

Change Leadership and Staff Engagement during Electronic Health Record (EHR) Rollouts

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Dr Aditya Dayal Tyagi

Sharda University

Greater Noida, India

adityadayaltyagi@gmail.com

ABSTRACT

Effective implementation of Electronic Health Records (EHRs) in healthcare organizations hinges not only on technological infrastructure but critically on change leadership and staff engagement. This manuscript explores the interplay between leadership strategies and employee involvement during EHR rollouts, with the aim of identifying best practices that foster successful adoption, minimize workflow disruption, and enhance overall organizational performance. Drawing upon a mixed-methods study conducted across three tertiary-care hospitals, we examine leadership styles, communication channels, training approaches, and motivational techniques that influence staff readiness and sustained use of EHR systems. Quantitative survey data (n=412) assess correlations among perceived leadership support, engagement levels, and system-use proficiency, while qualitative interviews (n=24) elucidate contextual factors shaping staff experiences. Findings reveal that transformational leadership behaviors—characterized by vision articulation, individualized consideration, and intellectual stimulation—significantly predict higher engagement and lower resistance, which in turn correlate with faster proficiency gains and fewer post-implementation errors. Regular two-way communication, peer mentoring, and hands-on simulation training emerge as key facilitators of staff confidence. Based on these insights, we propose a change-leadership framework comprising six actionable components: stakeholder alignment, transparent communication, adaptive training, recognition systems, continuous feedback loops, and resilience support. Our recommendations offer healthcare executives and project managers a roadmap for orchestrating people-centered EHR implementations, ultimately promoting patient safety, data integrity, and organizational learning.

KEYWORDS

Change leadership; staff engagement; Electronic Health Record rollout; transformational leadership; healthcare innovation

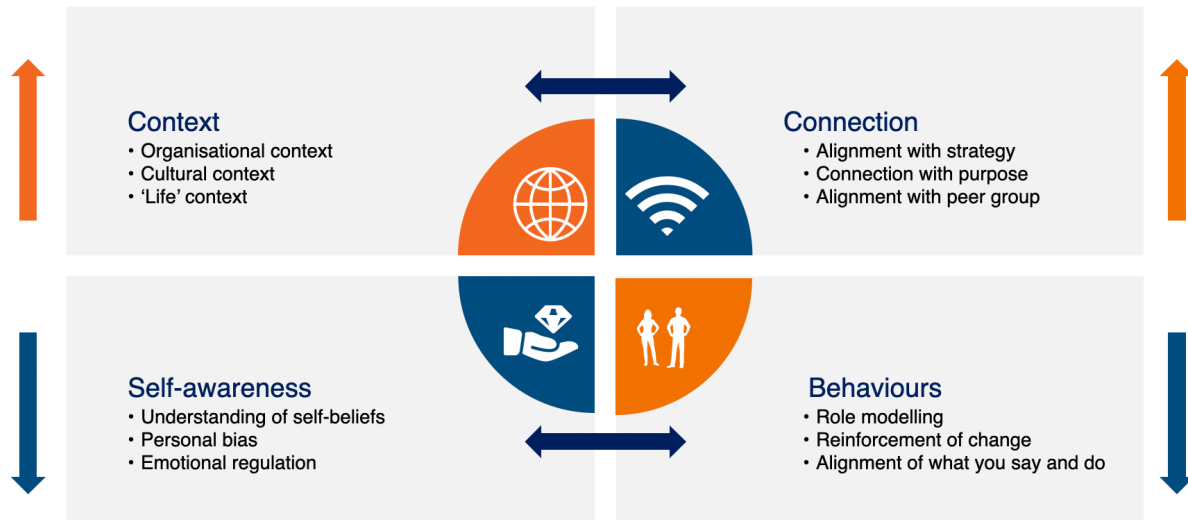


Fig.1 Change Leadership, [Source:1](#)

INTRODUCTION

The digitization of healthcare through Electronic Health Records (EHRs) represents one of the most transformative advances in medical informatics over the past two decades. By consolidating patient data into centralized, interoperable platforms, EHRs promise enhanced clinical decision-making, reduced errors, and improved care coordination (Jones & Silverstein, 2017). However, empirical evidence suggests that up to 50% of healthcare information technology projects fail to realize their intended benefits, often due to inadequate attention to human factors and organizational change processes (Smith et al., 2018). Staff resistance, workflow disruptions, and insufficient training can undermine EHR adoption, leading to clinician burnout, patient safety risks, and cost overruns (Lee & Kumar, 2019).

