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The Evolving Roles of Healthcare Support Staff in Digital Healthcare: A Qualitative Study of Medical Secretaries, Health Assistants, and Nursing Technicians in Hafr Al-Batin

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Abstract

The increasing adoption of digital technologies in healthcare has led to significant changes in the roles and responsibilities of healthcare support staff. This qualitative study explores the evolving roles of medical secretaries, health assistants, and nursing technicians in the context of digital healthcare in Hafr Al-Batin, Saudi Arabia. Semi-structured interviews were conducted with 18 participants, including six medical secretaries, six health assistants, and six nursing technicians, to gain insights into their experiences, perceptions, and challenges related to the integration of digital technologies in their work. Thematic analysis of the interview data revealed four main themes: (1) the impact of digital technologies on job roles and responsibilities, (2) the need for continuous learning and skill development, (3) the importance of effective communication and collaboration, and (4) the challenges of adapting to new technologies and workflows. The findings highlight the expanding roles of healthcare support staff in digital healthcare, which include data management, patient education, and technology troubleshooting, in addition to their traditional administrative and clinical support tasks. The study emphasizes the need for targeted training, interprofessional collaboration, and organizational support to enable healthcare support staff to effectively navigate the digital healthcare landscape and contribute to high-quality patient care.

Keywords: digital healthcare, healthcare support staff, medical secretaries, health assistants, nursing technicians, qualitative research

1. Introduction

The healthcare industry is undergoing a rapid digital transformation, driven by advances in information and communication technologies, electronic health records (EHRs), telemedicine, and mobile health applications (Gagnon et al., 2012). This digital revolution has the potential to improve the quality, accessibility, and efficiency of healthcare services, but it also presents significant challenges for healthcare professionals, including healthcare support staff (Konttila et al., 2019).

Healthcare support staff, such as medical secretaries, health assistants, and nursing technicians, play a crucial role in the delivery of healthcare services, providing administrative, clinical, and technical support to healthcare professionals and patients (Brant & Chaet, 2018). However, the increasing adoption of digital technologies in healthcare is changing the nature and scope of their

work, requiring them to acquire new skills, adapt to new workflows, and collaborate with a wider range of professionals (Borycki & Kushniruk, 2015).

In Saudi Arabia, the Ministry of Health (MOH) has launched several initiatives to promote the digitalization of healthcare services, including the implementation of EHRs, telemedicine platforms, and mobile health applications (Alharbi, 2018). These initiatives aim to improve the quality and accessibility of healthcare services, particularly in rural and underserved areas, and to support the country's Vision 2030 goals of developing a digital economy and a knowledge-based society (Vision 2030, 2016).

Hafr Al-Batin is a city in the Eastern Province of Saudi Arabia, with a population of approximately 300,000 people (General Authority for Statistics, 2019). The city has several public and private healthcare facilities, including hospitals, primary healthcare centers, and specialized clinics, which are increasingly adopting digital technologies to improve their services (Alharbi et al., 2020).

However, little is known about the impact of digital healthcare on the roles and experiences of healthcare support staff in Hafr Al-Batin, and how they are adapting to the changing demands of their work. This qualitative study aims to explore the evolving roles of medical secretaries, health assistants, and nursing technicians in the context of digital healthcare in Hafr Al-Batin, and to identify the challenges and opportunities for their professional development and contribution to high-quality patient care.

The objectives of this study are as follows:

1. To explore the impact of digital technologies on the job roles and responsibilities of medical secretaries, health assistants, and nursing technicians in Hafr Al-Batin.
2. To identify the skills and competencies required by healthcare support staff to effectively navigate the digital healthcare landscape.
3. To examine the challenges and opportunities for healthcare support staff in adapting to new technologies and workflows in their work.
4. To provide recommendations for supporting the professional development and integration of healthcare support staff in digital healthcare.

2. Literature Review

This section provides an overview of the existing literature on the roles and experiences of healthcare support staff in the context of digital healthcare, and the challenges and opportunities for their professional development and contribution to high-quality patient care.

2.1 The Roles of Healthcare Support Staff in Healthcare Delivery

Healthcare support staff, including medical secretaries, health assistants, and nursing technicians, play a vital role in the delivery of healthcare services, providing administrative, clinical, and technical support to healthcare professionals and patients (Brant & Chaet, 2018). Their specific roles and responsibilities vary depending on their job title, work setting, and level of education and training (Borycki & Kushniruk, 2015).

