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Late Stakeholder Engagement Impacts on Electronic Health Record Transformations within Hospitals and Affiliated Clinics

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Abstract: Electronic health records represent a modern clinical tool that can digitize hospital practices and promote interoperability. Xovap Medical, a pseudonym for a clinical system comprising six hospitals and 24 affiliated clinics, failed to digitally transform toward EHR as a result of later stakeholder engagement. Clinical leaders recognize the need for EHR adoption to facilitate high-quality patient care, promote diagnosis accuracy, and modernize outdated workflows. A narrative literature review was conducted to understand successful strategies for EHR adoption when engaging stakeholders and the risks associated with late engagement. The review suggests early stakeholder engagement as a critical component in successful EHR transformations. The findings suggest leaders must engage physicians to help select EHR tools, utilize physician knowledge to inform training, promote feedback cycles that help sustain EHR adoption, and build trust that the EHR provides high-quality patient care through involvement in the adoption process.

Keywords: EHR Transformation, Technology, Hospitals, Efficiency, Stakeholder Engagement

Introduction

Xovap Medical, comprising six mid-sized hospitals and 24 clinics, sought to digitally transform its operations by adopting electronic health records. Leadership outlined three goals for the transformation towards EHRs: improved quality of patient care, increased interoperability, and enhanced data analytics capabilities. Mounting pressures to digitize their processes, leading to shortcuts, have diminished their change management process. Within the shortcuts, late stakeholder engagement contributed to skepticism, which ultimately led to the digital transformation failure. Ultimately, the lack of support among physicians resulted in resistance to EHR adoption, costing Xovap Medical money, time, and trust.

Today, hospitals and healthcare systems such as Xovap Medical seek to transform their medical reporting toward EHRs. The Health Insurance Portability and Accountability Act, introduced in 1996, initiated the digital transformation of patient health records (Adekunle et al., 2025). HIPAA introduced the idea that ease of information exchange via digital means would increase the quality of patient care across hospitals and private offices (Adekunle et al., 2025). Electronic Health Records (EHRs), the resulting digital solution to achieve HIPAA compliance, represent modern practices for storing patient health information to enhance communication between providers, improve the quality of patient care, and ensure accurate data (Palabindala et al., 2016). HIPAA represented a fundamental shift in clinical policy, raising the need for clinical leaders to address digital change within their hospital. Leaders must reimagine clinical workflows and focus on interoperable

systems that enhance communication. Clinical leaders now face technological and organizational considerations when adopting an EHR. As hospitals and practices look to shift towards EHRs, understanding the importance of stakeholder involvement remains critical. Adopting a new healthcare process, especially one that utilizes digital means, requires consideration of change management. Leaders seeking to increase the adoption of EHRs must design systems that meet the needs of users and incorporate their feedback (Heath & Porter, 2019). Stakeholder engagement, often with physicians, remains critical to an in-depth understanding of how to impact the culture of a hospital (Talwar et al., 2023). Failure to consider the end user and stakeholders results in resistance to digital transformation, leading to increased costs, limited adoption, and extended timelines for modernization (Heath & Porter, 2019). Overall, healthcare organizations seeking to transform their operations through the use of an EHR must consider user feedback to ensure the successful adoption of new processes.

Problem Statement

As of 2021, only 70% of hospitals have adopted an interoperable EHR, leaving the remaining without standardized health record practices (Barker et al., 2023). Moreover, as of 2023, only 70% of hospitals engage in the four measures of interoperability, including sending, receiving, finding, and integrating patient health data (Gabriel et al., 2024). Offices lacking interoperability experience stagnation or declines in the quality of patient care, an increased risk of outdated patient health histories, and reduced government funding and incentives (Adekunle et al., 2025). The generic problem remains that hospitals and private practices struggle to digitally transform their operation, leading to failures in adopting an EHR system. The specific problem is that EHRs do not meet user needs, rendering them infeasible for day-to-day operations due to a lack of physician engagement early in the transformation. The literature review seeks to address the research question "How does late stakeholder involvement hinder EHR adoption, and what strategies can facilitate successful digital transformation towards EHRs in hospitals and clinics?"

Significance

The significance of the study lies in identifying impacts to EHR transformations when involving stakeholders too late in the process and exploring strategies to mitigate adoption resistance. Hospitals and clinical systems looking to modernize and receive government incentives must convert to an EHR (Adekunle et al., 2024). To successfully adopt a new EHR into a healthcare system, leaders must gain physician buy-in. Physicians cannot provide quality patient care when they have limited involvement and transparency in significant process changes (Miller, 2017). The importance of EHR adoption lies in hospital operational success and increasing patient quality of care. By understanding the negative impacts of Physician exclusion, leaders can identify the risks to change management associated with EHRs.

Furthermore, understanding the ramifications of excluding physicians from initial transformation plans helps leadership improve its digital transformation strategy (Holmgren et al., 2022). Identifying theories that clinical leaders can apply to EHR transformations aids in strategy development (Holmgren et al., 2022). The techniques inform stakeholder inclusion, process considerations, and best practices for user adoption, all of which allow clinical leaders to build sustainable practices involving EHRs. Ultimately, the study examines the significance of stakeholder involvement in conjunction with operational models in developing a digital EHR transformation strategy.

