

MENDS, the Multi-State EHR-Based Network for Disease Surveillance, is an innovative data modernization pilot project that leverages timely electronic health record (EHR) data to enhance chronic disease surveillance. MENDS fosters information partnerships between healthcare organizations and health departments.

Connect with MENDS

We hope this brief introduction to MENDS encourages your organization to get involved with EHR-based chronic disease surveillance through a data-contributing partnership or use of MENDS tools and resources.

For questions and to learn more, visit chronicdisease.org/mendsinfo or contact mends@chronicdisease.org

“It’s truly incredible and very exciting that we have access to data that is not several years old and that can also be disaggregated by demographic characteristics.”

– Health department data user

“One of the most powerful reasons why MENDS has such tremendous promise for the future ... as we’ve learned through the pandemic, having a common set of data to drive shared decision making across care delivery in public health is pretty unique.”

– Data contributor

Potential to Modernize Surveillance: Timely, Automated, Efficient Data

Traditional public health surveillance methods, such as population-based surveys, are labor intensive, largely manual, include limited clinical detail, and involve long delays between data acquisition and dissemination.

Automated analyses of electronic health records (EHRs) have the potential to modernize surveillance by providing detailed clinical data on large and diverse populations in a timely and efficient manner. Health departments can use EHR-based data to monitor chronic disease rates, trends, and disparities to inform policies, plan programs, and evaluate their impact.

MENDS was initiated in 2018 as a pilot project to demonstrate the feasibility of building a national EHR-based chronic disease sentinel surveillance system. MENDS draws data from five large EHR aggregator partners with data from approximately 91 healthcare organizations, representing over 12 million people across the United States. State and sub-state estimates of hypertension and other conditions have been successfully generated, suggesting that widespread distributed chronic disease surveillance using EHR data is achievable and useful. MENDS has established a system architecture and governance structure to facilitate data sharing for chronic disease surveillance and gained substantial experience on strategies to manage local implementation challenges. MENDS is funded by Centers for Disease Control and Prevention (CDC), Division for Heart Disease and Stroke Prevention.

- ▶ **Read about CDC’s Data Modernization Initiative for public health surveillance:** cdc.gov/surveillance/data-modernization/
- ▶ **Read about the MENDS pilot in the Journal of Public Health Management and Practice:** bit.ly/mends-pilot

How MENDS Works

MENDS fosters information partnerships between data contributors (health information exchanges, other data aggregators) and data users (state and local health departments). Data contributors make their data accessible to MENDS using standardized data structures and nomenclatures. The source data remain with the data contributor. MENDS, using open-source software platforms, applies validation protocols and standardized algorithms to these data to generate estimates of chronic disease prevalence and care patterns. Statistical models are applied to correct for differences between covered populations and the underlying census population.

MENDS provides query and visualization software tools for data users to track chronic conditions and related risk factors and detect local emerging trends. The pilot also uses statistical and geospatial methods to generate meaningful prevalence estimates of chronic disease measures at the national, state, and sub-state levels.

Resulting data products are designed to inform public health practice.

- ▶ Learn more about how MENDS works + potential use cases: chronicdisease.org/how-mends-works