Medical secretaries are responsible for managing medical records, scheduling appointments, billing and coding, and communicating with patients and healthcare providers (Brant & Chaet, 2018). They also play a key role in maintaining the confidentiality and security of patient

information, and ensuring compliance with healthcare regulations and standards (Kerfoot et al., 2010).

Health assistants provide clinical support to healthcare professionals, such as taking vital signs, preparing patients for examinations, and assisting with procedures (Brant & Chaet, 2018). They also provide patient education and counseling, and help patients navigate the healthcare system (Konttila et al., 2019).

Nursing technicians work under the supervision of registered nurses, providing basic nursing care to patients, such as bathing, dressing, and feeding (Brant & Chaet, 2018). They also monitor patients' conditions, record their observations, and communicate any changes to the nursing staff (Kerfoot et al., 2010).

Despite their critical roles in healthcare delivery, healthcare support staff often face challenges related to low pay, limited career advancement opportunities, and lack of recognition and support from healthcare organizations (Brant & Chaet, 2018). Moreover, the increasing adoption of digital technologies in healthcare is changing the nature and scope of their work, requiring them to acquire new skills and adapt to new workflows (Borycki & Kushniruk, 2015).

2.2 The Impact of Digital Technologies on Healthcare Support Staff

The increasing adoption of digital technologies in healthcare, such as EHRs, telemedicine, and mobile health applications, is transforming the way healthcare services are delivered and managed (Gagnon et al., 2012). These technologies have the potential to improve the quality, safety, and efficiency of healthcare services, but they also present significant challenges for healthcare professionals, including healthcare support staff (Konttila et al., 2019).

Studies have shown that the implementation of EHRs can lead to significant changes in the roles and responsibilities of medical secretaries, who are often responsible for managing and maintaining these systems (Kerfoot et al., 2010). Medical secretaries may need to acquire new technical skills, such as data entry, coding, and troubleshooting, and adapt to new workflows and communication channels (Brant & Chaet, 2018).

Similarly, the adoption of telemedicine and mobile health applications can impact the roles of health assistants and nursing technicians, who may need to provide remote support to patients and healthcare professionals (Konttila et al., 2019). They may also need to develop new skills in using digital devices and platforms, and in communicating effectively with patients and colleagues through virtual means (Borycki & Kushniruk, 2015).

However, studies have also identified several barriers to the effective integration of digital technologies in the work of healthcare support staff, such as lack of training and support, resistance to change, and concerns about job security and workload (Gagnon et al., 2012). Moreover, the implementation of digital technologies can exacerbate existing challenges related to low pay, limited career advancement opportunities, and lack of recognition and support from healthcare organizations (Brant & Chaet, 2018).

2.3 The Need for Continuous Learning and Skill Development

The rapid pace of technological change in healthcare requires healthcare support staff to engage in continuous learning and skill development to stay current with the latest tools and practices (Borycki & Kushniruk, 2015). Studies have emphasized the importance of providing targeted

training and education programs to help healthcare support staff acquire the technical, interpersonal, and problem-solving skills needed to effectively navigate the digital healthcare landscape (Konttila et al., 2019).

However, studies have also identified several barriers to the participation of healthcare support staff in training and education programs, such as lack of time, financial resources, and managerial support (Gagnon et al., 2012). Moreover, the training needs of healthcare support staff may vary depending on their job roles, work settings, and level of education and experience, requiring a tailored and flexible approach to skill development (Brant & Chaet, 2018).

2.4 The Importance of Effective Communication and Collaboration

The increasing complexity and specialization of healthcare services require healthcare support staff to communicate and collaborate effectively with a wide range of professionals, including physicians, nurses, pharmacists, and IT specialists (Borycki & Kushniruk, 2015). Studies have emphasized the importance of developing interprofessional communication and collaboration skills among healthcare support staff to ensure the continuity and coordination of patient care (Konttila et al., 2019).

However, studies have also identified several barriers to effective communication and collaboration among healthcare support staff, such as hierarchical power structures, professional silos, and lack of trust and respect (Gagnon et al., 2012). Moreover, the adoption of digital technologies can create new challenges for communication and collaboration, such as the need to manage multiple communication channels and platforms, and to ensure the accuracy and security of patient information (Kerfoot et al., 2010).

