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Digital Transformation in Healthcare Administration: A Systematic Review of the Impact of Telehealth on Administrative and Secretarial Roles

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Abstract

Background: The rapid growth of telehealth has transformed clinical service delivery, but its deep implications for health care's administrative core have gone largely unexamined. Administrative and secretarial staff are essential in the coordination of virtual care, though their role is being reshaped by changing responsibilities, workflow interruptions, and new skill requirements.
Aim: The review aims to conduct a systematic inquiry into how telehealth technologies influence the roles, challenges, and competency needs of administrative and secretarial staff in healthcare.
Methods: A systematic search was carried out through PubMed, CINAHL, Scopus, Business Source Complete, and Web of Science for literature within the period of 2013-2025. Included were qualitative, quantitative, and mixed-methods studies that were analyzed using narrative synthesis.
Results: With telehealth integration, the transformed administrative role encompasses much more complex digital care coordination, patient technology education, and virtual clinic management than traditional scheduling and filing. The integration of telehealth introduced such issues as new digital literacy demands on administration, fragmentation of workflows, and new responsibilities for patient education. Importantly, the "digital front door" to healthcare placed administrative staff at a critical position in the facilitation of equitable access and simultaneously exposed them to new stressors.
Conclusion: The administration of healthcare has been irrevocably altered by telehealth, making the roles more complex but also possibly more rewarding. Strategic investments in training, workflow redesign, and supportive technologies will be required to harness the full potential of administrative professionals in the digital health era.
Keywords: telehealth, healthcare administration, secretarial roles, digital health, workflow optimization

Introduction

The healthcare landscape has undergone a seismic shift with the proliferation of telehealth technologies accelerated by the COVID-19 pandemic, and sustained by evolving patient expectations and technological advancements (Beshbishy, 2024). While significant research has assessed the clinical outcomes of telehealth, patient satisfaction, and physician adaptation, its transformative impact on the administrative and secretarial the essential infrastructure, enabling healthcare delivery-remains comparatively underappreciated (Payne et al., 2016). Administrative professionals, including medical secretaries, health unit coordinators, and patient service representatives, are the critical "digital front door" of modern healthcare organizations, yet their evolving role within the telehealth ecosystem is poorly characterized and supported (Chang et al., 2021).

Before the digital health revolution, all administrative roles involved face-to-face patient interactions, paper-based records management, telephone communications, and in-person scheduling. Comprehensive telehealth platforms, EHRs, patient portals, and virtual visit technologies have now completely restructured these responsibilities (Abernethy et al., 2022). Administrative employees

navigate complicated digital interfaces, troubleshoot a host of technology issues with patients, manage hybrid complexities with in-person and virtual scheduling, and ensure the seamless flow of information in increasingly fragmented digital care pathways. This transformation carries with it several implications for job satisfaction, workflow efficiency, training needs, and, ultimately, the quality of the patient experience (Hoxha et al., 2024).

The profound nature of this role transformation calls for a systematic review. Early evidence suggests that the integration of telehealth has created both opportunities for role enrichment and challenges in terms of skill gaps, increased cognitive load, and workflow inefficiencies (Snoswell et al., 2020). Moreover, the position of administrative staff as the first point of contact for telehealth services places them at the forefront of addressing digital health disparities, making their competence and confidence critical to equitable access to care (Hilty et al., 2020). It is important to understand these dynamics in order for healthcare organizations to optimize operational infrastructure and support the whole workforce through digital transformation.

This review will synthesize the existing evidence on the impacts that telehealth technologies are having on the administrative and secretarial workforce in health service settings. The specific questions this review will seek to answer are: (1) How have core administrative functions and responsibilities changed as telehealth has been integrated?; (2) What are the primary challenges and facilitators to administrative staff working in telehealth-enabled environments? (3) How has the adoption of telehealth impacted workflow efficiency, job satisfaction, and perceived workload of these professionals? and (4) What new skills and training are required to support the administrative workforce in this new paradigm? In answering these questions, this review will provide evidence-informed insights to assist workforce development, organizational policy, and the design of more supportive and effective digital health systems.

