systems
- Reduced burden on states for reporting notifiable diseases

Expanded Data Sharing & Cloud Infrastructure

- Build and expand upon the foundational infrastructure for data to be shared
- Electronic Case and Laboratory Reporting
 - Real time, automated reporting from EHR to public health departments
 - Automated reporting of lab test results as soon as they are available

Modernization Supports Health Equity Through...



Collecting better surveillance data

Connecting directly with EHRs to benefit from clinical and demographic data in the records

- Massive eCR expansion

Improving collection of race, ethnicity, and other demographic data across core surveillance systems

Onboarding record numbers of facilities to make data more representative of all people



Building a diverse workforce

- Supporting 108 state and local jurisdictions to build a public health workforce that represents the communities in which they work



Reducing biases in data analysis

- Leveraging the Social Vulnerability Index (SVI) in CDC's COVID Data Tracker
- Building a National Use Case for Social Determinants of Health
- Using privacy enhancing technologies to democratize data on smaller population groups



Making demographic data public

- Making national de-identified data on COVID cases available for shared problem solving
- Adding race and Hispanic origin data to provisional death data releases and life expectancy reports

Questions

