Kaiser Permanente: The Electronic Health Record Journey

Lessons Learned

- *A new system provided an opportunity to rethink potentially outdated workflows and processes.*

- *Quality improvement and cost savings can be achieved by starting with a standard approach and allowing customization later.*

- *Interdisciplinary leadership is important in ensuring a collaborative culture to drive toward a common goal.*

Setting the stage: EHRs prior to Kaiser Permanente HealthConnect®

Prior to developing Kaiser Permanente HealthConnect®, Kaiser Permanente (KP) used multiple electronic health record (EHR) systems. With each of the 8 regions functioning independently, Kaiser Permanente's disparate IT (information technology) systems shared limited data elements and required customization and costly maintenance.

Given the scale of the organization, program-wide benefits such as cost savings and quality improvement were attainable but difficult to achieve. In 1997, then-CEO George Halvorson and Kaiser Permanente leadership committed to address these concerns by creating an ambulatory (outpatient) EHR system for all regions. However, the well-intended idea failed to deliver the anticipated benefits, forcing leadership to reevaluate the next steps.

Understanding that a robust EHR system would be imperative to delivering quality care, leaders assessed whether purchasing an "off-the-shelf" EHR product was financially and strategically preferable to developing an in-house solution. This make-versus-buy decision took multiple factors into consideration: cost, integration capabilities, clinician usability, and alignment to strategy. After a marketplace assessment, it was clear that no existing EHR solution would support the size and complexity of the organization. Due to cost benefits, an existing relationship, and the company's reputation and strategic alignment, Kaiser Permanente leaders determined that partnering with Epic Systems to develop a comprehensive, integrated EHR platform was the optimal solution.

Fast Facts about KP HealthConnect

Implemented from 2004 to 2010 and using Epic Systems as a basis, KP HealthConnect…

- Includes both ambulatory and inpatient systems
- Integrates billing, scheduling, and registration
- Interfaces with pre-existing applications including pharmacy, laboratory, and imaging systems
- Offers members a personal health record through kp.org

Developing the Business Case

The leaders' vision for the EHR build was firmly grounded in Kaiser Permanente's mission (at that time) to provide "affordable, quality health care service to improve the health of our members and the communities we serve." Although it would be a health information technology system, KP HealthConnect was not conceived as part of an overall IT strategy. Instead, the new system was intended to assist the organization in achieving goals in quality, service, and affordability.

Conducting an in-depth analysis to support the business case was challenging. While the analysis easily identified and quantified 3 broad categories of financial benefits—reducing operating costs and capital expenditures, and increasing revenue—quantifying other benefits was not as easy. Nevertheless, board and organizational leaders followed their conviction that building a distinct EHR system was a competitive advantage and strategic imperative.

Leaders envisioned the future state of KP HealthConnect as a highly sophisticated information management and delivery system integrating clinical records with appointments, registration, and billing. Built with the patient experience foremost in mind, this comprehensive health care business system would revolutionize the care delivery model. However, developing a fully integrated system that would streamline numerous workflows and share consistent data across all 8 regions in real time was no easy feat. At the national level, the system would need to implement a consistent data model to populate databases supporting all reporting needs.

In the clinical setting, KP HealthConnect would be an essential tool to reduce variation and provide evidence-based clinical decision support. It would also serve as a platform to share best practices, thereby improving and streamlining existing internal processes. Given these lofty system goals, support from organizational leaders and a strong focus on achieving value were paramount to the project's success.

The business case for KP HealthConnect, aligned to Kaiser Permanente's organizational goals and commitment to members

Quality	Service	Affordability
• Clinical information available 24/7 • Unsurpassed clinical outcomes • Real-time clinician access to recommended best practices • National leadership in patient safety • Enhanced research capabilities to support evidence-based care	• Enhanced personalized care • Up-to-date clinical & patient preferences • Information provided to patients for shared decision making • Patient access to information via telephone, Web, and secure messaging • Support for patients' participation in their own care • Efficient access to care to minimize wait times and out-of-pocket costs • Superior integration and continuity of care across specialists, settings, and time	• Reduced cost of care and improved visit experiences • Elimination of waste associated with paper medical records or missing medical records • Elimination of costly in-person services unless medically necessary or desired by the patient • Streamlined IT and administrative processes and costs

Top Organizational Priorities

Realizing system value takes explicit and additional effort on behalf of senior leadership. In the case of KP HealthConnect, project support came from the top down, beginning with the board of directors. In addition to providing financial backing, the board determined the project to be a top priority for 3 consecutive years. Accordingly, Kaiser Permanente built a governance structure, designated executive sponsors and accountable leaders, and developed cross-organizational collaboration teams to ensure ongoing progress toward this singular goal.