MENDS Implementation

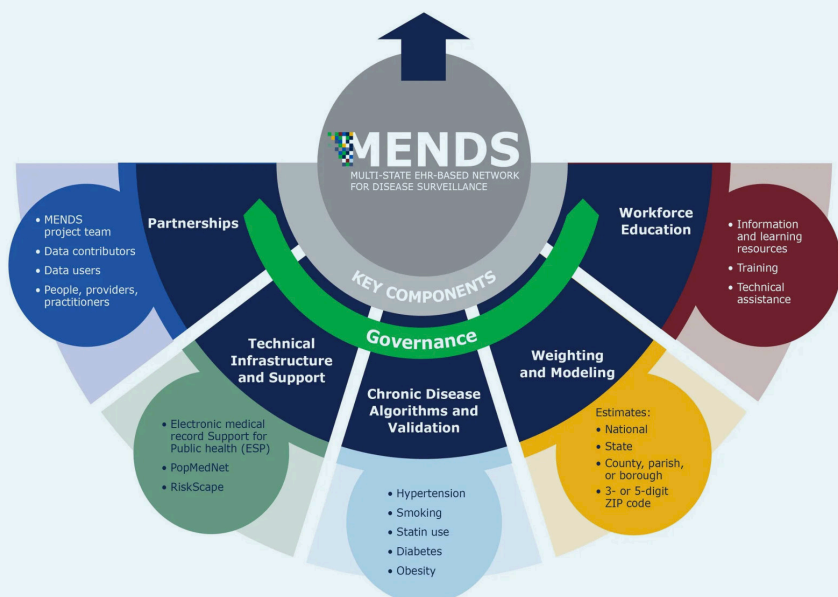
Co-created with partnering data contributors and data users, MENDS employs a transparent governance framework that cultivates trust across the network. This framework aligns technical, statutory, and organizational requirements to facilitate EHR data sharing for chronic disease surveillance.

The MENDS Governance Committee shares the responsibility for decision making and network oversight with the MENDS project team. The committee meets regularly to review policies and processes on data use and access, timeliness and quality, validation, representativeness, analytics, security, data suppression, software implementation and maintenance, and privacy.

Generate timely prevalence estimates of chronic disease measures at national and local levels for informing policies, monitoring trends, planning programs, and evaluating outcomes to improve the health of the population.

Key Components

- Governance
- Partnerships
- Technical infrastructure and support
- Chronic disease algorithms and validation
- Weighting and modeling
- Workforce education for public health data users



Training Resources

Online courses and modules have been created for public health practitioners to learn how clinical data can be used in public health surveillance, and to inform development and evaluation of interventions and policies. Go to: chronicdisease.org/course-catalog

Partners

The MENDS project team—including National Association of Chronic Disease Directors, CDC, and other groups—guides and provides support to project implementation across five partner sites. Learn more: chronicdisease.org/mendsinfo/partners

MENDS Data Contributors	MENDS Data Users
AllianceChicago	Chicago Department of Public Health
	Cook County Department of Public Health
Louisiana Public Health Institute/ REACHnet	Louisiana Office of Public Health
	New Orleans Health Department
	Texas Department of State Health Services
OneHealthPort	Washington State Department of Health
Trustees of Indiana University and Regenstrief Institute	Indiana Department of Health
	Marion County Public Health Department
University of Colorado Anschutz Medical Campus and Health Data Compass	University of Colorado Anschutz Medical Campus

Developments & Highlights

Moving forward, MENDS will continue to generate data products for public health practice and knowledge on EHR-based surveillance for chronic disease and potentially expand to additional chronic conditions and sites. MENDS will consider alignment to data exchange standards, including Health Level Seven (HL7®) Fast Healthcare Interoperability Resources (FHIR®),¹ that have already been tested by a MENDS partner site.

MENDS also will continue to refine its analytic methods for deriving chronic disease prevalence estimates to assist more state and local health departments. Plans include:

- Develop MENDS data products designed to inform public health practice
- Use the interactive Visualization of EHR-Based Surveillance Tool (iVEST™) of weighted and modeled results across the national network
- Disseminate EHR-based surveillance workforce training resources
- Promote thought leadership and learnings to strengthen access to and use of clinical data for chronic disease surveillance
- Explore expansion to additional use cases and indicators, such as social determinants of health data, as well as geographic reach, to increase the representativeness of data

HL7® FHIR®. fhir.org

Funding Acknowledgment

The “Improving Chronic Disease Surveillance and Management Through the Use of Electronic Health Records/Health Information Systems” project is supported by the Centers for Disease Control and Prevention (CDC) of the U.S. Department of Health and Human Services (HHS) as part of a financial assistance award totaling \$1,800,000 with 100 percent funded by CDC/HHS. Disclaimer: The contents are those of the authors and do not necessarily represent the official views of, nor an endorsement, by CDC/HHS, or the U.S. Government.