

TRENDS IN EMR INTEROPERABILITY



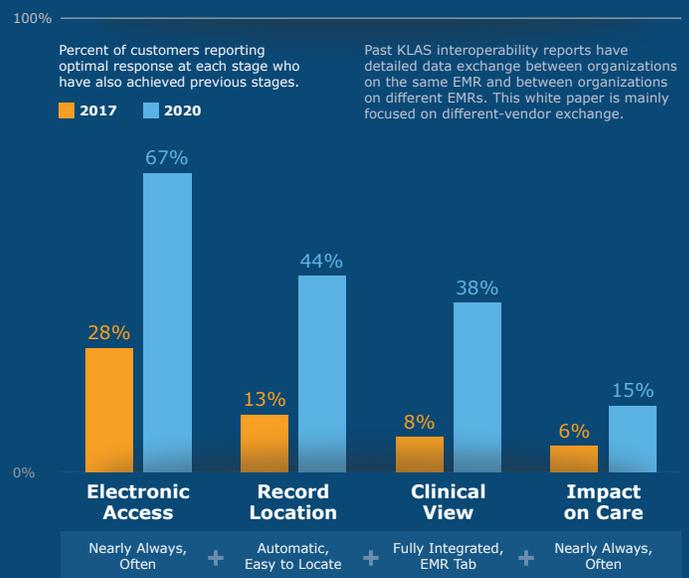
Introduction

KLAS has formally measured interoperability since 2015, monitoring vendor and provider progress toward achieving deep interoperability that substantively improves patient care. The industry has made steady progress in some areas and leaps forward in others. In partnership with CHIME, this white paper shares 10 interoperability trends that highlight areas of progress and opportunities for industry improvement.

Deep Interoperability Is Progressing, with Many Organizations Poised for Significant Progress in Coming Years

The rate of provider organizations achieving deep interoperability has doubled since 2017. The overall rate leaves much to be desired, but signs of progress are visible. Thanks to connections to national networks and more proactive vendor support, roughly two-thirds of provider organizations often or nearly always have electronic access to needed records. This has led to a natural increase in the number of providers who report they can automatically or easily locate those records. But perhaps the most meaningful change has been how easily records are available in the clinical view. Organizations that were previously unable to move beyond the access and location stages of interoperability say vendor development of functionality and usability has made viewing these records much easier. Many are increasingly optimistic that this change will allow record exchange to have a greater impact on patient care in the future.

Industry Progress toward Deep Interoperability, 2017 vs. 2020



What is "Deep Interoperability"?

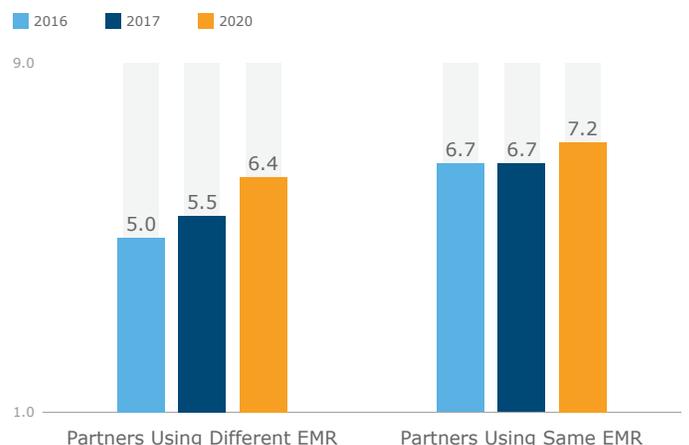
An organization is counted as having reached deep interoperability if they indicate one of two optimal responses in all four interoperability stages. The deep interoperability rate refers to the percent of interviewed organizations within each vendor's customer base that (1) often or nearly always have access to needed data through any interoperable means, (2) are able to easily locate specific patient records or have them automatically presented to clinicians, (3) have the retrieved patient data fully integration into the EMR's native data fields or in a separate tab or section within the EMR, and (4) feel retrieved patient data often or nearly always benefits patient care to the extent that it should.

