



A Socio-Historical Review of the Evolution of Medical Records and Its Impact on the Division of Labor Between Nursing, Physiotherapy, and Administrative Staff

Nawal Majed Alharbi ⁽¹⁾, Minahi Fehaid Musaibeeh Alotaibi ⁽²⁾, Sultan Abdullah Dhawi Alotaibi ⁽³⁾, Faisal Abdullah Althuwaibi ⁽⁴⁾, Abdulaziz Fahad Alsulaimani ⁽⁴⁾, Fatimah Mahboob Mohammad Mangahi ⁽⁵⁾, Turki Rageh Alboqami ⁽⁶⁾, Salha Mohammed Al-Thrwy ⁽⁷⁾, Rehab Nasser Al-Hazmi ⁽⁸⁾, Mansour Ayed Al Anezi ⁽⁹⁾, Ahmed Adnan Ahmed Baqqashi ⁽¹⁰⁾, Mazen Mohammed Abdu Asiri ⁽¹¹⁾

(1) Qassim, Buraidah (Al-Mulayda Primary Healthcare Center), Ministry of Health, Saudi Arabia,

(2) Dawadmi General Hospital, Ministry of Health, Saudi Arabia,

(3) King Faisal Hospital in Taif, Ministry of Health, Saudi Arabia,

(4) King Faisal Medical Complex, Taif, Ministry of Health, Saudi Arabia,

(5) Prince Mohammed bin Nasser Hospital, Ministry of Health, Saudi Arabia,

(6) Ministry of Health branch in Riyadh, Saudi Arabia,

(7) Harob Phc, Ministry of Health, Saudi Arabia,

(8) Al-Jahw Health Center, Ministry of Health, Saudi Arabia,

(9) Riyadh, Al Salam Health Center, Ministry of Health, Saudi Arabia,

(10) Ministry Of Health , Saudi Arabia,

(11) King Fahd Central Hospital – Jazan, Ministry of Health, Saudi Arabia

Abstract

Background: The medical record has evolved from a simple bedside notebook into a complex digital infrastructure, representing not merely a technological upgrade but a fundamental reorganization of clinical work, communication, and professional relationships.

Aim: This narrative review traces the socio-historical evolution of medical records through a sociological lens, examining how technological shifts have reconfigured the division of labor among nurses, physiotherapists, medical secretaries, and health informaticians, analyzing the redistribution of documentation responsibilities, impact on professional boundaries, and enduring tensions between clinical care and administrative demands.

Methods: A comprehensive literature search was conducted across academic databases for peer-reviewed articles, ethnographic studies, and policy analyses published between 2010 and 2024.

Results: The medical record has always been a site of professional negotiation. The paper era positioned nurses as expert gatekeepers, while physiotherapists maintained parallel records and medical secretaries managed paper flow. EHR transition, accelerated by the HITECH Act, disrupted these roles, thrusting physicians into data entry, challenging physiotherapists' ICF integration, and creating new informatician mediators. Persistent friction includes nursing burnout and constant role renegotiation.

Conclusion: Digitization has fundamentally reshaped healthcare's division of labor, creating new hierarchies and redistributing power. Understanding this context is essential for designing systems that support collaborative, patient-centered care.

Keywords: Electronic Health Records, Division of Labor, Sociology of Professions, Nursing Documentation, Health Informatics.

Introduction

The medical record, in its various historical forms, is far more than a passive repository of clinical data. It is a dynamic social artifact that shapes and is shaped by the interactions, hierarchies, and work practices of healthcare professionals (Pirnejad & Bal, 2017; Timmermans & Berg, 2010). From the bedside observations scribbled in 19th-century ledgers to the terabytes of structured data in contemporary electronic health records (EHRs), the evolution of documentation reflects deeper transformations in medicine, technology, and society (Gillum, 2013).

What began as a tool for individual clinicians to memorialize case histories has become a centralized infrastructure for billing, quality measurement, research, and population health surveillance (Stansbie, 2020). This expansion of purpose has had profound, and often unintended, consequences for the healthcare workforce.

