

## How Can Using Electronic Health Records Accelerate Research?

Clinical investigators are faced with more opportunity and data and a greater need to organize the data in a meaningful and coherent manner than ever before. Clinical data gathered in the course of routine medical care—if systematically collected, routinely stored, and widely accessible — could provide researchers with the clues needed to unravel many medical mysteries.

Widespread adoption of electronic health records (EHRs) presents a unique opportunity to support and further the nation's health research enterprise. To date, the utility of health information networks has been seen as related primarily to reducing healthcare costs, limiting medical errors, and generally improving the standard of care. While these benefits are important, there is another critical element in the healthcare continuum that could greatly benefit from the development of EHR systems: medical research.

### What is an EHR?

An EHR (sometimes referred to as an electronic medical record or EMR) is a provider-created and provider-driven record used for patient care. The system encompassing these records generally consists of health records stored electronically in-house by the provider and under the provider's control. This system may have full interoperability within a particular healthcare enterprise (hospital, clinic, practice) and at this time can interact with a few other systems — primarily administrative, claims, and some diagnostic systems, such as laboratories — that are outside the enterprise.

The federal government is promoting the use of EHRs to support development of a **nationwide health information network (NHIN)** – the “Internet for healthcare.” At this time the emphasis of the NHIN work is almost exclusively on creating a comprehensive, interoperable system of EHRs to improve patient care and reduce costs. But their promise for speeding the discovery of new therapies is just as great, and research needs must be taken to facilitate that use.

### Why do we need EHRs for research?

Studying large samples of medical records or clinical datasets could be an essential step toward understanding the etiology and progression of disease, treatment methods, and outcomes across varied populations and disease groups.

### The potential benefits of a research-inclusive EHR system would be to:

- speed clinical trials by quickly identifying potential enrollees;
- enhance the monitoring and identification of adverse drug reactions, in effect creating “virtual clinical trials” of thousands of patients to study the impact of approved drugs;
- permit the early identification of public health threats;
- provide the research community access to a broader and more diverse patient population;
- detect patterns of health and illness in a given population; and
- help researchers form hypotheses about disease initiation and progression.

## What are the challenges to using EHRs in research?

Even if all health providers and systems were to adopt EHRs, there is no guarantee that these systems would be useful for research. The famous computer axiom “garbage in, garbage out” is particularly relevant when considering the use of clinical practice data for research purposes. To serve research needs, EHR systems will have to meet different and somewhat higher standards.

### Several systemic problems must first be addressed if EHRs are to be useful for research.

- Clinicians do not observe and record data in standardized ways.
- Clinical records are not uniformly reliable and complete.
- Most of the EHR software systems in use today have an administrative or claims orientation.
- Much of the information in a patient’s record is unstructured text – physicians’ notes and comments.
- Practice databases must be integrated to facilitate data mining.

## What is FasterCures doing?

FasterCures has a unique focus on ensuring that the special needs and challenges of clinical research are understood by those responsible for building and implementing EHR systems and the NHIN. To that end, we have issued a number of reports that have identified action steps:

1. “Ensuring the Inclusion of Clinical Research in the Nationwide Health Information Network” ([www.fastercures.org/pdf/FC\\_AHRQ-NCRR\\_report.pdf](http://www.fastercures.org/pdf/FC_AHRQ-NCRR_report.pdf)) proposes four strategic initiatives for consideration by the clinical research and health IT communities.
2. “Think Research: Using Electronic Medical Records to Bridge Patient Care and Research,” (available on the Web at [www.fastercures.org/pdf/emr\\_whitepaper.pdf](http://www.fastercures.org/pdf/emr_whitepaper.pdf)) presents some of the pioneers and innovators using EHRs today to revolutionize healthcare delivery and clinical research.
3. “Accelerating Research Through the National Health Information Network” ([www.fastercures.org/pdf/NHINReport.pdf](http://www.fastercures.org/pdf/NHINReport.pdf)) proposes a list of guiding principles for the inclusion of research needs in the NHIN.

## What can you do?

- If your insurance or health provider offers EHRs, register and use the system. You can also set up your own personal health record online.
- Ask your employer if they provide personal health records and if so, what their privacy policy for your patient data is. Several companies such as Intel Corp., Wal-Mart Stores Inc., and British Petroleum will provide digital health records to their employees.

For more information about EHRs and clinical research visit our website at: [www.fastercures.org](http://www.fastercures.org)

FasterCures/The Center for Accelerating Medical Solutions is a nonprofit “action tank” formed under the auspices of the Milken Institute with a mission to identify and implement global solutions to accelerate the process of discovery and clinical development of new therapies for the treatment of deadly and debilitating diseases.