Methodology
Search Strategy
A total of five major electronic databases, namely PubMed, CINAHL, Scopus, Business Source Complete, and Web of Science, were searched in December 2024. The search strategy was designed to capture the intersection of telehealth concepts with administrative and secretarial roles in healthcare. Key words included: ("telehealth" OR "telemedicine" OR "virtual care" OR "digital health") AND ("administrative staff" OR "secretary" OR "medical secretary" OR "health unit coordinator" OR "clinical support" OR "non-clinical staff" OR "healthcare administration") AND ("role" OR "workflow" OR "job satisfaction" OR "training" OR "impact"). Boolean operators (AND, OR) were used to combine terms, and searches were limited to publications from

January 2013 to December 2024 to capture the modern era of telehealth development and its accelerated adoption during the pandemic.
Eligibility Criteria
Studies were considered eligible for inclusion if they (a) were original research, including qualitative, quantitative, or mixed-method studies, systematic reviews, and comprehensive case studies published in peer review journals; (b) explicitly investigated the impact or experiences of telehealth technologies on administrative or secretarial personnel, such as medical secretaries, clinic coordinators, administrative assistants, in any healthcare setting; (c) presented results regarding role change, workflow, challenges, training, or job satisfaction; and (d) were written in English. Studies were excluded if they addressed: (a) only clinical providers, including physicians and nurses, without separate administrative staff analyses; (b) the use of telehealth without addressing any administrative implications; (c) editorials, commentaries, or conference abstracts not presenting primary data; or (d) exclusively technical aspects of telehealth systems without any human factors analysis.
Data Analysis and Synthesis
Given the methodological heterogeneity of the included studies, ranging from qualitative to quantitative and mixed-methods studies, a meta-analysis was not possible. Following guidelines by Popay et al. (2006), a narrative synthesis approach was therefore adopted. The data extracted were thematically organized to answer the review questions. Key themes identified were iteratively compared and refined; these have formed the thematic structure presented in the results section below.
Evolution of Administrative Functions and Responsibilities
While telehealth integration has not only automated several existing administrative tasks, it has also largely redefined the role and nature of the work. In sum, the core transformation of these roles is shown in Table 1 and Figure 1.
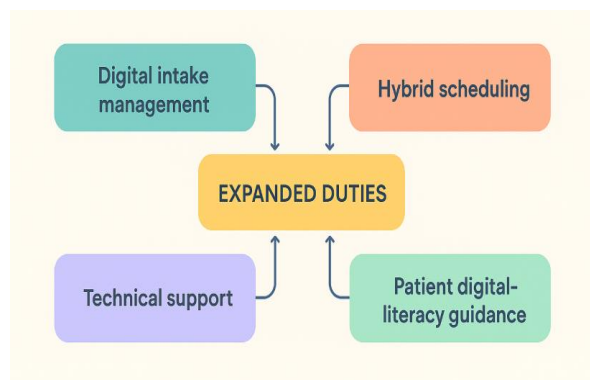

Figure 1: Transformation of Key Administrative Functions in the Telehealth Era

Table 1: Transformation of Key Administrative Functions in the Telehealth Era

Traditional Administrative Function	Telehealth-Enhanced/New Function	Key Changes & Implications
In-Person Patient Scheduling	Hybrid Schedule Management	Managing complex logistics across virtual and physical visits; coordinating different platforms and resource types (e.g., video, phone, in-person).
Face-to-Face Check-in/Registration	Digital Intake & Pre-Visit Preparation	Guiding patients through digital portals and forms, ensuring completion of e-consents and pre-visit questionnaires remotely.
Physical Medical Records Management	Digital Information Flow Coordination	Ensuring seamless data flow between telehealth platforms and EHR; managing digital documents, video recordings, and asynchronous messages.
In-Person Communication	Multi-Channel Patient Communication	Utilizing secure messaging, email, and video platforms, developing new etiquette for digital communication.
Basic Clerical Support	Patient Digital Literacy Support	Troubleshooting patient-side technology issues (audio, video, platform access); providing pre-visit technical guidance.
Billing and Coding Support	Telehealth-Specific Billing & Compliance	Navigating evolving telehealth billing codes, insurance requirements, and cross-state licensure regulations for virtual visits.