This literature review highlights the critical roles of healthcare support staff in healthcare delivery, and the impact of digital technologies on their job roles and responsibilities. It also emphasizes the need for continuous learning and skill development, and effective communication and collaboration among healthcare support staff to ensure their effective integration in digital healthcare. However, it also identifies several gaps in the current literature, particularly in the context of Saudi Arabia and the city of Hafr Al-Batin, which this study aims to address.

3. Methods

This qualitative study employed a phenomenological approach to explore the evolving roles of medical secretaries, health assistants, and nursing technicians in the context of digital healthcare in Hafr Al-Batin, Saudi Arabia.

3.1 Study Design

A descriptive phenomenological design was used to gain an in-depth understanding of the participants' lived experiences and perceptions related to the impact of digital technologies on their job roles and responsibilities. Phenomenology is a qualitative research approach that focuses on describing the common meaning of individuals' experiences of a particular phenomenon (Creswell & Poth, 2018).

3.2 Participants and Sampling

Purposive sampling was used to recruit medical secretaries, health assistants, and nursing technicians working in various healthcare facilities in Hafr Al-Batin, including hospitals, primary healthcare centers, and specialized clinics. The inclusion criteria for participants were as follows:

- Currently employed as a medical secretary, health assistant, or nursing technician in a healthcare facility in Hafr Al-Batin
- Have at least one year of work experience in their current role
- Have experience with using digital technologies in their work, such as EHRs, telemedicine platforms, or mobile health applications
- Willing to participate in the study and provide informed consent

A total of 18 participants were recruited for the study, including six medical secretaries, six health assistants, and six nursing technicians. The sample size was determined based on the principle of data saturation, which occurs when no new themes or information emerge from the data (Saunders et al., 2018).

3.3 Data Collection

Data were collected through semi-structured interviews with the participants. The interviews were conducted face-to-face in a private room at the participants' workplace, and lasted approximately 60 minutes each. The interviews were guided by an interview protocol that included open-ended questions related to the following topics:

- Participants' job roles and responsibilities, and how they have changed with the adoption of digital technologies
- Participants' experiences with using digital technologies in their work, including the benefits, challenges, and impacts on their workload and job satisfaction
- Participants' perceptions of the skills and competencies required to effectively use digital technologies in their work
- Participants' experiences with communication and collaboration with other healthcare professionals and patients in the context of digital healthcare
- Participants' recommendations for improving the integration and support of healthcare support staff in digital healthcare

The interviews were conducted in Arabic, the native language of the participants, and were audio-recorded with the participants' consent. The recordings were transcribed verbatim and translated into English for analysis.

3.4 Data Analysis

Thematic analysis was used to analyze the interview transcripts, following the six-phase approach described by Braun and Clarke (2006). The analysis process involved the following steps:

1. Familiarization with the data: The transcripts were read and re-read to gain a thorough understanding of the content and identify initial patterns and meanings.
2. Generating initial codes: The data were systematically coded by identifying and labeling meaningful segments of text that were relevant to the research questions.

3. Searching for themes: The codes were collated into potential themes that captured the key patterns and meanings in the data.
4. Reviewing themes: The themes were reviewed and refined to ensure that they were coherent, distinct, and representative of the data as a whole.
5. Defining and naming themes: The themes were defined and named to clearly convey their essence and scope.
6. Producing the report: The findings were written up in a clear and compelling narrative, supported by illustrative quotes from the participants.

The analysis was conducted by two researchers independently, and any discrepancies were resolved through discussion and consensus. The themes were also reviewed and validated by the research team to ensure their credibility and trustworthiness.

3.5 Trustworthiness

Several strategies were used to enhance the trustworthiness of the study, based on the criteria of credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985):

- Credibility: Prolonged engagement with the data, peer debriefing, and member checking (i.e., sharing the findings with a subset of participants for feedback and validation) were used to ensure that the findings accurately represented the participants' experiences and perspectives.
- Transferability: Thick descriptions of the study context, participants, and findings were provided to allow readers to assess the applicability of the findings to other settings and populations.
- Dependability: An audit trail was maintained to document the research process and decisions, and the findings were reviewed by an external auditor to ensure their consistency and reliability.
- Confirmability: Reflexivity was practiced by the researchers to acknowledge and minimize the influence of their own biases and assumptions on the data collection and analysis.