Constructing a fully integrated program-wide system necessitated a collaborative build approach supported by a strong partnership among functional leads in areas such as IT, finance, and clinician leadership. At the national level, project leaders defined shared elements across the organization, such as common data definitions, models, and interfaces. At the regional level, physician leaders' participation was critical to defining system needs from a clinical perspective. Physician leadership and feedback were imperative to ensure the new system build would be additive to current

Fulfilling the Promise of Integrated Care

"When the board of directors blessed and funded the creation of KP HealthConnect, we saw it not only as a strategic investment in our competitive future but an affirmation of our brand. Kaiser Permanente was just developing a highly successful "Thrive" advertising campaign built around empowering individuals to manage their own health, and KP HealthConnect was a major means to that end. It was also the key to fully providing "patient-centered" health care and service, which would differentiate us in the marketplace."

—Phil Marineau, retired CEO, Levi Strauss, and former board member, Kaiser Foundation Health Plan and Kaiser Foundation Hospitals, Inc.

workflows, and the transition would not disrupt current operations. Ultimate responsibility for the success of the implementation lay with both national and regional leadership. Monthly meetings between these leaders contributed to timely and successful project completion by ensuring that vision and strategy were reinforced, and all perspectives were considered in the new centralized system.

Lessons Learned

The journey to innovate a new type of EHR system was a monumental effort that gave Kaiser Permanente the gift of learning. Leadership throughout the organization was critical to the project's success. Leaders from the health plan, hospitals, physician groups, and IT drove the cultural shift necessary to adopt a new system at this scale.

Working collectively to incorporate ideas and needs from each part of the organization meant that key elements would be reflected across all regions. By building an integrated system as a shared resource, Kaiser Permanente would realize cost savings in the form of reduced overhead for maintenance and upgrades. Having some centralized control could ensure that large system upgrades would be completed without disruption to local operations.

Upgrading a major IT system also served as a magnifier of broken processes. Over time, established workflows are at risk of becoming obsolete, and a demanding environment may provoke workaround fixes rather than sustainable solutions. The task of building KP HealthConnect presented an opportunity to revisit old processes and forced the creation of more efficient workflows optimized for the new system. Addressing issues at the outset was preferable to delaying until after the new system was implemented.

Leveraging KP HealthConnect for strong clinical and business outcomes

- **Healthy Bones Program**: Multidisciplinary teams who took proactive measures saw a 37% decrease in hip fractures. Steps taken by care teams included proactive management, identification of high-risk patients, closing care gaps, and overall promotion of healthy behaviors. *[The Permanente Journal, Winter 2013]*

- **kp.org**: Patients with online access to their own EHR are 2.6 times more likely than non-users to remain Kaiser Permanente members. *[The American Journal of Managed Care, July 2012]*

Recognizing that clinical needs may differ, each region was given the flexibility to tailor KP HealthConnect to its own market and workforce requirements. Respecting differing priorities and variations in work processes was paramount. KP HealthConnect would not be successful if not fully integrated into everyday operations that are best determined at regional and local levels.

Conclusion

KP HealthConnect has been transformed in multiple ways since its initial go-live in 2005. Used as a digital health tool, KP HealthConnect is now available on mobile devices for physicians and provides health care providers with actionable data.

KP HealthConnect has added value to the business and has improved the patient experience by providing data and insights to develop better approaches to care and engagement. Examples can be seen in initiatives such as the Healthy Bones Program and eConsult, which leverage KP HealthConnect and assist physicians in providing better patient care.

The system continues to add value today. In May 2019, Kaiser Permanente announced a partnership with a third-party vendor to include social services data in KP HealthConnect. This information will help Kaiser Permanente health providers connect patients to community services to address social needs that support total health. This resource will be available to all members by 2022.

To express interest in a future webinar on health IT or a related topic, please contact us at kp.org/international.

Sources
Liang, L. 2010. *Connected for Health*. San Francisco, Jossey-Bass.
Garrido, T. and B. Raymond, L. Jamieson, L. Liang, A. Wiesenthal. 2004. "Making the Business Case for Hospital Information Systems—A Kaiser Permanente Investment Decision*." J Health Care Finance*. 31 (2): 16-25.
Ferguson, Jamie. Interview, December 2018.

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