Methods

Databases and Sources Used

The literature search included research databases such as ProQuest and Google Scholar. Google Scholar was the primary source for all peer-reviewed journal articles, books, and conference papers. ProQuest identified all dissertations relevant to the study. Grey literature encompasses reports and conference proceedings that are relevant to the discussion topics.

The methodology for the study includes a systematic literature review focused on understanding the complexities of digital transformations of hospitals toward EHRs. The primary search terms used for the literature review included "Electronic Health Record", "EHR", "Digital Transformation", "Healthcare Digital Transformation", "EHR Adoption", and "Digitizing Healthcare". Terms such as "EHR" and "Electronic Health Record" were selected because they are the primary focus of the digital transformation at Xovap Medical. Terms such as "Healthcare Digital Transformation" and "Digitizing Healthcare" were chosen as secondary terms to broaden the literature review and examine characteristics of transformations that occur because of EHR implementations. The search results in information about the core topics of the review, including electronic health records and the adoption of EHRs in a hospital's digitization plan. Furthermore, search terms contained the AND Boolean to identify sources that used a conjunction of the terms, including "EHR" AND "digital transformation". Utilizing Boolean terms such as "EHR" and "digital transformation" helped identify articles not part of single search terms and allowed for enriched sources focusing on organizational aspects of change in healthcare that focus on EHRs. Additionally, the Boolean operator "OR" was used to find articles under different nomenclatures about an identical topic, for instance, "EHR" or "electronic health records". The inclusion of "OR" search criteria helped find articles that mentioned the same topic but referenced it differently to ensure a comprehensive search for electronic health records was conducted. Finally, the use of synonyms increased search results but required additional analysis to ensure adherence to the topic.

Inclusion and Exclusion Criteria

The included studies must provide empirical data on Electronic Health Records, the adoption of Electronic Health Records, or digital transformations in healthcare within the last 10 years (2015-2025). The date range allows the study to encompass long-term impacts of EHR adoption and to include relevant assessments from today's clinical climate. Furthermore, sources must have clear, direct, and focused research questions that utilize a substantiated research approach. An emphasis was placed on ensuring the validity of the research method and approaches taken by the researchers. Journal articles focusing on private practices were excluded due to lack of relevance towards Xovap Medical EHR adoption. Studies lacking a literature-supported methodological approach, clarity of approach, or direct relationship to the topic under investigation were also excluded.

Screening and Selection Process

The initial search yielded 745 articles. Screening focused on identifying titles that contained the key search terms using the "AND" Boolean operator. The result yielded a total of 75 articles needing full-text review. Each article was analyzed primarily for its relevance to the topic. The resulting filtered articles were then assessed for the academic rigor of the study and the comprehensive understanding of the topic. Articles that solely mentioned a term on the surface but did not have depth of information were eliminated. Finally, Xovap Medical is a mid-size system comprising a set of hospitals and affiliated practices. Therefore, articles needed to reference hospital transformations and contain a rigorous approach. The results comprised 53 articles.

Literature Review

Electronic Health Records History

Physicians historically documented patient medical records using paper-based charts (Evans, 2016). Around 1990, it became apparent that a comprehensive health record did not exist (Evans, 2016; Lorkowski & Pokorski, 2022). Physicians relied on a combination of digital and non-digital resources to create a patient's health snapshot (Lorkowski & Pokorski, 2022). Eventually, electronic health records (EHRs) were able to meet the needs of physicians to integrate notes, prescriptions, test results, patient messaging, and imaging within a single platform (Evans, 2016). The limited number of adopting hospitals found standardization difficulties. Thus, the Universal Medical Language System (UMLS) and Health Level Seven (HL7) were built to guide the terminology and build integration standards between EHR systems (Evans, 2016). In 2009, the Clinical Health Act (HITECH) introduced new standards for patient care facilities via digital platforms (Lorkowski & Pokorski, 2022). The act focused on the adoption of EHRs in hospitals, encouraging practitioners to provide increased quality care, care coordination, and health information exchange (Adler-Milstein & Jha, 2017). HITECH incentivizes clinical systems to digitally transform, offering financial bonuses when the transformation demonstrates "meaningful use" (Gettinger & Zayas-Caban, 2021). The criteria for qualification set standards for the digital transformation and require an assessment before hospitals receive the incentive (Adler-Milstein & Jha, 2017; Gettinger & Zayas-Caban, 2021). The history of EHRs underscores the importance of centralizing patient historical information, a concept that has gained government support over time.

Importance of EHR Transformations

Patient Care Quality

The importance of an EHR transformation at Xovap Medical lies in providing quality patient care. Physicians desire to deliver quality patient care (Kruse et al., 2016). By centralizing patient information into a digital platform, providers can make data-driven decisions (Upadhyay & Hu, 2022). Updating data in real-time ensures a comprehensive health record that allows physicians to increase diagnosis accuracy (Amlung et al., 2020). The accuracy of diagnosis instills patient confidence in care and strengthens the patient-provider relationship. Thus, establishing quality care through informed decision-making.