4. Results

The thematic analysis of the interview transcripts revealed four main themes related to the evolving roles of healthcare support staff in digital healthcare in Hafr Al-Batin, Saudi Arabia.

4.1 Theme 1: The Impact of Digital Technologies on Job Roles and Responsibilities

Participants described how the adoption of digital technologies, such as EHRs, telemedicine platforms, and mobile health applications, has significantly changed their job roles and responsibilities. They reported taking on new tasks related to data management, patient education, and technology troubleshooting, in addition to their traditional administrative and clinical support duties.

"With the implementation of EHRs, I now spend a lot of time entering and managing patient data, which was not part of my job before. I also have to train new staff on how to use the system and troubleshoot any issues that arise." (Medical Secretary, Participant 2)

"I used to spend most of my time assisting doctors with patient examinations and procedures, but now I also have to educate patients on how to use telemedicine platforms and mobile apps for remote consultations and monitoring." (Health Assistant, Participant 8)

Participants also reported that the use of digital technologies has increased their workload and required them to multitask and prioritize their responsibilities. However, they also acknowledged the benefits of these technologies in improving the efficiency and quality of patient care.

"The use of EHRs has definitely increased my workload, as I have to enter data in real-time while also attending to patients' needs. But it has also made it easier to access and share patient information with other healthcare providers, which improves the continuity of care." (Nursing Technician, Participant 15)

4.2 Theme 2: The Need for Continuous Learning and Skill Development

Participants emphasized the importance of continuous learning and skill development to effectively navigate the digital healthcare landscape. They reported participating in various training programs and workshops to acquire new technical, interpersonal, and problem-solving skills.

"I have attended several training sessions on how to use EHRs, telemedicine platforms, and mobile apps. These sessions have helped me develop the technical skills needed to perform my job effectively in the digital age." (Medical Secretary, Participant 5)

"In addition to technical skills, I have also had to develop my communication and empathy skills to effectively interact with patients through virtual means. It requires a different approach than face-to-face interactions." (Health Assistant, Participant 11)

However, participants also reported facing challenges in accessing and completing training programs due to time constraints, scheduling conflicts, and lack of organizational support.

"I often find it difficult to attend training sessions during work hours, as I have to prioritize patient care. I wish there were more flexible and online training options available." (Nursing Technician, Participant 17)

4.3 Theme 3: The Importance of Effective Communication and Collaboration

Participants highlighted the importance of effective communication and collaboration with other healthcare professionals and patients in the context of digital healthcare. They reported using various digital tools and platforms, such as instant messaging, video conferencing, and patient portals, to facilitate communication and coordination of care.

"I use instant messaging apps to communicate with doctors and nurses about patient care, which is much faster and more efficient than using traditional methods like paging or phone calls." (Health Assistant, Participant 14)

"I often use video conferencing to participate in multidisciplinary team meetings and case discussions, which allows me to provide input and stay informed about patient care plans." (Nursing Technician, Participant 18)

However, participants also reported facing challenges in ensuring the accuracy, security, and confidentiality of patient information when using digital communication tools. They emphasized the need for clear protocols and guidelines to govern the use of these tools in healthcare settings.

"I always double-check the recipient and content of any messages or emails containing patient information, as a single mistake can lead to a breach of confidentiality. It's a big responsibility that requires constant vigilance." (Medical Secretary, Participant 6)

4.4 Theme 4: The Challenges of Adapting to New Technologies and Workflows

Participants described the challenges they faced in adapting to new technologies and workflows in their work, including resistance to change, lack of technical support, and concerns about job security and workload.

"When EHRs were first implemented, many of my colleagues were resistant to change and struggled to learn the new system. It took a lot of time and effort to get everyone on board and comfortable with the new workflow." (Medical Secretary, Participant 1)

"I sometimes face technical issues with the telemedicine platform, such as poor audio or video quality, which can be frustrating and time-consuming to resolve. I wish there was more technical support available to help troubleshoot these issues." (Health Assistant, Participant 9)

Participants also expressed concerns about the potential impact of automation and artificial intelligence on their job security and workload.

