



Prioritizing the expansion of electronic medical record interoperability software to rural health care systems

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Introduction

The transition from paper to electronic medical records (EMR) has modernized and improved health care delivery systems by enhancing the management of medical data as well as communication between hospitals, insurers, patients, and clinicians. Recognizing the benefit of EMR software, federal funds were distributed for the digitization of patient records through the HITECH Act of 2009.ⁱ This transition brought about a myriad of EMR platforms, with hospitals across the country often utilizing differing EMR software, creating new technology challenges. The advent of a vast number of EMR platforms has led to the fragmentation of patient data across multiple platforms, making records difficult to access, as one EMR system may not communicate with another. The lack of communication between different EMRs led to the next revolution in health care data management through implementation of EMR interoperability software. This allows providers to access patient records from outside health systems, as well as share important information with providers at other practices. All data sharing is facilitated by the software and can be done regardless of the EMR a practice utilizes (such as Epic, Cerner, etc.).ⁱⁱ

In 2016, the 21st Century Cures Act was passed, mandating that the Centers for Medicare and Medicaid Services (CMS) prioritize the expansion of EMR interoperability software.^{iii,iv} With EMR interoperability, clinicians more effectively manage patient care with information coming from both inside and outside their health system. It has been shown that both providers and patients benefit from EMR interoperability, as workflows are improved and patient care is optimized.^v In one medium-sized hospital, implementation of EMR interoperability in one aspect of patient care increased safety and revenue by a margin of \$370,000 within the first eight months.^{vi} Utilizing EMR interoperability software to its full potential reduces errors in patient care and costs of duplicate testing through better inter-health system communication, while improving preventative screenings and vaccine administration.^{vii,viii}

Particularly for rural communities, EMRs are instrumental in delivering quality care to patients and ensuring smooth transitions of care when patients seek treatment outside of their home community. Given limitations posed by the small scale of rural health care systems, patients must often travel to larger urban or suburban health systems that may utilize a different EMR platform. When rural patients seek care at these larger institutions it is critical that their local providers can access a comprehensive review of the care they received. Rural hospitals report more challenges in exchanging and receiving data with health systems using various EHR platforms when compared to hospitals with more resources.^{ix} With more than 46 million Americans living in rural areas,^x hospitals in these regions serve many patients. Despite their critical role in providing access to care, rural health systems consistently find themselves in financial distress, with many struggling to keep their doors open.^{xi,xii} Already facing this burden, hospitals serving rural communities often find it unfeasible to purchase the technological infrastructure necessary for EMR interoperability. Beyond cost, implementation of EMR interoperability software is hindered by



barriers such as poor integration with older EMR platforms, lack of staff training to solve software and data issues, and concerns over data privacy and security.

Analysis

The struggles imposed by lack of EMR interoperability directly affect small, rural clinics in a very personal way. A small family medicine clinic in Escanaba, Mich., has been facing these challenges for the last year. During the transition to a new EMR system, clinic staff found they were deficient in appropriate training, on-site assistance, and ability to transfer old records to the new EMR platform. During the initial rollout period, they were responsible for the “backloading” of all patient medical charts into the new system, but without adequate preparation time and no third-party application to transition the records, the clinic still has not been able to complete this task. According to a nurse coordinator, “If we do not take it upon ourselves to manually look up in an ‘old system’ when a patient’s last PAP, low-dose CT, mammogram, or colonoscopy was done, then we miss opportunities to catch abnormalities and due dates for screening.” Navigating past records slows clinic efficiency especially when clinics face staffing shortages, causing existing staff to have more responsibilities (K. Vandeville, personal communication, Feb. 10, 2022).

Improving rural EMR interoperability is more than implementing the EMR system. In a 2017 data brief from the Office of the National Coordinator for Health Information Technology, only 27 percent of rural hospitals and critical access hospitals reported having the ability to participate in the four domains of EHR interoperability: sending, receiving, finding, and integrating summary of care records. This is significantly less than the 41 percent of hospitals that reported having similar capabilities nationwide. Additionally, despite some allocated federal funding from CMS and demonstrated benefits of interoperability, only 24 percent of health care systems use application programming interfaces (API) to scale, while 90 percent believe that interoperability would be helpful.^{xiii} When health care teams discuss a shared patient, they prefer leveraging longitudinal data from an EMR for efficient, timely communication.^{xiv} The National Rural Health Association (NRHA) recognizes the important groundwork states have laid out to encourage interoperability among health information systems through health information exchanges and other mechanisms. However, with a multitude of EMR platforms, accessing patient data is often burdensome and inefficient, causing significant stress for providers trying to manage care. Moreover, with the increased fragmentation of patient data over disparate platforms, suboptimal and compromised patient care due to poor transitions is becoming more common.^{xv} Ineffective care transitions have been implicated in increased hospital readmission rates, contributing to unnecessary spending.^{xvi}

NRHA agrees with health information exchange experts: “Complete participation and achievement of interoperability is a key element to improving provider care quality and population health management.”^{xvii} CMS has also expressed their support for enhancing interoperability by releasing their EMR Incentives Program to the Medicare and Medicaid Promoting Interoperability Programs in April 2018. This program recommends and, in some cases, requires payers to utilize API to improve the interoperability of their preferred EMR. It has been argued that the implementation of API will improve various aspects of patient care and medical office efficiency by reducing administrative roles for prior authorizations and claims.^{xviii}

Policy recommendations

- Establish requirements for EMR vendors to enact a common language or share existing APIs between EMR systems to ensure interoperability.



- Promote the allocation of funding to resource-poor rural hospitals, community health centers, rural health clinics, and other rural health providers for the purpose of upgrading and purchasing infrastructure that allows EMRs to fully utilize API interfaces and become interoperable.
- Support federal legislation that enforces standardized security measures for all electronic medical record software.
- Establish and train an IT staff member at each regional hospital dedicated to the maintenance and optimization of API and EMR interoperability software.

Recommended actions

- Develop requirements for EMR vendors to enact a common language or requirements to share existing APIs between EMR systems to ensure interoperability.
- Allocate funding to rural health systems to implement these technologies within their frameworks through federal and state grant funding, as well as Medicaid programs.
- Allocate funding to resource-poor rural hospitals and health systems for hiring experienced EMR specialists to train physicians and staff on how to better use their EMR.
- Develop a federal language regarding security standards for EHR interoperability to enhance security of personal health information through the Office of the National Coordinator for Health Information Technology.

Conclusion

Many rural health systems currently do not have any EMR interoperability software or are not utilizing such software to its full capacity. Studies have shown that this lack of utilization poses unique challenges for rural facilities. A review of the literature shows that this issue may stem from lack of resources or training from an EMR specialist. Therefore, we advocate for NRHA-sponsored legislation creating a stimulus that allocates funds for rural hospitals to better utilize EMR interoperability software. Studies have shown that through proper utilization of EMR interoperability software, patient care and safety can be improved and unnecessary use of resources will be reduced, thereby reducing costs for hospitals.



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