Communication between Providers and Patients

EHRs facilitate better communication between physicians, directly impacting the quality of care (Upadhyay & Hu, 2022). Wass et al. (2019) highlight that patients utilizing health portals have increased communication with providers. The EHR portals provide easy access to information (Wass et al., 2019). Increased communication fosters well-rounded treatment programs grounded in accurate and complete data (Spatar et al., 2019). Patient perceptions of quality care can increase through EHR adoption by making patients responsible for their health outcomes (Wass et al., 2019). Thus, increasing physician confidence in the EHR (Spatar et al., 2019). The quality of care from increased communication represents a primary impetus for EHR digital transformations.

Hospital Modernization

Furthermore, EHR transformations provide hospitals with opportunities to modernize and secure government funding for this purpose. To remain reputable and retain funding, modern hospitals must adopt EHRs (Amlung et al., 2020). Clinical settings must adopt digital practices to keep up with evolving healthcare demands and enhance data-driven decision making (Amlung et al., 2020). The adoption requires redesign of processes that promote

innovation and keep the hospital utilizing new technology (Upadhyay & Hu, 2022). Also, the HITECH Act helps promote the adoption by offering incentives toward modernizing hospitals (Kruse et al., 2022). The funding helps offset costs associated with EHR transformations, enticing individuals to modernize their organization (Kruse et al., 2022). EHR adoptions create conditions to modernize practices and help clinical settings remain in business.

Clinical Care Efficiencies

Finally, the significance of EHRs lies in enhancing workflow efficiencies. Introducing EHRs can streamline efficiency by aligning the tool to physicians' workflows (Kruse et al., 2022). The system design can enhance clinical routines, create efficiencies such as streamlined prescription ordering, and reduce documentation errors (Spatar et al., 2019). EHRs also help reduce redundancy and repetition through automation (Upadhyay & Hu, 2022). Workflow efficiencies contribute to a reduction in the time spent on the process, which in turn improves patient care outcomes (Kruse et al., 2022). The use of EHRs as a mechanism to facilitate efficiency motivates clinicians to adopt the new practice.

Benefits of Successful EHR Transformations

Harnessing effective change management remains a critical factor of successful EHR transformations in hospitals. Barrett and Stephen (2018) found that individuals benefit when leadership considers the socio-technical aspects of change management. Both components are critical to the successful adoption of EHRs and directly apply to the resistance MeridianHealth faced in its initial adoption.

Social Benefits of Successful EHR Adoptions

Social aspects of change management focus on the individual, their interactions, and feelings around the EHR adoption. Impacted individuals benefit from communities supporting the change (Barrett & Stephens, 2017). Communities promote centers of learning and prompt a shared commonality of learning something new, together (Sieck et al., 2020). During group trainings, individuals ask questions, share tips, and raise important concerns before the EHR adoption phase (Sieck et al., 2020). The transformation facilitates a profound sense of community within a hospital system and enhances acceptance of change (Barrett & Stephens, 2017). Gatiti et al. (2021) found that successful EHR adoption leads to increased transparency and shared responsibility of the tool. Xovap Medical, if successful, can establish a community of clinicians advocating for successful EHR adoption. Successful EHR adoptions improve communication among the adoption team.

Patient Care Outcomes

Fully integrated EHRs with complete adoption can improve patient quality health outcomes. EHRs facilitate enhanced data exchange patterns that centralize information and share across hospital systems (Jiang et al., 2023; Sieck et al., 2020). Effective integrations also promote sharing between physicians, healthcare systems, and public health agencies (Jiang et al., 2023). The continual streams of relevant data allow clinicians to make appropriate, informed diagnoses. Thus, increasing transparency around diagnosis and treatment plans and strengthening patient perception of quality care (Cifra et al., 2021). Patient feedback directly impacts physician confidence in the tool’s ability to provide information (Jiang et al., 2023). At Xovap Medical, a successful adoption could solve concerns about data relevance and diagnosis accuracy. The circular relationship cements the importance of successful EHR transformation in increasing patient care quality.

Impacts of Late Stakeholder Involvement

Design Flaws

Design flaws ensue when stakeholder engagement occurs too late in the digital transformation process (Palabindala et al., 2016). Each hospital functions differently, and tools must support the complexity of the Physician's day (Heath et al., 2022). Without constant feedback and iteration when selecting and implementing the EHR, hospitals may find tools that lack all necessary features to ensure quality patient care (Gesulga et al., 2017). The design discrepancies that render EHR tools unusable (Palabindala et al., 2016). Perception of EHRs' ease of use and efficiency among physicians diminishes when the EHR cannot support basic workflows (Gesulga et al., 2017). Effective involvement, at Xovap Medical, should include opportunities to modify workflows, customize settings, and identify avenues the tools can meet physicians' clinical needs to support patient care (Heath et al., 2022). The lack of accommodations in the software poses a significant risk to tool adoption due to the infeasibility of the solution to meet usability expectations.