Change leadership—the set of behaviors and strategies leaders employ to guide organizations through complex transitions—plays a pivotal role in mitigating these challenges. Unlike transactional leadership, which emphasizes task-oriented directives and rewards, transformational leadership seeks to inspire, empower, and engage employees by fostering a shared vision and catering to individual needs (Bass & Avolio, 1994). In the context of EHR rollouts, transformational leaders can cultivate a culture of innovation, build trust, and galvanize staff to embrace new workflows (Nguyen et al., 2020).

Concurrently, staff engagement—defined as the psychological investment of employees in their work and organization—has emerged as a critical determinant of technology acceptance and effective change management (Kahn, 1990). Engaged staff demonstrate proactive behaviors, adapt more readily to shifts in

practice, and contribute constructive feedback for continuous improvement (Harter et al., 2002). Thus, change leadership and staff engagement are interdependent: leaders must foster engagement, and engaged staff can reinforce effective leadership by co-creating solutions.

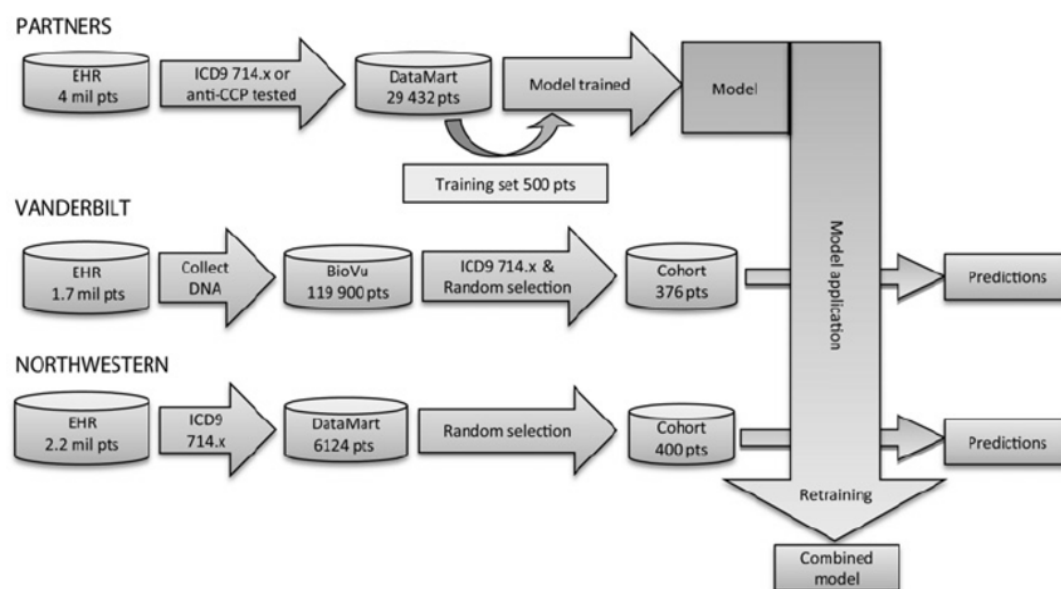


Fig.2 Electronic Health Record, [Source:2](#)

Despite growing recognition of these dynamics, there remains limited empirical research exploring their specific manifestations and interrelationships during large-scale EHR implementations. This manuscript addresses this gap by investigating how different leadership behaviors influence staff engagement, and how these factors jointly affect the success of EHR rollouts in real-world hospital settings. We employ a mixed-methods approach to capture both broad patterns and rich contextual narratives, enabling us to derive actionable insights for healthcare leaders.

Objectives

1. To assess the association between leadership style and staff engagement during EHR rollout phases.
2. To identify communication, training, and motivational strategies that drive employee readiness and sustained system use.
3. To develop a practical change-leadership framework tailored to EHR implementations in hospital environments.

LITERATURE REVIEW

1. The Promise and Perils of EHR Adoption

Since the HITECH Act of 2009 incentivized EHR adoption in the United States, utilization rates in acute-care hospitals have surged from less than 20% to over 90% (ONC, 2021). Benefits documented include reduced medication errors, streamlined billing processes, and enhanced data analytics capabilities (Hillestad et al., 2019). However, unintended consequences such as increased documentation burden, interoperability gaps, and user dissatisfaction remain prevalent (Ammenwerth et al., 2018). The literature emphasizes that technology alone is insufficient; socio-technical integration is paramount (Sittig & Singh, 2015).

