Introduction
Transformational leaders are adaptive and flexible, focusing on building relationships and creating change. They motivate and inspire people’s attitudes, beliefs, values and behaviours (Bass 1985, Doody and Doody 2012, Giddens 2018). Jedwab et al (2023) suggested digital nurse leaders become critically important when traditional nursing leadership skills are insufficient in the face of advancing technologies, such as electronic health record systems (EHRs) (Remus and Kennedy 2012).

EHRs are digitalised repositories of patient health data that replace paper documentation, which significantly enhances service delivery and improves the quality of patient care (Raghunathan et al 2021).

The implementation of EHRs has implications for training, change management, communication, inter-professional and cross-site coordination, user experience, governance of problems, optimisation, and preserving the quality of care; it requires exploration and effective management (Weiner et al 2023).

Digital nurse leaders are vital in selecting,
developing, implementing, adopting and optimising EHRs in healthcare settings to support nurses and ultimately enhance the delivery of patient care (Jedwab et al 2023).

Nursing information officers (NIOs) are emerging as significant digital nurse leaders in driving digital transformational change. They are crucial in the design of effective clinical workflows and the successful implementation of EHRs (Remus and Kennedy 2012, Kirby 2015, Hovenga et al 2018, Weiner et al 2023) – they promote extensive nursing engagement and establish effective communication channels among subject matter experts, senior leadership and EHR teams (Delisle et al 2019).

This article reviews and reflects on the multifaceted methods an NIO team designed and implemented across two NHS hospital trusts in London to engage and prepare nursing staff to use Epic, a new, integrated EHR that would replace the old, legacy EHRs they were then using. Epic is an EHR launched in 1979 in the US that has been adopted by healthcare organisations globally. It is designed to enable clinicians to efficiently manage patient medical records and other healthcare data across various settings, including inpatient, outpatient and community; it is intended to enhance patient flow, improve the digital patient experience, promote interoperability and facilitate seamless communication among healthcare providers (Epic 2024).

Background

Nursing information officer (NIO): roles and responsibilities

Nursing health informatics roles have existed for around 40 years, but the recognition of the roles has gained momentum in recent years (Kirby 2015). Australia, Canada and the United States have increasingly established nursing informatics roles with varying structures in place (Remus and Kennedy 2012, Hovenga et al 2018, Reid et al 2021). However, the UK is only slowly recognising the importance of the role in healthcare. Digital Health Networks identified in its Birmingham Declaration (Digital Health Networks 2024) priorities for the next five years. These include improving and increasing digital leadership across the NHS, and providing opportunities for shared learning and innovation.

There is a compelling need to establish a unified, global definition of nurse informatics roles to provide clarity and prepare the workforce for the digital era (Reid et al 2021).

The nursing profession – being the largest user group and having strong patient and staff engagement – must take the lead in ensuring patient information and clinician workflow needs are met (Hovenga et al 2018).

Nursing educators, leaders and healthcare organisations are responsible for improving global health through informatics competency; this highlights the necessity of having a highly skilled nursing workforce ready for the digital healthcare environment (Seckman 2022).

Nursing informatics roles have evolved into necessary, well-respected, leadership positions that offer a satisfying career path supporting patient care and provide an avenue to executive leadership. They require specific knowledge and skills, including change management, strategic thinking, effective communication, informatics and digital health proficiency (Hovenga et al 2018).

NIOs are pivotal in addressing the global shortage of healthcare professionals and navigating technological advances in healthcare (Weber et al 2022). They are a bridge between clinical staff and vendors that ensures nursing practices remain sustainable, adaptable and precise during digital transformation.

The value of electronic health records (EHRs)

Digital technologies have rapidly transformed a healthcare system seeking to enhance safety and efficiency. Nursing informatics has amalgamated nurses’ professional knowledge with information and communication technologies (ICT) to improve patient outcomes (Reid et al 2021).

EHRs have been pivotal in this, as well as instrumental in improving service delivery and enhancing the quality of care (Raghunathan et al 2021). Healthcare systems shifted from paper charts to EHRs two decades ago, aiming to digitise patients’ medical records so they could be seamlessly shared across the entire care continuum (Kirby 2015) as well as to reduce costs. EHRs are now recognised as essential in storing and managing patient data, and have become integral to nursing practice; they influence documentation, medication management, clinical decision-making and care coordination (Reid et al 2022, Whitt et al 2023). They enable new delivery models, and improve efficiency and quality (Australian Digital Health Agency 2017).