Workflow Disruptions

Redesigning daily work streams to accommodate an EHR presents another risk that plagues Xovap Medical. Physicians adopting EHRs face a loss of autonomy through reduced control over how to structure their workday (Barrett, 2018). Work routines signify critical components of a successful patient-provider relationship, allowing physicians enough time to provide quality care to the patients on their schedule (Malm-Nicolaisen et al., 2022**)**. With little input on how an EHR impacts work, physicians feel powerless over the changes (Barrett, 2018). By introducing new tools without their involvement, physicians must maintain the same patient load, uphold quality care, and additionally redesign all working patterns (Barrett, 2018). Even if the product meets all the hospital's needs, the adoption process takes time to incorporate new technologies into established workflows, causing disruption (Gesulga et al., 2017). With already busy schedules, physicians struggle to reserve time to adopt a new tool, which requires slowing down to learn something new (Gesulga et al., 2017; Heath et al., 2022**)**. This results in increased resistance through slow or partial adoption, threatening patient care quality and interoperability of data. Such is the case for Xovap Medical, which faces partially adopted systems impacting care quality. Late physician involvement creates a loss of professional autonomy, threatening EHR adoption.

Detriment to Patient–Provider Relationship

Furthermore, EHRs designed without consideration for environmental impact can compromise the patient-provider relationship (Eberts & Capurro, 2019). Physicians establish trust and respect within the community by building rapport with patients. EHR adoption requires shifting focus from patients to incorporating tools (Barrett, 2018). Physicians with late involvement in digitization cannot properly prepare for patient impacts (Barrett, 2018). EHRs that do not facilitate communication erode patient trust, which directly impacts physician reputation and leads to a lack of adoption (Eberts & Capurro, 2019). The resistance to change increased when physicians sense patient dissatisfaction **(**Heath et al., 2022**).** At Xovap Medical, mounting resistance, stemming from perceived lower-quality care and the loss of patient-provider relationships, resulted in EHR adoption failure. Threats to communication and strong patient-provider relationships weaken EHR adoption efforts.

Legal Liability Concerns

Finally, physicians have concerns about autonomy as it relates to their liability in patient safety and diagnosis. EHRs serve as an aid for government-compliant medical record documentation and also contain features that aid in diagnosis and treatment plan suggestions (Gesulga et al., 2017). The potential for misdiagnosis raises concerns about physician

liability when relying on digital tools. Physicians remain responsible for patient care, and being involved late in a fundamental shift in how they diagnose patients causes resistance (Keshta & Odeh, 2021). Physicians do not want to be held liable for misdiagnosis resulting from the misuse of software (Gesulga et al., 2017). Improper diagnosis has legal and reputational implications, both of which lead to initial distrust of an EHR (Gesulga et al., 2017). Physicians must consider the ethics around the data they create and store to ensure proper adherence to HIPAA (Hare, 2022). Xovap Medical's lack of proper collaboration during the initial phases of the transformation increased risks of misuse and impacts liability risk for physicians (Gesulga et al., 2017; Keshta & Odeh, 2021). The risks associated with misuse resulting from improper training and guidance lead to a lack of trust in the EHR and stop adoption. Ultimately, late engagement of physicians does little to address data security and liability considerations that impact EHR adoption.

Impacts to Training and Adoption

Training creates a shared environment focused on transitioning teams towards a new process. Gesulga et al. (2017) report that many physicians lack opportunities for training. Sometimes physicians receive training but find that the training does not focus on tangible examples (Barrett, 2018). Physicians' specializations often require specific considerations, and training lacks the flexibility to address user concerns (Barrett, 2018; Heath et al., 2022). Instead, generic trainings cover a wide breadth of information without depth or tailoring to the adoptees (Gesulga et al., 2017). The widespread confusion created by this issue leaves professionals unsure about how to use the product and struggling to find the critical reporting measures required to meet the HITECH Act (Malm-Nicolaisen et al., 2022). Such difficulties result in physicians misinterpreting the intended user of the EHR, compromising quality care and proper practices for shortcuts that endanger patient safety (Heath et al., 2022). Without confidence in using the system, physicians will find workarounds or revert to relying on paper-based charts rather than embracing digital transformations towards EHRs (Gesulga et al., 2017). Late stakeholder involvement can impact training effectiveness and diminish confidence in the EHR.

Social Barriers to Adoption

Xovap Medical's EHR transformation suffered from a lack of confidence and credibility with its stakeholders. Physician involvement late in the process poses two fundamental risks towards digital transformation: Skepticism and Lack of Trust (Bakhshi et al., 2025; Heath et al., 2022). When adoptees' curiosity rises with little to no direct addressing of concerns, the increase in skepticism will sink any progress made towards change management (Sadoughi et al., 2019). Trust, if any already exists, diminishes as questions go unanswered and stakeholders are left confused as to the purpose and progress of the transformation (Bakhshi et al., 2025). The barriers led to the failure of Xovap Medical EHR transformation.