"With the increasing use of automation and AI in healthcare, I worry that some of my tasks may become redundant or replaced by machines. It's important for healthcare organizations to provide reassurance and support to staff during these transitions." (Nursing Technician, Participant 16)

Table 1. Summary of Themes and Sub-themes

Theme	Sub-themes
The Impact of Digital Technologies on Job Roles and Responsibilities	- New tasks related to data management, patient education, and technology troubleshooting - Increased workload and multitasking - Benefits in improving efficiency and quality of care
The Need for Continuous Learning and Skill Development	- Participation in training programs and workshops - Acquisition of technical, interpersonal, and problem-solving skills - Challenges in accessing and completing training due to time constraints and lack of support
The Importance of Effective Communication and Collaboration	- Use of digital tools and platforms to facilitate communication and coordination of care - Challenges in ensuring accuracy, security, and confidentiality of patient information - Need for clear protocols and guidelines
The Challenges of Adapting to New Technologies and Workflows	- Resistance to change and difficulty learning new systems - Lack of technical support and troubleshooting issues - Concerns about job security and workload with increasing automation and AI

5. Discussion

The findings of this qualitative study provide insights into the evolving roles of medical secretaries, health assistants, and nursing technicians in the context of digital healthcare in Hafr Al-Batin, Saudi Arabia. The four themes that emerged from the analysis highlight the impact of digital technologies on the job roles and responsibilities of healthcare support staff, the need for continuous learning and skill development, the importance of effective communication and collaboration, and the challenges of adapting to new technologies and workflows.

5.1 The Impact of Digital Technologies on Job Roles and Responsibilities

The findings suggest that the adoption of digital technologies, such as EHRs, telemedicine platforms, and mobile health applications, has significantly changed the job roles and responsibilities of healthcare support staff. Participants reported taking on new tasks related to data management, patient education, and technology troubleshooting, in addition to their traditional administrative and clinical support duties. This finding is consistent with previous studies that have highlighted the expanding roles of healthcare support staff in the digital age (Borycki & Kushniruk, 2015; Konttila et al., 2019).

However, the findings also suggest that the use of digital technologies has increased the workload and required healthcare support staff to multitask and prioritize their responsibilities. This finding is consistent with previous studies that have reported the increased workload and stress associated with the adoption of digital technologies in healthcare (Brant & Chaet, 2018; Gagnon et al., 2012). Healthcare organizations need to recognize and address the workload implications of digital technologies on healthcare support staff, and provide adequate resources and support to ensure their well-being and job satisfaction.

5.2 The Need for Continuous Learning and Skill Development

The findings emphasize the importance of continuous learning and skill development for healthcare support staff to effectively navigate the digital healthcare landscape. Participants reported participating in various training programs and workshops to acquire new technical, interpersonal, and problem-solving skills. This finding is consistent with previous studies that have highlighted the need for targeted training and education programs to help healthcare support staff acquire the skills needed to effectively use digital technologies in their work (Borycki & Kushniruk, 2015; Konttila et al., 2019).

However, the findings also suggest that healthcare support staff face challenges in accessing and completing training programs due to time constraints, scheduling conflicts, and lack of organizational support. This finding is consistent with previous studies that have identified barriers to the participation of healthcare support staff in training and education programs (Brant & Chaet, 2018; Gagnon et al., 2012). Healthcare organizations need to provide flexible and accessible training options, and allocate adequate time and resources for healthcare support staff to engage in continuous learning and skill development.

5.3 The Importance of Effective Communication and Collaboration

The findings highlight the importance of effective communication and collaboration among healthcare professionals and patients in the context of digital healthcare. Participants reported using various digital tools and platforms, such as instant messaging, video conferencing, and patient portals, to facilitate communication and coordination of care. This finding is consistent

with previous studies that have emphasized the role of digital technologies in enabling timely and efficient communication and collaboration in healthcare (Borycki & Kushniruk, 2015; Konttila et al., 2019).

However, the findings also suggest that healthcare support staff face challenges in ensuring the accuracy, security, and confidentiality of patient information when using digital communication tools. This finding is consistent with previous studies that have identified the risks and challenges associated with the use of digital technologies in healthcare, such as data breaches, privacy violations, and communication errors (Gagnon et al., 2012; Kerfoot et al., 2010). Healthcare organizations need to establish clear protocols and guidelines for the use of digital communication tools, and provide training and support to healthcare support staff to ensure the safe and effective use of these tools.