EHRs are optimally designed to streamline nursing workflows by relieving nurses of time-consuming, non-clinical tasks, alleviating the mental burden associated with administrative responsibilities. Their increasing prevalence facilitates the availability of information and coordination for healthcare decisions – nurses are expected to access relevant and timely data at all stages of patient care to ensure its

Key points

- Electronic health records (EHR) enhance patient care, safety, efficiency and staff experience
- Organisations transitioning to digital health records should engage with and communicate with nursing staff
- Nursing information officers (NIOs) are crucial in leading change and can promote open communication channels at all organisational levels
- NIOs can prepare nurses for EHR systems and ensure a high level of nursing engagement in implementation
- Active nurse involvement is crucial to ensure adherence to ethical and professional standards
- Consider use of a range of methods and induction sessions to embed new practice
efficient and effective delivery (Remus and Kennedy 2012). They are vital in enhancing patient flow, improving communication and prioritising safety – particularly in critical processes such as administering medications and blood transfusions. The integration of medical devices with EHRs further contributes to the overall enhancement of nursing care (Weber et al 2022).

EHR preparedness
To implement an EHR smoothly and effectively, it is imperative to thoroughly assess the central and local operational readiness of the healthcare system. Organisations transitioning to digital health records should establish effective communication channels with leadership, form adequately sized teams for informatics and foster a high level of nursing engagement (Delisle et al 2019).

Chief NIOs are crucial in leading this transformation as they must ensure robust leadership support across all organisational levels. NIOs contribute by incorporating professional standards and data quality benchmarks, advocating for EHR implementation and demonstrating a commitment to the process (Hovenga et al 2018).

To implement an EHR effectively and address challenges regardless of the complexity of the implementation, organisations should formulate a clear strategy encompassing the following key processes (Delisle et al 2019):

- Assessment of the organisation’s needs during the build of the EHR and the testing of clinical workflows.
- Evaluation of the existing technology infrastructure.
- Development of contingency plans for potential disruptions.
- The creation of a comprehensive training programme for all end users, using various communication tools and education resources to reinforce learning and address ongoing challenges.
- A focus on staff engagement across all affected clinical areas. Internal leaders overseeing these tasks should understand the organisational culture, navigate politics, have a clinical background and be influential in driving change (Delisle et al 2019).

Preparing nurses for an EHR
The nursing team is the largest workforce, so its active involvement in decision-making is crucial. This ensures strict adherence to ethical and professional standards.

It is paramount to collaborate with nursing teams early in the implementation of the EHR and to establish a well-defined plan for communicating with them. Engagement activities enable the teams to experience the new system and envision its future use, which fosters a sense of involvement and ownership (Delisle et al 2019).

The transition to digital systems holds profound implications for nurses in technology-rich work environments. Nurses’ front-line roles in collecting, recording and managing health data means proficiency in IT and informatics skills are indispensable (Raghunathan et al 2021).

EHR transitions surpass mere technical aspects, focusing on system standardisation, patient safety and organisational culture, thereby impacting clinical outcomes (Weiner et al 2023). The multifaceted nature of these impacts means effective stakeholder engagement, particularly involving nursing teams, becomes paramount for a thoughtful and strategic EHR transition and ultimately a successful implementation (Weiner et al 2023).

Preparing nurses to use a new EHR involves several important considerations. Comprehensive planning and continuous training throughout the implementation are important (Aguirre et al 2019). Training should start several weeks before the go-live date of the new system, starting with the basics and progressing to advanced sessions. This ensures that nurses feel competent and confident in using the new EHRs; this ultimately increases user satisfaction with the system and the nurses’ knowledge, fosters a positive attitude, and mitigates potential usability issues (Habibi-Koolaei et al 2015, Aguirre et al 2019).

Educating adult learners requires a tailored approach that recognises and accommodates their unique characteristics, experiences and learning preferences. Adult learners are typically self-directed and goal-oriented, and have diverse backgrounds and life experiences that shape their learning needs and preferences (Merriam et al 2007). Training and educational opportunities should be adaptable and flexible; a blended approach should be used, including e-learning, peer coaching, simulation to support interactive and workflow-based content, and classroom, hands-on and one-on-one training (Aguirre et al 2019, Ting et al 2021).

It is also essential to recognise change-management theory and its implications for change. We used the ADKAR model (Hiatt 2006) when we were implementing our EHR;
this ensured we focused on individual change readiness and addressed the model’s five main elements with activities (Figure 1).

By integrating these considerations into preparation strategies, organisations can enhance the effectiveness of nurse training and facilitate a smoother implementation of the new EHRs.

Methodologies for preparation of staff
In addition to other readiness activities, members of the NIO team organised comprehensive engagement activities for inpatient ward and critical care areas. These included face-to-face training, e-learning, engaging superusers, and facilitating various forums and meetings.

To achieve this, the team also designed and implemented ‘show and tells’, demos and walkabouts, additional induction sessions for practice development nurses (PDNs) and nurse educators, ‘CopyCat’ charting, a change strategy document, and an online learning resource hub for nurses.