Skepticism Impacts

Skepticism represents an inherent lack of transparency around the digital transformation towards EHRs (Heath et al., 2022). Often, the unknown centers on why a change must occur (Malm-Nicolaisen et al., 2022). Gesulga et al. (2017) note that a root cause of skepticism is the effectiveness of the EHR in providing patient care. Bakhshi et al. (2025) highlight additional skepticism that arises around unanswered expectations of the EHR and the uncertainty associated with change management when transitioning to an EHR. Failing to identify a technical partner early in the project leads to increased confusion and resistance from individuals expected to adopt the new technology (Giussi et al., 2017). Mounting skepticism leads to resistance among staff and management, which can hinder all plans for change management (Gesulga et al., 2017). Failure to increase transparency through clear communication, direct addressing of concerns, and early stakeholder involvement often

leads to transformation failures (Saldanha, 2019). Xovap Medical's physician suffered from a lack of transparency, which raised skepticism and ultimately sank the transformation process. Skepticism impacts successful EHR adoption by hindering progress and eroding trust.

Lack of Trust

The lack of communication around changes prevents trust and resistance (Heath et al., 2022). Transparent communication functions on two levels: Leaders to Physicians and Physicians to Patients. Without both critical communication channels, people will not believe that EHR transformations benefit them, nor will they maintain quality care (Talwar et al., 2023). Physicians possess the technical skills to translate medical concepts from the EHR to the patient, as well as the soft skills necessary to adopt and integrate the EHR into their workflow (Talwar et al., 2023). Involving physicians late in the transformation degrades trust because it debilitates a central communication checkpoint between all stakeholders (Deokar & Sarnikar, 2016). Deficiencies in transparent communication result in a higher barrier towards change management and lead to transformation failures (Saldanha, 2019). Xovap Medical suffered from a lack of stakeholder engagement, which cut off communication channels and stalled adoption. Clear communication has a direct impact on physicians' trust and willingness to adopt an EHR.

Impact of Failed Digital Transformations on Organizational Health

Organizations, such as Xovap Medical, that fail to successfully transform toward using an EHR find continual resistance leading to reversion to old patterns (Vanderhook & Abraham, 2017). EHR tools that do not facilitate appropriate user workflows cause physicians to compensate for missing functionality (Colicchio et al., 2019; Vanderhook & Abraham, 2017). For example, reverting to paper documentation outside of the EHR platform can facilitate documentation shortcomings (Colicchio et al., 2019). Some clinical settings maintain a hybrid model, finding workarounds within the EHR to achieve a desired outcome (Colicchio et al., 2019). The practice undermines the intent to modernize patient health records and introduces more barriers to change management (McCrorie et al., 2019). Specifically, a failed transformation creates increased resistance in the next iteration, due to the fear of having to repeat a process and not learning from the original mistakes (McCrorie et al., 2019). Initial failures of an EHR adoption leave lasting impacts and increase resistance for the second attempt.

Ethical Considerations around Digital Transformations to EHRs

Patient Data Privacy

Holistic digital transformations towards EHRs require ethical consideration before implementation. Clinical leaders need to address concerns around patient data privacy (Hare, 2022). Clinicians should only share Personal Health Information (PHI) with relevant clinicians, and clinical leaders must limit access to EHRs to relevant personnel (Agarwal & Peta, 2024). Hospital leaders at Xovap Medical must ensure that EHR tools offer data privacy and protection policies that can be enforced across their clinical systems. Failure to properly enforce data policies will result in the leakage of PHI, leading to legal ramifications that will halt the EHR transformation entirely (Agarwal & Peta, 2024; Keshta & Odeh, 2021). Patient's perception of data exposure will also weaken confidence in the tool and impact physician willingness to champion the change (Keshta & Odeh, 2021). Overall, data protection and privacy require consideration before EHR adoption.

Ethical Training

Another consideration for Xovap Medical is to include ethical training when adopting an EHR. The Hippocratic Oath or the ethics behind the oath need consideration (Hare, 2022). Hare (2022) finds that society asks doctors to uphold ethical standards when treating patients however, medical technology does not require consumers to take an ethics-related course or oath to be utilized (Hare, 2022). As the message's criticality increases, so must the scrutiny with which we select our target user population (Hare, 2022). Life-threatening actions need rigorous user testing to ensure the tool minimizes the risk of oversight and maximizes quality patient care (Gesulga et al., 2017). Designing health-based software requires attention to ensure the ethical protection of the software users and the data (Keshta & Odeh, 2021). Failure to account for usability and test thoroughly to ensure the protection of society results in a life-threatening, unethical technology.

Effective EHR Feedback Loops

Ongoing Feedback Loops

Acquiring feedback requires outlining specific processes that allow for trust and open communication. Cifra et al. (2021) highlight effective feedback characteristics to include accuracy, consistency, time-relevance, delivery, and possibility for iteration. Moreover, effective feedback prompts additional conversations on how to incorporate or resolve concerns raised in the initial session (Cifra et al., 2021). Leaders seeking information should conduct feedback studies as close to the clinical event as possible and deliver the sessions that limit cognitive load (Cifra et al., 2021). Xovap Medical failed to engage with physicians promptly, and thus, the feedback they received offers little insight into the EHR transformation. Instead, clinical leaders at Xovap Medical should have established feedback loops throughout the EHR transformation with regular checkpoints to ensure smooth adoption (Golden et al., 2021). By including feedback on technical and ethical concerns, clinical leaders could have decreased adoption resistance, prompting a smooth EHR transformation. The feedback loop and scope remain a critical components of successful EHR adoption.