Almost All EMR Vendors Have Improved Connections to Outside EMR Solutions

Over the last four years, vendor support of data sharing with exchange partners using a different EMR has increased significantly. The biggest gains have come because of vendor proactivity; vendors who take an active role in helping push provider organizations to success have seen the most progress. This proactive push is not ubiquitous, however. In some instances, lack of technical expertise and regulatory challenges have limited connections to outside EMR vendors. In other instances, EMR vendors have made a strategic decision to focus on other aspects of interoperability, such as FHIR, in preparation for expected government requirements. These vendors have not seen as much progress connecting to outside EMR vendors but are leading the way in API adoption.

How Well Does Your EMR Vendor Support Data Sharing with Exchange Partners?

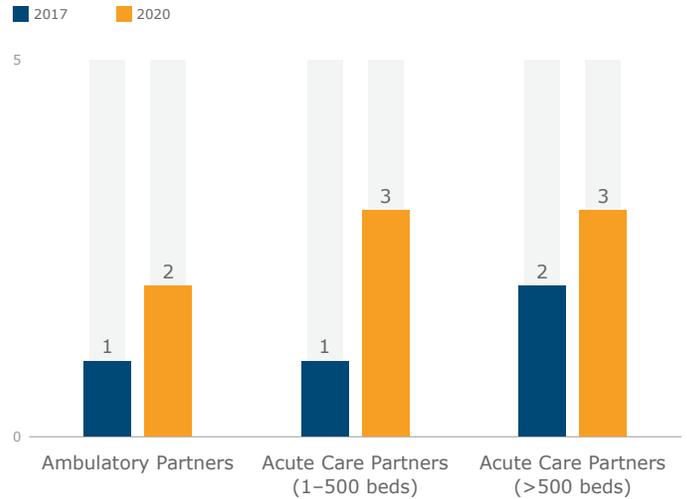
(1-9 scale | 1=extremely dissatisfied, 9=extremely satisfied) (n=210)



Ambulatory Clinics and Smaller Hospitals Are Connecting More Than Ever Before

KLAS market share data has shown a steady trend of EMR vendor consolidation over the past several years. Interestingly, this consolidation has resulted in more needed connections with critical exchange partners, not fewer. This is because as the acute care market consolidates, same-vendor exchange is on the rise, and the comparative ease of same-vendor exchange has increased market expectations around broader EMR interoperability. Organizations that previously were under little pressure to exchange with affiliates are now making strides to deepen connections and integration. The most notable increases are in ambulatory clinics and in acute care hospitals with <200 beds. The increased ambulatory connections are mostly with affiliate hospitals using larger acute care EMR vendors. On the side of <200-bed hospitals, organizations say they are increasingly being asked to exchange with larger organizations leveraging large EMR vendors.

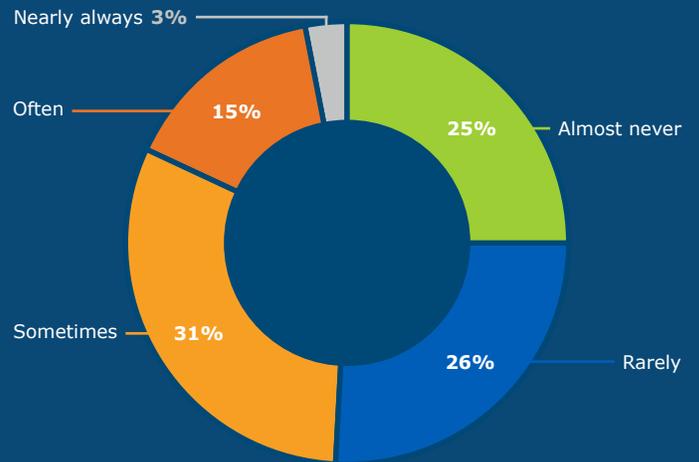
Median Number of Connected Outside EMRs from Critical Exchange Partners



High Costs and Lack of EMR Vendor Technical Readiness Make Interoperability Harder for Half of Surveyed Providers

Achieving deep interoperability requires close collaboration between provider organizations and EMR vendors, and half of interviewed provider organizations say they are not getting the vendor support they need to be successful. By far, the most mentioned barrier to success was cost. Buying the latest features and functionality, paying for new interfaces and connections, and the cost to keep up system customization are frequent complaints. This challenge primarily affects organizations with <500 beds, but large health systems with 1,000+ beds also report this is a barrier. When cost is not prohibitive, it is a lack of deep understanding of provider workflows and organizational needs and a lack of technical readiness that prevent vendors from fully supporting customers.