From Scheduler to Digital Care Coordinator

The most significant shift has been the transformation from a traditional scheduler to a digital care coordinator. Scheduling remains a core function, but it has become immensely more complex. Hybrid schedules that interweave virtual and in-person appointments are to be juggled by administrative staff, each with different resource requirements, platform needs, and duration expectations (Trockel et al., 2024). This requires deep knowledge of numerous telehealth modalities, including video, audio-only, and asynchronous e-visits, matching patient needs, technological capability, and clinical needs to the proper modality. The role further extends to proactive digital intake management, ensuring patients complete required e-forms, consents, and pre-visit questionnaires in advance of their virtual visit, an important step in maintaining clinical efficiency (Gold & McLaughlin, 2016).

The Emergence of the Technology Facilitator Role

One new and challenging role involves serving as a technology facilitator for patients. Administrative staff members are more and more often the front line of support for patients who are struggling with digital health tools, including facilitating the downloading of applications, creating accounts, testing audio and video, and troubleshooting connection issues in real time (Naamati-Schneider et al., 2025). Not only does this require technical knowledge, but also great patience and customer service skills, since these are generally vulnerable or technically inexperienced populations. This puts administrative staff in a unique position to address the digital divide, yet they are often underprepared and unsupported for this role of technical triage (Williams & Shang, 2024).

Information Flow and Workflow Management

The digital nature of telehealth has changed the core flow of information. Administrative staff are now tasked with managing the digital "rooming" process: making sure the virtual waiting room works well, notifying providers of patient arrival, and facilitating the handoff into the virtual encounter (Alluqman et al., 2025; Asgari et al., 2024). Their responsibilities have also expanded to include management of post-consultation digital after-visit summaries, coordination of e-prescriptions, and facilitation of referrals that may stem from a virtual visit. This requires fluency in digital communication platforms and attention to detail so that no piece of patient information or task slips through the virtual cracks (Doleman et al., 2023).

Challenges and Facilitators for Administrative Staff

The shift to telehealth-dominated workflows has imposed a unique set of challenges on administrative staff, while at the same time revealing some key facilitators that can enable successful adaptation and optimized performance in this new digital environment (Figure 2).

Key Challenges

Several significant challenges abound within the telehealth landscape for administrative personnel. A leading and consistently noted challenge involves the gap in digital literacy and training. The rapid pace of technological change often outpaces the support provided, leaving staff expected to master multiple, sometimes non-integrated platforms without comprehensive instruction. This deficit extends beyond simple software proficiency to encompass understanding new hybrid workflows and troubleshooting common technical problems, leading

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to considerable stress and operational inefficiencies (Honeyford et al., 2022). Furthermore, it is important to note that workflow fragmentation commonly arises from the coexistence of in-person and virtual care streams. The constant need to switch contexts between different systems, such as between the EHR, the telehealth platform, and the phone system, while managing parallel processes for the different appointment types, significantly increases the cognitive load and elevates the risk of errors, with the lack of streamlined integrated systems being a major source of frustration (Sinsky et al., 2022).

Communication has become increasingly complicated; the absence of non-verbal cues in digital interactions complicates patient engagement, and a substantial portion of administrative time is now focused on educating patients on how to use telehealth platforms. Many staff feel ill-equipped for this technical support role, which is particularly daunting when serving patients with limited health literacy or low technological self-efficacy (Davidson et al. 2013). Finally, the rapid evolution of responsibilities has fostered role ambiguity for many. Unclear expectations, combined with the pressure of being the primary "face" of the organization's digital front door, contribute significantly to increased stress and risk of burnout (Ray & Kahn, 2020).