Product Design Feedback Loops

Physician engagement aids product design by identifying necessary features of the tool. Product-behavior focused feedback loops ensure EHRs meet the workday needs of clinicians (Cifra et al., 2021). The loops provide a platform for improvement, feature requests, and customizations that enhance the physician experience with the EHR (Cifra et al., 2021). For example, effective processes for gathering feedback can include pre- or post-implementation testing and usability interviews (Tutty et al., 2019). The continuous feedback identifies areas of improvement to ensure that quality patient care remains at the forefront (Iseal & Frank, 2024). Successful feedback mechanisms facilitate improved adoption rates because tools meet the feasibility of the physicians (Gatiti et al., 2021). Effective product feedback loops ensure EHRs remain relevant to the hospital and reduce misuse.

Post-Implementation Feedback Loops

Maintaining leadership and physician alignment requires a feedback loop to sustain EHR transformations. Iseal and Frank (2024) find that progress updates help inform clinical leadership of impediments encountered after fully adopting an EHR. These ceremonies facilitate strong relationships between leadership and frontline workers (Golden et al., 2021). Some examples include engaging physicians through consultation sessions, surveys, interviews, and focus groups with the goal of process improvements (Tajirian et al., 2022). Tajirian et al. (2022) also found a monthly newsletter to be an effective feedback channel to keep physicians informed and gather feedback for reinforcing strategies of EHR adoption.

Xovap Medical should conduct regular check-ins to ensure alignment of EHR rollout, help increase confidence and adoption with physicians (Golden et al., 2021). The mechanisms keep communication open between all parties involved with the EHR and facilitate continual alignment on digital strategy. Post-implementation feedback loops help sustain alignment on EHR practices.

Strategizing using the Stakeholder Engagement Theory

Leadership at Xovap Medical could benefit from utilizing the stakeholder engagement theory. The theory emphasizes sustainable relationships between an organization and its stakeholders by promoting a collaborative and iterative process to address both benefits and risks (Desai, 2018; Freeman et al., 2017).

Identifying and Understanding Stakeholders

Clinical leaders at Xovap Medical need to identify potential stakeholders to incorporate in the planning phase. Freeman et al. (2017) suggest assessing the list of potential stakeholders to determine their interests and influence. Then, leadership should select individuals to champion the change and build relationships based on the knowledge obtained from those stakeholders (Freeman et al., 2017). Kaiser Permanente, an EHR transformation success case, selected stakeholders through a systemic approach focusing on individuals who had operational expertise which included physician leaders with experience using healthcare IT (Otte-Trojel et al., 2015). Approach. At Xovap Medical, clinical leaders must identify influential physicians who are genuinely interested in transforming the hospital and clinical system towards an EHR. By selecting target stakeholders, Meridiain HealthConnect can significantly increase the likelihood of successful adoption by aligning goals between leadership and stakeholders (Otte-Trojel et al., 2015). The result enables maximum influence across all clinicians and facilitates the spread of the EHR across all affiliated practices (Freeman et al., 2017). Targeted identification of stakeholders will reduce adoption barriers at Xovap Medical.

Building Trust

Utilizing the stakeholder engagement theory builds trust between leaders and their organizations. The theory suggests honest communication around organizational decisions, processes, and trade-offs helps reduce distrust (Kujala et al., 2022; Shah & Guild, 2022). Moreover, Deokar & Sarnikar (2016) highlight that physicians' primary source of distrust stems from a lack of transparency. Digital transformations fail when skepticism inhibits openness to change (Saldanha, 2019). Hospital leaders introduce skepticism by excluding impacted populations from the EHR transformation (Bakhshi et al., 2025). A significant benefit is increased transparency and decreased resistance to change (Desai, 2018). Increasing transparency allows leadership to align strategies with the values of the stakeholders, building trust (Shah & Guild, 2022). The use of stakeholders as a means of exploring potential gaps in the approach helps reduce the probability of resistance.

Shared Goals through Collaboration

The stakeholder engagement theory encourages creating shared goals between leaders and stakeholders. The importance lies in establishing a mutually beneficial relationship (Freeman et al., 2017). Providing stakeholders with answers regarding an organization's motivations for change enhances accountability and confidence in the change (Kujala et al., 2022). Xovap Medical needs to build a vision for EHR adoption with physician stakeholders. The new operational patterns will support both groups' ability to lead an effective change (Freeman et al., 2022). Hospital leadership should also engage physicians as a measure of increasing confidence and gaining champions of the change by sharing outcomes (Bakhshi et

al., 2025). Shared goals promote understanding across those leading the change and those impacted by the change, allowing for successful EHR adoption.