How Often Does Your EMR Vendor Make Interoperability Harder?

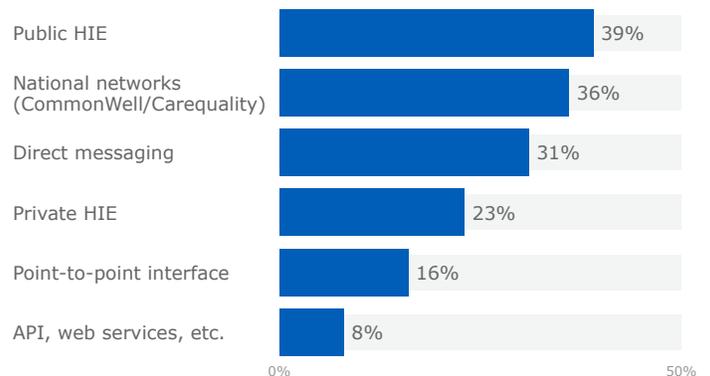


National Networks Have Reached a Tipping Point

Use of national networks has continued to grow since 2017, when this method was barely on organizations' radar. Today, perceived value and adoption are higher than ever before, and organizations leveraging these networks are significantly more likely to report achieving deep interoperability. Organizations appreciate the completeness of data available through these networks and the positive end-user experience. Direct messaging is still used frequently, often in conjunction with a national network or a public HIE. Overall, public HIEs are described by provider organizations as the most valuable sharing method, with clear regional benefits.

Most Valuable Interoperability Methods for Accessing Patient Data

Percent of respondents who cited method as valuable (100-percent scale) (n=210)



"A public HIE would be the best interoperability method. All of the other options generally involve figuring out what the facility we are sharing with is on. If we have a public HIE, we have a singular option, and everyone sharing with us can connect to that and pull the information needed without having to do a massive configuration." —IT director

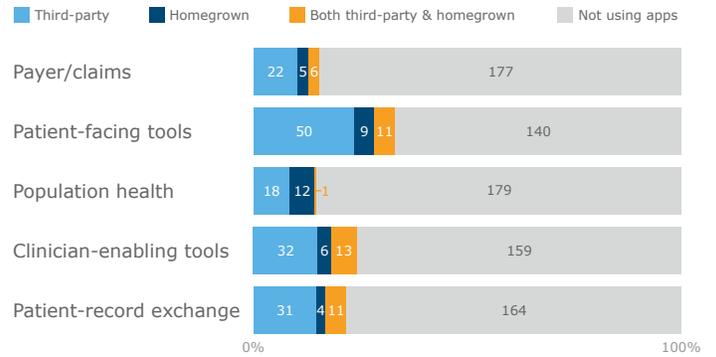
App Use Still in Early Stages; Patient-Facing App Use Growing

Patient-facing apps are some of the most commonly used across the healthcare app landscape. Some provider organizations are leveraging apps from their vendor. Apple is the most common third party being leveraged for this use case. Several organizations that are not leveraging patient-facing apps or are using homegrown apps indicated they are in the process of certifying with Apple to leverage the Apple HealthKit FHIR functionality.

For Which Use Cases Are You Leveraging Apps?