Show and tells
The ‘show and tells’ were live, online demonstrations by nurses that used screen sharing in the Microsoft Teams collaboration software to navigate Epic and showcase various functionalities. NIOs designed these to effectively demonstrate the workflows and tools that would be used in Epic based on the decisions nursing subject matter experts had made during the design phase.

Time was allocated during ‘show and tells’ for question-and-answer sessions in which the nurses could address any of the nursing team’s queries or concerns regarding Epic’s tools and functionalities.

The benefits and limitations of these ‘show and tell’ sessions are summarised in Table 1. Overall, we feel that while they presented challenges we had to overcome, they offered significant benefits – the sessions were crucial in preparing inpatient ward and critical care nurses to use Epic effectively for its launch.

Recorded demos
Demos were a valuable resource for helping nurses to understand Epic’s capabilities. These soundbite recordings lasting no more than five minutes covered a wide range of clinical areas and inpatient nursing workflows. They were stored in an online library with easy-to-navigate menus to help users find what they needed. Links to the library were shared widely using the organisation’s staff hubs.

While recorded demos offer convenience and accessibility, they also have limitations that need to be considered (Table 2). We believe having access to these demos enabled nurses to review the content discussed or demoed in other forums whenever they wanted.

Walkabouts
‘Walkabouts’ involved directly demonstrating the ‘show and tell’ content to inpatient ward nurses in their clinical areas. They helped to address some of the limitations of ‘show and tells’, such as addressing bespoke individual needs, lack of hands-on practice, retention of information with no follow-up and training nurses who could not attend ‘show and tell’ sessions.

Coordinating and delivering walkabouts demanded time and resources. However, we feel they led to a smoother experience when Epic went live: seeing ward and critical care nurses in their clinical areas engaging with Epic provided an opportunity to identify potential issues with nursing workflows and content ahead of the EHR’s launch. Table 3 shows the benefits and limitations of walkabouts.

Induction sessions for practice development nurses (PDNs), educators and ward managers
The objective of these whole-day, in-person sessions was to provide PDNs and
educators with some of the essential skills and knowledge needed to use Epic while introducing a supportive network. The aim of the network was to empower education teams to support and assist their teams effectively in preparing and implementing Epic within their respective areas.

For ongoing support and resource support, the NIOs created an online resource hub using collaboration software Slack. This was accessible to everyone attending the induction sessions, and provided a secure forum for sharing learning and resources, such as training materials, guides and best-practice documents.

Overall, the induction sessions offered valuable opportunities for training and collaboration, but relied on the PDNs, educators and ward managers’ motivation to carry forward the learning to their teams before Epic went live. This motivation seemed limited because of the resources and time available. Table 4 summarises the benefits and limitations of the induction sessions and the online resource hub.

‘CopyCat’ charting
It was essential to ensure appropriate safeguards were in place before Epic went live, to protect patients and nurses. ‘CopyCat charting’ was therefore developed to further prepare nurses – particularly those working in critical care wards – in a controlled, secure, ‘playground’ environment.

This involved PDNs, educators, superusers, NIOs and health informatics and other support nurses visiting bedside nurses in critical care and ward areas. The support nurses would supervise patient safety, maintain documentation in the live patient record and be available to demo and answer questions or concerns from the nurses as they tried to document patient observations and assessment data in Epic. This enabled the bedside nurses to practise documentation skills using a real-life scenario in a safe, supervised setting.

Overall, ‘CopyCat charting’ was a valuable opportunity for hands-on learning. Nurses could review the new workflows and test the Epic system for usability before going live. Table 5 summarises the benefits and limitations of ‘CopyCat’ charting.

<table>
<thead>
<tr>
<th>Change and engagement strategy document</th>
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<tbody>
<tr>
<td>The NIO team wanted to facilitate the transition from the existing EHRs to Epic by providing nursing leaders with the information needed for Epic to go live safely and</td>
</tr>
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</table>
effectively. We created a comprehensive and concise document for inpatient nurse managers across the organisation that identified the main changes to nursing workflows in Epic compared to the existing EHRs. We used the ‘stop, start, change, continue methodology’ (Peterson 2017) to document concisely what current practices would be stopping, what new practices would be starting, what changes would be coming and whether there was anything that would continue from the current practice after the launch of Epic. We also described the ADKAR changes strategy (see Figure 1) we used throughout the implementation phase.

Table 6 summarises the benefits and limitations of creating the document.

Creating this document was very rewarding, as it consolidated into a single comprehensive source all the decisions about changes and workflows made collaboratively with SMEs over the previous two years. The biggest challenge was deciding when to disseminate the document to nurse managers and leaders. The initial version was released just before Epic went live, in recognition of the fact that many leaders might have been unable to review it because they had other pressing responsibilities.