Continual Engagement and Iteration

The stakeholder engagement theory also focuses on feedback to promote continuous improvement. Effective communication with individuals closest to the project informs decision-making (Freeman et al., 2017; Shafique & Gabriel, 2022). Hospital leaders must design processes that incorporate a stakeholder feedback loop to make effective decisions during digital transformations (Malm-Nicolaisen et al., 2022). Xovap Medical's initial rollout of the EHR revealed that no feedback loop existed, as the product and process did not integrate into the physician's workflow. The overall lack of stakeholder communication mounted towards resistance because the change was not mutually beneficial to those impacted (Malm-Nicolaisen et al., 2022). Suppose leaders at Xovap Medical had built regular communication into their process, fewer surprises would have occurred during the training phase. The feedback would have facilitated strong communication and reduced skepticism of EHR adoption (Golden et al., 2021). By utilizing the stakeholder engagement theory, leaders can establish communication patterns during the planning phase to incorporate Physician feedback constructively. The patterns directly impact adoption success.

EHR Transformation Utilizing Kotter's 8-Step Change Framework

Kotter's 8-Step method guides organizational change management through eight distinct implementation steps (Rothwell et al., 2015). The methodology contains three themes: creating change conditions, introducing the change, and sustaining the change (Rothwell et al., 2015). As Xovap Medical seeks to digitally transform to and EHR, clinical leaders should employ the model to ensure a sustainable adoption (Saldanha et al., 2019).

Increasing Urgency

Clinical leaders should make the case of urgency to prompt individuals for change (Rothwell et al., 2015). Leaders set the conditions for change by prioritizing EHR adoption as essential for the hospital's survival and crucial to delivering high-quality patient care (Talwar et al., 2023). Leaders who can empathize with physicians' desires to deliver quality care create effective conditions for change towards EHR adoption (Heath et al., 2022). At Xovap Medical, leadership needs to educate its team about the consequences if the EHR transformation fails. Helping individuals understand the importance of modernization to provide high-quality care will elevate the motivation to change (Talwar et al., 2023).

Building Coalitions

Step 2 focuses on building coalitions of individuals to support changes. Identifying teams of physicians who will design, adopt, and educate others around necessary EHR practices alleviates barriers and resistance to change (Arabi et al., 2022). Xovap Medical initially failed to find champions. The next attempt at transformation must include physician partners ready to assist in educating the team. The coalition of individuals will enhance the creation of conditions for change and the setup for vision creation.

Vision

The vision sets the intentions of the EHR transformation. Leaders must craft a vision inclusive of stakeholders' viewpoints (Heath et al., 2021). By incorporating physicians in vision creation, the individuals leading the change have a stake in the success of the transformation (Rothwell et al., 2015). Xovap Medical's initial inability to incorporate stakeholder feasibility into its vision promoted rejection. Instead, clinical leaders need to

design a vision together. The shared collaborative vision fosters transparency, leading to trust in the change (Heath et al., 2021). The vision helps facilitate communication.

Communication

As part of step 4, Clinical leaders must identify physicians to champion communicating the vision among the team (Miller, 2017). Champion identification allows leadership influence to spread and champions to own an autonomous part of the EHR transformation process (Acharya & Werts, 2019). At Xovap Medical, incorporating stakeholders earlier will allow for the easy identification of physicians willing to communicate the vision and importance of the change.

Enable Action

The following steps focus on taking action on the vision. During Step 5, the team engages in education through training to implement EHR adoption across the clinical system (Miller, 2017). Xovap Medical leaders should address barriers to EHR adoption, empowering individuals to take action and learn the new process (Acharya & Werts, 2019). Early stakeholder involvement can prevent the critical levels of resistance Xovap Medical previously faced, and instead focus on addressing stakeholder concerns during the action phase (Eberts & Capurro, 2019).

Quick Wins

Step 6 emphasizes highlighting short-term wins to demonstrate the feasibility of the vision (Trawick & Carraher, 2023). For example, physicians can demonstrate the use of the EHR in a limited use case to entice individuals about the effectiveness and improvements a digital system brings. Early wins have a greater impact when the individuals affected by the EHR transformation highlight its benefits (Larsson & Thesing, 2024). By showing stakeholders their impact, clinical leaders strengthen trust and justify reasons for digitization through an EHR (Saldanha, 2019; Trawick & Carraher, 2023).

Sustaining Momentum

Step 7 focuses on accelerating more projects aligned with the original vision of the transformation (Larsson & Thesing, 2024). Clinical leaders should utilize all opportunities to showcase the community of support for EHR operations. By introducing more training, workflow changes, and new process improvements, the EHR becomes ingrained in the clinical system's DNA (Miller, 2017). Once Xovap Medical achieves some adoption success, it needs to sustain the change and provide additional support. Addressing questions and potential forms of resistance can help spread the adoption (Miller, 2017). The momentum sets up for sustaining organization changes.

Make it Stick

Finally, Xovap Medical leaders need to sustain the changes by making EHR use part of its culture. General Pediatrics at St. Christopher’s Hospital for Children in Philadelphia, PA sustained their EHR adoption by incorporating feedback into the EHR and providing weekly updates as to changes, enhancements, and upgrades (Acre, 2017). To ingrain EHRs within hospital culture, physicians need to adopt the process, and leaders need to continually reassess team feedback (Deokar & Sarnikar, 2016). Leaders should anchor changes in the company culture by building success cases (Larsson & Thesing, 2024). Xovap Medical experienced low adoption because the EHR was not widely accepted as a cultural norm. By creating cultural norms that favor EHR adoption and learning, hospitals sustain the transformation through continual improvement (Larsson & Thesing, 2024). As they approach the transformation again, leaders need to gain momentum and make EHRs part of standard practice.