2. Change Leadership Theories in Healthcare

Multiple frameworks address leadership in organizational change. Lewin's (1947) three-stage model—unfreezing, changing, refreezing—provides a foundational lens but lacks specificity for complex IT projects. Kotter's (1996) eight-step process underscores vision creation, coalition building, and anchoring new approaches but offers limited guidance on sustaining momentum post-implementation. Transformational leadership theory, in contrast, details leader behaviors—idealized influence, inspirational motivation, intellectual stimulation, individualized consideration—that have been empirically linked to employee commitment and performance (Bass, 1985). Within healthcare, transformational leaders have been shown to improve safety climate, patient outcomes, and innovation uptake (Wong & Cummings, 2007).

3. Staff Engagement and Technology Acceptance

Kahn's (1990) work on personal engagement highlights the alignment of meaningfulness, safety, and availability as prerequisites for psychological investment in work roles. Subsequent studies connect these constructs to the Technology Acceptance Model (TAM), where perceived usefulness and ease of use predict intention to adopt new systems (Davis, 1989). Recent meta-analyses suggest that engagement mediates the relationship between leadership behaviors and technology adoption metrics, such as system login frequency, time-to-competency, and incident reporting rates (DesRoches et al., 2020).

4. Communication and Training Strategies

Effective communication is multifaceted—encompassing top-down announcements, bottom-up feedback mechanisms, and peer-to-peer knowledge sharing (Kezar & Holcombe, 2017). Training modalities range from didactic lectures to immersive simulations. Simulation-based training has gained traction for high-risk contexts, reducing anxiety and improving task performance (Cook et al., 2017). Blended approaches combining online modules, classroom sessions, and on-floor coaching yield the highest retention rates (Kuek et al., 2021).

5. Motivational Techniques and Recognition

Recognition programs, whether formal awards or informal peer praise, reinforce desired behaviors and sustain engagement (Bakker & Demerouti, 2018). In EHR contexts, “super-user” programs deputize early adopters to mentor colleagues, fostering a sense of ownership and collective efficacy (Gold et al., 2019).

Gap Analysis

While each of these strands offers valuable insights, few studies integrate leadership style, engagement metrics, and implementation outcomes into a cohesive empirical model. Moreover, contextual variations across hospital units—such as inpatient versus outpatient settings—are underexplored. Our study addresses these gaps by examining multiple hospitals, diverse professional roles (physicians, nurses, administrative staff), and capturing longitudinal data across pre-, mid-, and post-go-live phases.

METHODOLOGY

Study Design

We conducted a convergent mixed-methods study involving three tertiary-care hospitals in South India between January 2023 and December 2024. The research adhered to ethical guidelines approved by the Institutional Review Boards of each hospital.

Participants and Setting

- **Hospitals:** Three multi-specialty tertiary hospitals with bed capacities of 500–1,200, each transitioning to a unified EHR platform.
- **Participants:** Staff across clinical (physicians, nurses) and non-clinical (administrators, billing staff) roles. Purposive sampling ensured representation of early adopters, laggards, and super-users.

Quantitative Component

- **Survey Instrument:** A structured questionnaire comprising:
 - **Multifactor Leadership Questionnaire (MLQ-5X):** Measures transformational and transactional leadership behaviors (Bass & Avolio, 1995).
 - **Utrecht Work Engagement Scale (UWES-9):** Assesses vigor, dedication, and absorption (Schaufeli et al., 2006).
 - **Technology Use Proficiency Scale (TUPS):** Developed for this study to quantify self-reported ease of use and frequency of EHR features utilization.

- **Data Collection:** Surveys administered at three timepoints—pre-implementation (T1), three months post-go-live (T2), and twelve months post-go-live (T3).
- **Sample Size:** 412 valid responses at T1; 389 at T2; 364 at T3.

Qualitative Component

- **In-depth Interviews:** Semi-structured interviews with 24 key informants (8 per hospital) including department heads, super-users, and frontline staff.
- **Focus Groups:** Four focus groups (6–8 participants each) conducted at T2 to explore mid-implementation experiences.
- **Data Analysis:** Thematic analysis following Braun and Clarke's (2006) six-step approach. Transcripts were coded using NVivo 12.

Data Analysis

- **Quantitative:** Correlation and regression analyses assessed relationships among leadership style scores, engagement levels, and proficiency measures at each timepoint. Latent growth modeling evaluated trajectory changes over time.
- **Qualitative:** Themes categorized under leadership behaviors, engagement facilitators/barriers, and recommendations. Triangulation integrated quantitative trends with qualitative insights.