(100-percent scale)

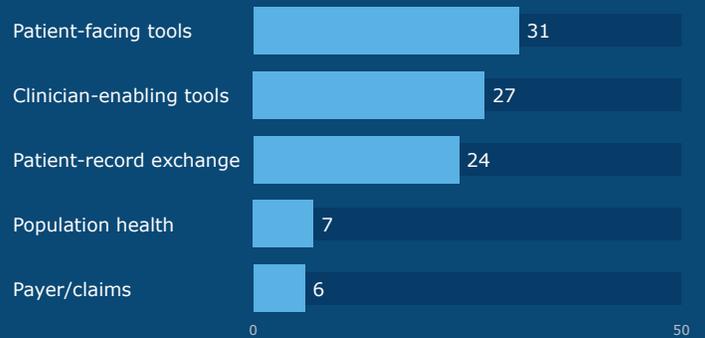
Types of Apps Being Used



FHIR Adoption Begins to Take Hold in Large Health Systems

Adoption of FHIR APIs lags behind adoption of proprietary APIs, which have been in use for longer. The bulk of FHIR adoption comes from customers of large EMR vendors, and these organizations are primarily leveraging FHIR APIs for patient-record exchange, clinician-enabling tools, and patient-facing tools. These organizations tend to be larger, more advanced health systems (~2,000 beds). FHIR is less adopted by smaller hospitals, who tend to leverage smaller EMR vendors, and ambulatory clinics. Across all care settings and customer sizes, FHIR APIs for population health use cases are limited. However, exploring APIs for this purpose in the future is of interest to many organizations, regardless of their core EMR vendor.

For Which Use Cases Are You Leveraging FHIR APIs?



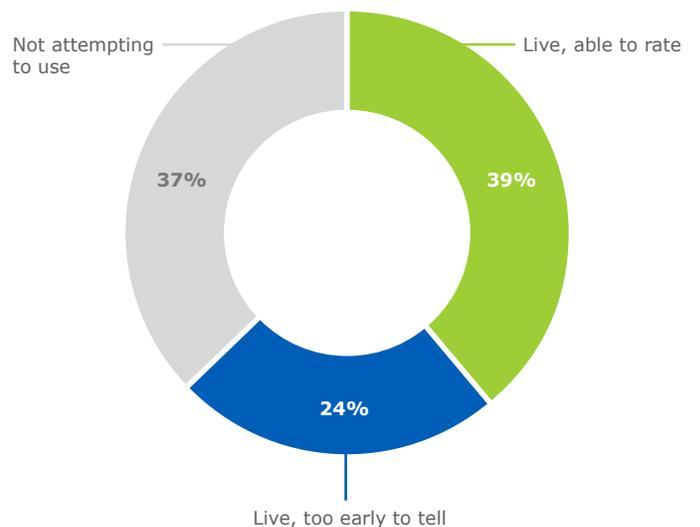
"We are actually looking at population health apps. We are using some already. We have what is called a gathering system, which is a welcome center for patient health. It basically is a place where we can actually have training and workout areas where patients on workout programs can come and learn techniques for stretching and working out. We have apps that let us collect and track information about those patients, but they are not integrated into [our EMR] system." —CIO

Intended ROI of FHIR Unclear for Many

Roughly one-quarter of provider organizations live with FHIR APIs say they are too early in their journey to rate their satisfaction with these connections. These organizations question the value of FHIR because of three primary concerns: (1) lack of patient adoption of apps, (2) an unclear connection between use-case adoption and the intended outcomes, and (3) difficulty quantifying the potential outcomes they have identified. Organizations that have not adopted FHIR APIs share similar concerns. There is an opportunity for both vendors and cutting-edge provider organizations to provide industry education to help others see value from FHIR APIs.

Are Providers Able to Rate Their Satisfaction with FHIR APIs?