Critical Facilitators

On the other hand, several critical factors have been identified that reduce these challenges and promote success. There is a significant need for investment in comprehensive and role-specific training. Success is strongly associated with ongoing education that extends beyond basic software tutorials to include workflow management, patient communication scripts for technical support, and structured problem-solving strategies, which build confidence and competence (Tutty et al., 2019). From a technological perspective, the direct integration of telehealth platforms into the core EHR system is a strong facilitator. This reduces the number of different logins, minimizes disruptive tab-switching, and allows for a smoother flow of information, thereby greatly simplifying the administrative workflow and reducing cognitive burden (Zhang & Saltman, 2022).

Putting in place standardized protocols and clear guidelines is another critical ingredient. The availability of well-defined procedures for scheduling telehealth appointments, conducting virtual waiting room management, no-show management, and technical failure management provides essential clarity, reduces ambiguity, and allows staff to do their jobs confidently and autonomously (Burgess & Honey, 2022). Lastly, a supportive team culture and active leadership are the bedrock of successful adaptation. One critical element is an environment in which the administrative staff can feel safe asking for help and reporting problems without fear of blame. In addition, leadership that seeks and incorporates input from administrative staff into the design of workflows and procurement of technology leads to systems that are developed to become more usable, effective, and supportive (Shah et al., 2023).
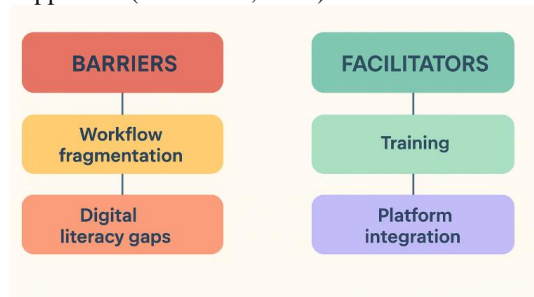

Figure 2: Workflow challenges and facilitators for administrative staff in the telehealth ecosystem.

Impact on Workflow Efficiency, Job Satisfaction, and Skills

In fact, the impact of telehealth on administrative work is multi-dimensional, ranging from operational metrics to human resource outcomes.

Workflow Efficiency

The impact on efficiency is mixed and context-dependent. On one hand, telehealth can reduce the time wasted on physical tasks such as filing and managing paper charts. Automated reminders and digital forms can also streamline pre-visit processes (Mohammadnejad et al., 2023). On the other hand, this may be offset by time spent on technical support, managing more complex hybrid schedules, and talking to patients through multiple digital channels. Efficiency is highest in settings where technology is well-integrated, and workflows are thoughtfully redesigned to accommodate the new digital reality rather than simply layering telehealth onto old processes (Shah et al., 2016; Adler-Milstein et al., 2021).

Job Satisfaction and Well-being

Competing factors influence job satisfaction for administrative staff in the telehealth context. Several studies note that the added responsibility and new technologically advanced skills lead to greater role enrichment, professional growth, and an increased sense of contribution to patient care (Hakami et al., 2025). This can be counterbalanced by stressors associated with the role pressure of technical troubleshooting, perceived lack of support, and inefficiencies in workflows. A risk of burnout may occur if challenges are not proactively managed (Woods et al., 2023).

Key Skills Required in the Future

The skill set for administrative success has dramatically expanded. Technical skills are now foundational and involve proficiency across numerous software platforms; thus, a person should be able to troubleshoot common issues themselves. Adaptability and problem-solving skills are necessary to adapt to an environment in constant change. Advanced communication skills are necessary to direct and

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comfort patients remotely and to communicate effectively in the care team through digital means. Finally, digital empathy, or the ability to show care, patience, and understanding through a digital medium, is an emerging key competency to ensure a positive patient experience (Park et al. 2023; James et al., 2021). These impacts and shifting needs are highlighted in Table 2.

