

# Multi-state EHR-based Network for Disease Surveillance (MENDES) Pilot

Modernizing surveillance by leveraging EHR data to provide real-time chronic disease surveillance

**The MENDES pilot seeks to test an automated chronic disease surveillance system using data routinely stored in health records to provide clinically detailed, efficient, and timely information from large, diverse populations.**

**Powered by CDC and NACDD**

CDC has funded NACDD to pilot a data modernization surveillance project. This pilot, called MENDES (Multi-state EHR-based Network for Disease Surveillance), uses electronic health record (EHR) data collected in clinical settings and works in collaboration with data partners, e.g., healthcare organization, data aggregators and health departments. Groups guiding this work: University of Massachusetts, Commonwealth Informatics, Harvard Medical School's Department of Population Medicine, and the Public Health Informatics Institute.

## About MENDES

In 2018, CDC funded NACDD to pilot a data modernization surveillance project. This pilot, called MENDES (Multi-state EHR-based Network for Disease Surveillance), uses electronic health record (EHR) data collected in clinical settings. The pilot works in collaboration with data partners (healthcare organizations, data aggregators, and health departments) that represent the demographic and health diversity of the country. It is hoped that the data resulting from this pilot can be used as the basis for a national chronic disease surveillance system as well as support the development and evaluation policies and interventions at the local and state levels.

The work is guided by the University of Massachusetts, Commonwealth Informatics, Harvard Medical School's Department of Population Medicine, and the Public Health Informatics Institute.

### Why is MENDES needed?

Since EHR data is gathered daily for clinical purposes, it can be used to track small and important shifts in treatment and prevalence of chronic diseases including cardiovascular health, such as blood pressure control and cholesterol management. MENDES can help public health organizations track these major causes of morbidity and mortality in a timely manner, allowing for more effective program activities and policy development.

### What is different about the MENDES pilot?

Because EHR data is near real-time and includes information about patient demographics, EHR-based surveillance has the promise of being timely, accurate, reliable, as well as compatible with existing disease surveillance and data collection systems like the BRFSS and NHANES.

### How is the data managed?

The MENDES pilot uses a gatekeeper model so that only aggregated information is released to health departments. All raw data is retained behind the firewalls of the data owners.

*"No local health department, state or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring."  
– Introductory Statement published in every edition of "Public Health Reports," 1913-1951*

# Multi-state EHR-based Network for Disease Surveillance (MENDS) Pilot

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## How does MENDS work?

MENDS modernizes data surveillance by leveraging the open source platform, **Electronic medical record Support for Public health (ESP)**, to extract, analyze, and transmit electronic health information from providers to public health organizations to support data analysis and decision-making. ESP runs in the healthcare data provider's data center, either on a virtual or a physical server and generates secure electronic reports for approved data users. It is designed to be compatible with any EHR system.

In the coming years, MENDS will be implemented in selected sites that represent the demographic diversity and chronic disease prevalence across the United States. MENDS also will implement and evaluate the latest weighting and modeling techniques so that MENDS data can be used by all state and local health departments.

## What kind of data does ESP maintain?

ESP pulls data from a participating organization's electronic health record system on a regular basis and maintains data for all patients and their providers. The EHR history for patients can be searched for evidence of chronic or infectious diseases. Data available include: encounters, laboratory tests, pregnancies, prescriptions, and diagnosis codes.

## How has ESP been used before? How can it be used in MENDS?

ESP has been used successfully in monitoring notifiable diseases, influenza-like illness, and vaccine-related adverse events. Automated analysis of EHR data can facilitate timely, accurate public health surveillance in chronic disease and communicable infections; patterns and trends in disease and care; rates of adherence to recommended practices; geographic clusters of disease; continuum of care monitoring; and predictive analytics for clinical decision support.

Examples of State Health Department queries using ESP for MENDS include:

- Prevalence of patients with smoking status
- Prevalence of patients with A1C > 9.0
- Prevalence of undiagnosed hypertension
- Prevalence of well-controlled hypertension