(n=210)

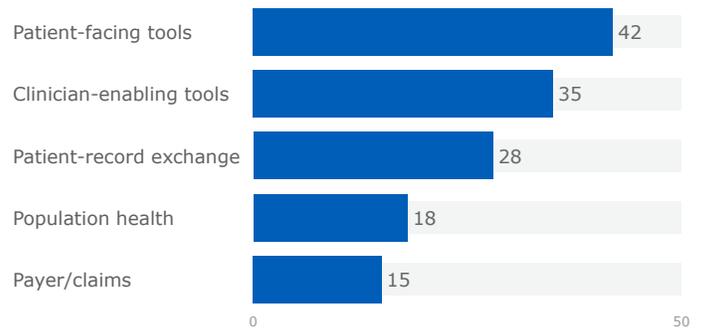


"We have a small number of apps that we are using through FHIR, but what we have found for the most part is that FHIR doesn't provide all of the functionality that is needed to do complete workflows. . . . One of the big limitations with FHIR is that recently, there has been a lack of support for two-way data. Most FHIR apps pull data out, but the ability to write data back is still limited for us." —VP of IT

Proprietary API Adoption Is Proving Valuable

Patient-facing tools, clinician-enabling tools, and patient-record exchange are the primary use cases for proprietary APIs—just like with FHIR. The difference is the depth of adoption and the perceived value. Twice as many adopters of proprietary APIs can rate their satisfaction compared to adopters of FHIR. The value proposition is also clearer—provider organizations can clearly articulate the value they have received from proprietary APIs. Most of the benefits they describe are operational in nature (e.g., scheduling, facilitating payment, posting results faster). Early clinical outcomes have also been identified (e.g., facilitating care-team coordination), though they are less common.

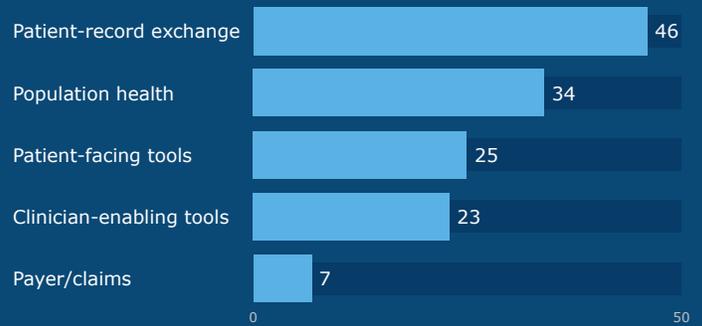
Are You Using Proprietary APIs?



Robust Record Exchange and Population Health Are Top Needs Going Forward

When asked what interoperability use cases their vendor should focus on in the next two to three years, provider organizations primarily spoke about enhancements to patient-record exchange. They would like that exchange to be bidirectional and would like parsing through that data to be easier. Population health is another key area for future vendor focus. Provider organizations want their vendors to develop additional capabilities to keep pace with best-of-breed options. Another population health-related desire is the incorporation of more social determinants of health (SDOH) data. A number of organizations that would like more work around population health interoperability also say payer/claims connections need to be strengthened.

Top Interoperability Use Cases Requiring Attention from EMR Vendors over the Next 2–3 Years



“[Our vendor] needs to pay the most attention to sharing records. I would like to have the ability to drill down into a record and send specific data instead of having to send a whole record.” —CIO

Conclusion

Since KLAS’ prior large-scale interoperability study in 2017, the market has made notable progress; access to outside records has increased, provider organizations are connecting to more critical exchange partners than ever, and the use of APIs offers new ways to facilitate data exchange in service of myriad use cases. Even with all this progress, there is still a significant opportunity for EMR vendors and provider organizations to partner effectively to help data exchange truly impact patient care. With additional work, the industry appears poised for improvement in this area going forward.



The College of Healthcare Information Management Executives (CHIME) is an executive organization dedicated to serving chief information officers (CIOs), chief medical information officers (CMIOs), chief nursing information officers (CNIOs), chief innovation officers (CIOs), chief digital officers (CDOs) and other senior healthcare IT leaders. With more than 5,000 members in 56 countries plus two U.S. territories and over 150 healthcare IT business partners and professional services firms, CHIME and its three associations provide a highly interactive, trusted environment enabling senior professional and industry leaders to collaborate, exchange best practices, address professional development needs and advocate the effective use of information management to improve the health and care in the communities they serve. For more information, please visit chimecentral.org.



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