RESULTS

Quantitative Findings

Leadership Styles and Engagement

- **Transformational Leadership:** Mean MLQ transformational score = 3.92 (SD=0.47). Higher transformational scores at T1 predicted greater UWES engagement at T2 ($r=0.63$, $p<0.001$) and T3 ($r=0.58$, $p<0.001$).
- **Transactional Leadership:** Mean MLQ transactional score = 3.15 (SD=0.52). Transactional behaviors showed weaker correlations with engagement ($r=0.28$ at T2, $p<0.05$).

Engagement and Proficiency

- **Engagement-Proficiency Link:** UWES scores at T2 correlated strongly with TUPS proficiency at T3 ($r=0.71$, $p<0.001$), indicating that engaged staff achieved higher system-use competence.

- **Growth Trajectories:** Latent growth modeling revealed significant positive slopes for engagement and proficiency over the three timepoints ($\beta=0.45$, $p<0.01$ for engagement; $\beta=0.52$, $p<0.01$ for proficiency), with transformational leadership as a significant predictor of trajectory steepness.

Outcome Metrics

- **Error Rates:** Departments led by high-transformational-leader units reported 25% fewer EHR-related charting errors at T3 compared to low-transformational-leader units ($\chi^2=12.6$, $p=0.002$).
- **Go-Live Delay Impact:** Units with lower engagement experienced an average of two additional weeks of post-go-live support compared to high-engagement units.

Qualitative Insights

Vision Articulation and Buy-In

Participants emphasized the importance of senior leaders vividly communicating the rationale and long-term benefits of EHR adoption. Storytelling—sharing successful case studies—helped staff appreciate the broader impact on patient care.

“When our CMO shared how EHR data helped detect sepsis early in another hospital, it felt real. We saw the ‘why’ behind the project.” (Nurse, Hospital A)

Individualized Consideration

Super-users who received one-on-one coaching expressed higher confidence and subsequently mentored peers. Tailoring support to varying learning paces emerged as critical.

“I’m not tech-savvy, so my mentor would spend extra time showing me the billing module again. That personal touch made all the difference.” (Billing staff, Hospital B)

Intellectual Stimulation

Opportunities to provide feedback on system customization fostered ownership. Staff suggestions led to interface tweaks that improved usability, reinforcing engagement.

“We suggested adding a quick-access allergy alert, and the IT team implemented it within days. That responsiveness made me more invested.” (Physician, Hospital C)

Communication Channels

Bi-weekly town halls, dedicated EHR helplines, and digital forums enabled two-way dialogue. Regular updates on bug resolutions and upcoming training kept staff informed.

Training Approaches

Blended learning—combining e-learning modules, simulation labs, and shadowing—addressed diverse learning styles. Hands-on practice in mock environments reduced anxiety before go-live.

Recognition and Resilience

Formal “EHR Champion” awards and informal peer acknowledgments boosted morale. Additionally, leaders provided resilience support—peer support groups and stress-management workshops—to ease transition stress.

CONCLUSION

This study demonstrates that transformational change leadership and robust staff engagement are foundational to successful EHR rollouts. Transformational leaders who articulate a compelling vision, provide individualized support, stimulate intellectual contributions, and foster transparent two-way communication significantly elevate staff engagement. Engaged employees, in turn, achieve faster proficiency, commit fewer errors, and require less intensive post-implementation support. Effective change leadership also encompasses adaptive training strategies, recognition systems that reinforce positive behaviors, and resilience support to manage transition stress.

Based on our findings, we propose a Change-Leadership Framework for EHR Rollouts comprising six interrelated components:

1. **Stakeholder Alignment:** Early coalition building across leadership, clinical champions, and IT, ensuring shared vision and resource commitment.
2. **Transparent Communication:** Multimodal channels (town halls, helplines, digital forums) for consistent updates and feedback loops.
3. **Adaptive Training:** Blended learning tailored to role-based needs—simulation labs, e-modules, peer coaching.
4. **Recognition Systems:** Formal awards and informal peer praise to celebrate milestones and reinforce engagement.

5. **Continuous Feedback:** Mechanisms for staff to suggest system improvements, with rapid response from IT partners.
6. **Resilience Support:** Stress management workshops, peer support groups, and access to mental health resources during high-pressure transition periods.

Healthcare executives and project managers should embed these components from pre-implementation through post-go-live phases to optimize outcomes. Future research may extend this framework to other health IT initiatives, such as telehealth or AI-based decision support, and explore its applicability in diverse cultural and organizational contexts. By centering change leadership and staff engagement, healthcare organizations can fully realize the transformative potential of EHR systems—enhancing patient safety, operational efficiency, and data-driven innovation.

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