Study finds substantial data gaps in electronic health records

Boston, MA – In the first known study to examine the completeness of clinical data in a large electronic health record (EHR), researchers from Harvard Medical School’s Department of Population Medicine at the Harvard Pilgrim Health Care Institute found substantial missing data, with profound implications for clinical care, medical research, and public health. The study is published on-line in the *Journal of the American Medical Informatics Association* and was funded by the National Institute of Mental Health. Electronic health records are used by more than 83% of office-based physicians in the U.S.

The researchers analyzed medical records for more than 5,500 patients with either depression or bipolar disorder who were insured by a major insurer in New England and who receive their primary care from the leading multi-specialty group, Harvard Vanguard Medical Associates, a practice of Atrius Health. The study focused on behavioral health care to track the completeness of EHR entries as compared to claims data, recognizing that patients frequently seek behavioral health and specialty medical care across a range of provider sites.

Study results showed significant missing data from electronic health records for diagnosis, visits, ER admissions and hospitalizations. Roughly a quarter of depression and bipolar diagnoses and more than half of behavioral visits were not recorded. Also, nearly 90% of acute psychiatric services at hospital facilities were not captured in the EHR. Data gaps were similarly high for outpatient and inpatient events overall.

The study is timely and relevant given recent federal efforts – through significant public spending and penalties on providers – to promote rapid adoption of electronic health records across the US. The government’s goal was to produce a data-driven, interconnected system that would improve patient safety and reduce medical costs by, for example, reducing duplicate tests and dangerous drug combinations in different settings.

The study’s Principal Investigator and senior author, Stephen B. Soumerai, ScD, of the Harvard Pilgrim Health Care Institute said, “Federal efforts have been undermined by the inherently fragmentary nature of the US healthcare system and the proliferation of proprietary EHR systems that communicate poorly with each other. Going forward, our national policy for investment in EHR needs to be re-examined to surmount the fragmentation that currently exists in US healthcare and to set robust technical standards for interoperability and data quality.”

Lead author Jeanne Madden, PhD, now at Northeastern University’s School of Pharmacy, noted, “This is a serious nationwide problem with significant repercussions for both clinical management and population research. With medical decision-making becoming increasingly computerized, care will
suffer if there is overreliance on data that are incomplete,” she said. “Health research will undercount important diagnosed patient populations and their use of services.”

“This study highlights important issues,” noted Jacob Kagan, MD, Specialty Director, Behavioral Health for Atrius Health. “Atrius Health has a large and highly integrated behavioral health and primary care practice with advanced health information technology. Nonetheless, the fragmentation of the behavioral health delivery system poses significant challenges even for us.”

About Harvard Pilgrim Health Care Institute's Department of Population Medicine

The Harvard Pilgrim Health Care Institute's Department of Population Medicine is a unique collaboration between Harvard Pilgrim Health Care and Harvard Medical School. Created in 1993, it is the only appointing medical school department in the United States based in a health plan. The Institute focuses on improving health care delivery and population health through innovative research and teaching.

About Atrius Health

Atrius Health, an innovative nonprofit healthcare leader, delivers an effective system of connected care for more than 675,000 adult and pediatric patients in eastern and central Massachusetts. Atrius Health’s 29 medical practices, with more than 35 specialties and 750 physicians, work together with the home health and hospice services of its VNA Care Network Foundation subsidiary and in close collaboration with hospital partners, community specialists and skilled nursing facilities. Atrius Health provides high-quality, patient-centered, coordinated care to every patient it serves. By establishing a solid foundation of knowledge, understanding and trust with each of its patients, Atrius Health enriches their health and enhances their lives. Learn more about Atrius Health at www.atriushealth.org

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