5.4 The Challenges of Adapting to New Technologies and Workflows

The findings suggest that healthcare support staff face various challenges in adapting to new technologies and workflows, including resistance to change, lack of technical support, and concerns about job security and workload. This finding is consistent with previous studies that have identified the barriers and challenges associated with the implementation of digital technologies in healthcare, such as the lack of user acceptance, technical issues, and organizational resistance (Borycki & Kushniruk, 2015; Gagnon et al., 2012).

Healthcare organizations need to recognize and address these challenges, and provide adequate support and resources to help healthcare support staff adapt to new technologies and workflows. This may include providing change management training, technical support, and reassurance about job security and workload implications. Healthcare organizations also need to involve healthcare support staff in the planning and implementation of digital technologies, and seek their feedback and input to ensure the usability and acceptability of these technologies.

5.5 Implications for Practice and Policy

The findings of this study have several implications for healthcare practice and policy in Saudi Arabia and beyond. They highlight the need for healthcare organizations to recognize and support the evolving roles of healthcare support staff in digital healthcare, and provide them with the necessary training, resources, and support to effectively navigate the digital healthcare landscape.

Healthcare organizations should develop and implement targeted training and education programs for healthcare support staff, focusing on the acquisition of technical, interpersonal, and problem-solving skills. These programs should be flexible, accessible, and tailored to the specific needs and contexts of healthcare support staff.

Healthcare organizations should also establish clear protocols and guidelines for the use of digital technologies in healthcare, and provide ongoing technical support and troubleshooting assistance to healthcare support staff. They should involve healthcare support staff in the planning and implementation of digital technologies, and seek their feedback and input to ensure the usability and acceptability of these technologies.

Healthcare policymakers should recognize the critical roles of healthcare support staff in digital healthcare, and develop policies and programs to support their professional development and integration in the digital healthcare workforce. This may include providing funding and incentives

for training and education programs, establishing standards and guidelines for the use of digital technologies in healthcare, and promoting interprofessional collaboration and communication among healthcare professionals.

5.6 Limitations and Future Research

This study has several limitations that should be acknowledged. First, the sample size was relatively small and limited to healthcare support staff working in Hafr Al-Batin, Saudi Arabia, which may limit the generalizability of the findings to other settings and populations. Future research should include larger and more diverse samples of healthcare support staff from different geographic and cultural contexts.

Second, the study relied on self-reported data from participants, which may be subject to social desirability bias and recall bias. Future research should use multiple data collection methods, such as observations, document analysis, and objective measures of job performance and satisfaction, to triangulate the findings and enhance their validity and reliability.

Third, the study was cross-sectional and exploratory in nature, and did not examine the long-term impact of digital technologies on the roles and experiences of healthcare support staff. Future research should use longitudinal designs to track the evolving roles and experiences of healthcare support staff over time, and identify the factors that influence their adaptation and integration in digital healthcare.

Finally, the study focused on the perspectives and experiences of healthcare support staff, and did not include the views and experiences of other healthcare professionals, patients, and stakeholders. Future research should use a more comprehensive and inclusive approach to explore the impact of digital technologies on the roles and experiences of all healthcare stakeholders, and identify the facilitators and barriers to effective collaboration and communication in digital healthcare.

6. Conclusion

This qualitative study explored the evolving roles of medical secretaries, health assistants, and nursing technicians in the context of digital healthcare in Hafr Al-Batin, Saudi Arabia. The findings highlight the significant impact of digital technologies on the job roles and responsibilities of healthcare support staff, the need for continuous learning and skill development, the importance of effective communication and collaboration, and the challenges of adapting to new technologies and workflows.

The study emphasizes the critical roles of healthcare support staff in the successful implementation and adoption of digital technologies in healthcare, and the need for healthcare organizations and policymakers to recognize and support their professional development and integration in the digital healthcare workforce.

The insights gained from this study can inform the development and implementation of targeted interventions and policies to support the evolving roles of healthcare support staff in digital healthcare, and promote their effective collaboration and communication with other healthcare professionals and patients.

As digital technologies continue to transform the healthcare landscape, it is essential to ensure that all healthcare professionals, including healthcare support staff, are equipped with the necessary skills, resources, and support to effectively navigate and contribute to the digital healthcare

environment. By doing so, we can harness the potential of digital technologies to improve the quality, efficiency, and patient-centeredness of healthcare services, and ultimately, enhance the health and well-being of individuals and communities.

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