Recommendations

Identification of Suitable EHRs

To successfully build confidence in EHR tooling, clinical leaders must adopt tools that align with clinical workflow needs and facilitate high-quality patient care (Adler-Milstein & Jha, 2017). Instead, physician involvement early in the process helps ensure buy-in and build usable systems (Tsai et al., 2020). The readiness to accept feedback and iterate on a solution helps lower the barrier to adoption, allowing for a successful transition towards an EHR (Malm-Nicolaisen et al., 2022). Xovap Medical's lack of stakeholder engagement led to an unusable EHR, resulting in a digital transformation failure. Xovap Medical's ability to select an effective EHR will decrease physician liability, meet necessary documentation requirements, and reduce the daily processing overhead (Gesulga et al., 2017; Malm-Nicolaisen et al., 2022). Selecting an EHR based on stakeholder feedback can alleviate adoption resistance and promote successful EHR adoption.

Promote Training and Adoption

Successful EHR adoption for Xovap Medical requires comprehensive training that aligns individuals with the system's goals and functionality (Miller, 2017). In order to build confidence that an EHR upholds quality patient care, physicians must be involved in designing, implementing, and participating in training (Heath et al., 2022). Ongoing education also remains pivotal for reducing errors, sharing responsibilities, and remaining abreast of changing medical reporting requirements (Palabindala et al., 2016). Kaiser Permanente successfully adopted an EHR by facilitating training to promote knowledge sharing among its staff (Otte-Trojel et al., 2015). In contrast, Xovap Medical suffered from a lack of training, which created resistance toward adoption. Facilitating value alignment of the EHR with the stakeholders ensures confidence in the tool (Heath et al., 2022). Building confidence in the tools' ability will benefit Xovap Medical's goal to roll out the EHR across its network by creating a community of individuals educated around the change (Heath et al., 2022). Comprehensive training and continual skill development ensure the adoption and use of EHRs in clinical settings.

Facilitate High Quality Patient Care

Furthermore, effectively transforming towards EHRs requires trust and confidence that the tool will facilitate high-quality care **(**Talwar et al., 2023**).** Xovap Medical's transformation suffered further due to the risks to patient care resulting from late stakeholder engagement. Clinical leaders seeking successful EHR transformations must include stakeholders to achieve the main goals of interoperability and enhancing quality patient care (Acharya & Werts, 2019). Sadoughi et al. (2019) highlight that physicians' concerns stem from the need to uphold autonomy and maintain high-quality patient care standards. Physicians desire to provide the highest quality, holistic care and view EHRs as a potential impediment when not involved in the initial stages of EHR transformations (Talwar et al., 2023). To prevent impacts on confidence, clinical leaders at Xovap Medical should adopt an EHR and prioritize including clinicians. Early physician involvement provides insights into patient care and manages the accuracy of patient diagnosis (Shah & Guild, 2022). By addressing top physician concerns, Xovap Medical can instill confidence in the patient care provided by the EHR and alleviate adoption resistance. Overall, physicians involved early in the transformation will adopt EHRs to provide high-quality care.

Engage Stakeholders Early

Change management processes represent another consideration impacting effective EHR transformations. Talwar et al. (2023) discuss the importance of incorporating change

management processes that include stakeholder engagement. By utilizing a process such as Kotter's 8-Step Change method, clinical leaders at Xovap Medical can introduce the hospital system to a manageable change (Larsson & Thesing, 2024). To effectively drive a digital transformation, leaders must find champions and set a clear vision for the change (Saldanha, 2019). General Pediatrics at St. Christopher's Hospital in Philadelphia, PA, found EHR adoption success by working with a clinical champion team to create buy-in from providers and senior staff (Acre, 2017). The importance of the change lies in aligning clinical organizations with a shared vision to adopt an EHR (Miller, 2017). Xovap Medical must facilitate transparent communication and consistent messaging around the EHR transformation (Giussi et al., 2017). By including stakeholders and facilitating plans around feedback, clinical leaders can maximize transparency and build confidence (Shafique & Gabriel, 2022). Xovap Medical leaders and clinicians will build trust as they partner to spread the adoption of EHRs across the entire clinical system. The earned trust enables the building of a coalition of individuals advocating for change in the clinical system, making an easier transition to the EHR. The use of a change management model can benefit Xovap Medical's transformation by establishing trust in the EHR.

Conclusion

Overall, Xovap Medical should consider technical and socio-technical aspects to promote a successful EHR transformation. Clinical leaders need to engage stakeholders early in the process. The identification of an EHR remains critical for ensuring tools meet the needs of clinicians. EHRs must prove to be functionally usable to promote efficiency but ultimately maintain high-quality patient care. Furthermore, physicians need support through holistic training to facilitate confidence and autonomy in the change. Utilizing change management theories establishes trust by measuring change effectiveness and involving stakeholders in the transformation. Ultimately, Xovap Medical must engage physicians to build strategies for a successful transformation towards an EHR.

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