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

Leveraging EHR data to provide real-time chronic disease surveillance

The MENDS 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 with minimal added work and cost for health departments or clinicians.

Powered by CDC and NACDD

CDC has funded NACDD to develop a pilot project to implement MENDS in two State Health Departments and their data partners. Groups guiding this work: the National Association of Chronic Disease Directors, University of Massachusetts Medical School, Commonwealth Informatics, Harvard Medical School's Department of Population Medicine, the Public Health Informatics Institute, and the Council of State and Territorial Epidemiologists.

About MENDS

In 2018, CDC funded NACDD to pilot a surveillance project in two states that is successful in Massachusetts. If successful, this pilot, primarily related to heart disease and stroke and their risk factors, can lead to a real-time, chronic disease surveillance method to plan and evaluate short-term outcomes of policies and program interventions. Called MENDS (Multi-state EHR-based Network for Disease Surveillance), the pilot will use electronic health record (EHR) data collected in clinical settings in two State Health Departments in the first year.

The work will be guided by the University of Massachusetts Medical School, Commonwealth Informatics, Harvard Medical School's Department of Population Medicine, the Public Health Informatics Institute, and the Council of State and Territorial Epidemiologists.

Why is MENDS 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 disease and risk factors, such as blood pressure control and cholesterol management. MENDS 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 MENDS 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 MENDS pilot will use a gatekeeper model so that only aggregated information is released to health departments. All raw data will be 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

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How does MENDS work?

MENDS will leverage the open source platform, **E**lectronic medical record **S**upport for **P**ublic 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 State Health Departments. It is designed to be compatible with any EHR system.

In the coming year, MENDS will be implemented in at least two State Health Departments and their data partners. In subsequent years, the pilot seeks to expand upon the state-based pilot to create an inter-connected surveillance system.

What kind of data does ESP maintain?

ESP pulls data from a participating organization's electronic health record system on a regular (typically nightly) 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 includes: 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 including patterns and trends in chronic disease and communicable infections; 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