A second edition will be released three to four months after Epic is live. This will incorporate any necessary modifications based on feedback, workflow modifications and relevant experiences following implementation.

Conclusion

The digital transformation brought about by implementing a new EHR across two NHS hospital trusts in London has been challenging and rewarding. The perseverance and dedication of the NIO team in engaging and preparing nursing staff for this transformative change have been instrumental in the transition from existing EHRs to the new one. The NIO team – through various methodologies such as ‘show and tells’, demos, walkabouts, ‘CopyCat’ charting and induction sessions – demonstrated a commitment to addressing the diverse learning needs of inpatient ward and critical care nursing staff to enhance nurses’ confidence and preparedness to use the new EHRs effectively.

Successfully implementing a new EHR for nursing teams relies on nursing staff’s collective efforts, their leadership and NIO teams. By embracing digital transformation and leveraging innovative strategies, we can help navigate the complexities of healthcare technology and the challenges experienced by nursing teams – and facilitate a smoother transition to a new EHR.

<p>| Table 3. Benefits and limitations of walkabouts |</p>
<table>
<thead>
<tr>
<th>Benefits</th>
<th>Limitations</th>
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</thead>
<tbody>
<tr>
<td>Contextual learning</td>
<td>Requires equipment and support staff knowledgeable in the clinical areas</td>
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<tr>
<td>Hands-on-experience</td>
<td>Balancing the clinical needs of patients with the time needed for demonstration and practice</td>
</tr>
<tr>
<td>Immediate application, with participants able to ask questions and address specific challenges and scenarios they encounter in their clinical areas</td>
<td>The time required to prepare support documentation for nurses to use to replicate walkabouts</td>
</tr>
<tr>
<td>Tailored support to each clinical area</td>
<td>Labour intensive for the nursing information officer’s team in coordination and implementing</td>
</tr>
<tr>
<td>Encouraged local teams to replicate via superusers, practice development nurses and educators</td>
<td></td>
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<tr>
<td>Engagement and participation of nursing teams</td>
<td></td>
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<tr>
<td>Promotion of best practices</td>
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</tbody>
</table>

<p>| Table 4. Benefits and limitations of induction sessions and the online resource hub |</p>
<table>
<thead>
<tr>
<th>Benefits</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focused preparation</td>
<td>Resource-intensive in terms of room availability, time, coordination and planning</td>
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<tr>
<td>Provided opportunities for engagement and active participation</td>
<td>Limited reach</td>
</tr>
<tr>
<td>Teams experiencing the same transformational change could collaborate</td>
<td>Depends on expert facilitators</td>
</tr>
<tr>
<td>NIOs’ expertise ensured participants received comprehensive, targeted training</td>
<td>Difficult to sustain engagement during and after sessions</td>
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<tr>
<td>Enabled ongoing support among NIOs, PDNs and educators</td>
<td>Variable levels of experience and knowledge could impact the training’s effectiveness</td>
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<tr>
<td>Experiences and resources could be shared via Slack</td>
<td>Potential for information overload</td>
</tr>
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<td></td>
<td>Challenges in ongoing cross-site collaboration</td>
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</tbody>
</table>

<p>| Table 5. The benefits and limitations of ‘CopyCat’ charting |</p>
<table>
<thead>
<tr>
<th>Benefits</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hands-on practice</td>
<td>Time- and resource-intensive</td>
</tr>
<tr>
<td>Simulation of real-time workflows</td>
<td>Limited scope</td>
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<tr>
<td>Supervised learning</td>
<td>Documentation pressure of the bedside nurses</td>
</tr>
<tr>
<td>Real-time feedback</td>
<td>Resistance to change</td>
</tr>
<tr>
<td>Skills development</td>
<td>Scalability</td>
</tr>
<tr>
<td>Team collaboration</td>
<td>Nurses’ availability</td>
</tr>
<tr>
<td></td>
<td>Limited reach</td>
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</tbody>
</table>

<p>| Table 6. Benefits and limitations of the document |</p>
<table>
<thead>
<tr>
<th>Benefits</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity and transparency</td>
<td>Specific only to nursing workflows</td>
</tr>
<tr>
<td>Alignment with organisational goals</td>
<td>Assumes an understanding of Epic functionality</td>
</tr>
<tr>
<td>Facilitates transition</td>
<td>Needs regular review and revision updates to keep up to date</td>
</tr>
<tr>
<td>Supports change management</td>
<td>Resistance to change</td>
</tr>
<tr>
<td>Clear communication</td>
<td>Dependency on reading and understanding document before implementing/reinforcing change</td>
</tr>
<tr>
<td>Contributes to improved patient care</td>
<td></td>
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</table>
References


Digital Health Networks (2024) Birmingham Declaration. digitalhealthnetworks.net/birmingham-declaration/ (Last accessed: 21 June 2024.)