Table 2: Impact of Telehealth on Administrative Staff Outcomes & Changing Skill Needs

Domain	Positive Impacts	Negative Impacts	Evolving Skill Requirements
Workflow Efficiency	- Automation of physical tasks - Streamlined digital intake - Reduced no-shows with reminders	- Time-consuming tech support - Complex hybrid scheduling - Fragmented workflows across systems	- Digital workflow management - Proficiency with integrated platforms - Technical triage ability
Job Satisfaction & Wellbeing	- Role enrichment & growth - Acquisition of valuable new skills - Enhanced contribution to care	- Role ambiguity & stress - Increased cognitive load - Risk of burnout from tech demands	- Stress management & resilience - Boundary setting - Time management in digital context
Professional Competencies	- Increased autonomy in some tasks - Becoming a "digital front door" expert	- Constant need for upskilling - Pressure to be a "tech expert"	- **Technical Proficiency:** Platform mastery, basic troubleshooting - **Digital Communication:** Clear remote guidance, written etiquette - **Digital Empathy:** Conveying care through technology - **Adaptability:** Learning new systems quickly

Discussion and Synthesis

This review demonstrates that telehealth technologies have catalyzed a fundamental transformation in healthcare administration, moving it from a primarily supportive, transaction-based function to a dynamic, patient-facing, and technology-enabled role. The administrative professional is no longer just behind the scenes but a central actor in the delivery of digital care. The findings reveal a tension between the potential for role enhancement and the risks of role strain, largely determined by organizational support, technological infrastructure, and the approach to implementation.

The evolution into "digital care coordinator" and "technology facilitator" administrative roles is considered part of broader trends toward team-based models and digital patient engagement. However, this role evolution has often been reactive rather than driven by strategic workforce planning. Identified challenges include training gaps, workflow fragmentation, and the increased burden of patient technical support, all representing a shared failure in the complete integration of administrative staff into the implementation lifecycle for telehealth services as described by do Nascimento et al. (2023). Their frontline perspective is a very valuable but often underutilized resource for informing and improving the design of more user-friendly and efficient digital pathways of care.

The impact on job satisfaction is nuanced. On one hand, this opportunity for upskilling and engaging in more complex and meaningful work serves as a significant motivator and may help re-professionalize these critical roles. On the other hand, the persistent feeling of being undervalued, under-supported, and overwhelmed by technological complexity threatens to exacerbate burnout and turnover in an otherwise essential workforce for operational stability (Zhang et al., 2021). The dichotomy above defines where the future resilience of health care systems lies.

One of the critical implications from this paper is that health equity depends uniquely on administrative staff. In many ways, as a line of first contact for telehealth services, the patience and facilities to guide patients with different levels of digital literacy strongly affect who can and cannot access virtual care (Gallegos-Rejas et al., 2022). The training and support of these staff are thereby not only operational imperatives but ethical ones, necessary to ensure that digitalization does not widen existing health disparities.

Conclusion and Future Directions

This review confirms that the advent of telehealth technologies has irreversibly altered the roles, responsibilities, and competencies required of administrative and secretarial staff working in healthcare. They are now crucial to the success of digital care delivery, serving as care coordinators, technology navigators, and the human connection in virtual interactions. This transformation carries challenges related to workflow, training, and well-being, but also presents a historic opportunity to raise

the importance and professional standing of the healthcare administrative workforce. To realize this potential, healthcare organizations have to be proactive.

First, investment in ongoing, role-specific, and hands-on training of administrative staff is necessary. Training should go beyond mere software tutorials to include workflow management, advanced communication skills, and principles of digital health equity. Second, technology acquisition and implementation should emphasize integration and usability from the administrative perspective. Administrative staff should be involved in the selection and design of telehealth systems to ensure that these tools serve to facilitate rather than hinder their workflow. Third, organizational leaders should formally recognize the expanded scope of these roles, which may include updating job descriptions, offering competitive compensation, and developing clear pathways for career advancement in digital health administration. Future research should be directed at: 1) creating and evaluating standardized training programs for administrative staff in telehealth coordination; 2) designing and testing integrated telehealth-EHR workflows that reduce cognitive load and fragmentation; and 3) examining the relationship between administrative support and key outcomes such as patient access, provider satisfaction, and quality of the telehealth experience. Healthcare organizations can build more resilient, efficient, and equitable telehealth ecosystems for the future by strategically supporting their administrative backbone.

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