This narrative review adopts a sociological lens to examine the co-evolution of medical records and the division of labor among four key occupational groups: nurses, physiotherapists, medical secretaries, and the emergent profession of health informaticians.

The central argument is that each technological epoch—from the early paper chart to the standardized form, and finally to the integrated EHR—has not merely automated existing tasks but has fundamentally reconfigured professional boundaries, redistributed power, and created new forms of work and new sources of tension (Barley, 2020; Orlikowski & Scott, 2023). The shift from paper to pixel represents a paradigmatic case of technological change as organizational and social change (Jacquemard et al., 2020).

Drawing on theories from the sociology of professions, particularly those concerning jurisdiction, professional identity, and the division of expert labor (Abbott & Meerabeau, 2020; Freidson & Lorber, 2017), this review synthesizes recent literature to address three interrelated questions. First, how have historical shifts in medical record technology altered the distribution of documentation responsibilities among these professional groups? Second, what has been the impact of these changes on interprofessional boundaries, power dynamics, and status hierarchies? Third, what are the ongoing tensions between the imperative for clinical care and the escalating demands of administrative documentation in the digital era? By tracing this history, the review aims to provide a critical foundation for understanding the current challenges of EHR implementation and for imagining more humane and collaborative futures for healthcare work.

Nurses as Gatekeepers, Physiotherapists as Scribes, and Secretaries as the Hub

For much of the 19th and 20th centuries, the medical record existed as a paper-based artifact, its form and function varying significantly by institution and even by ward (Gillum, 2013). Early records were often little more than physicians' notebooks, but as medicine grew more complex and hospital care became standardized, the chart evolved into a structured collection of forms, progress notes, flowsheets, and reports (Conrad, 1985). In this analog world, a distinct division of labor emerged, rooted in professional hierarchies and the material properties of paper itself.

Expert Administrators and Gatekeepers

Nurses occupied a central, though often undervalued, role as the expert administrators of the patient chart. Nursing documentation, rooted in the holistic assessment traditions of pioneers like Florence Nightingale, emphasized systematic observation of the patient's condition, including vital signs, comfort, nutrition, and elimination (Stansbie, 2020). The paper flow sheet became the quintessential nursing tool—a visual representation of the patient's trajectory over time.

Nurses were not simply data entry clerks; they were the guardians of the chart's completeness and accuracy. They ensured that physician orders were transcribed correctly, that laboratory results were filed, and that the chart followed the patient from

department to department (Conrad, 1985). This role granted nurses significant informal power. As the constant presence at the bedside and the consistent handlers of the chart, they controlled the flow of information (Pirnejad & Bal, 2017). A physician might dictate an order, but it was the nurse who translated that order into action and documented its execution. This made the nurse an indispensable "expert administrator" and a critical node in the communication network, a role that was deeply embedded in their professional identity (Timmermans & Berg, 2010). Caring for the record was, in a very real sense, seen as integral to caring for the patient (Maitra et al., 2021).

Parallel Documentation and Professional Identity

Physiotherapists, in contrast, often operated in a parallel documentary universe. While their notes were part of the legal medical record, physiotherapy documentation evolved separately, reflecting the profession's unique focus on function, movement, and disability (Keel et al., 2023). Notes were often narrative, describing a range of motion, muscle strength, gait patterns, and functional limitations. The profession's struggle to find a standardized language for its observations predates the digital era, with early efforts to codify functional status existing outside the mainstream biomedical model dominated by the International Classification of Diseases (ICD) (Saketkoo et al., 2022). Physiotherapists' paper notes, while clinically rich, were often difficult to integrate into the primarily disease-focused narrative of the physician-driven chart. They existed as a specialized, and sometimes marginal, component of the patient's story, reflecting the profession's ongoing quest for recognition and professional autonomy (Abbott & Meerabeau, 2020).

Medical secretaries and administrative staff served as the logistical hub of the paper-based system (Conrad, 1985). They were the scribes who transcribed physician dictation, the file clerks who managed the physical storage and retrieval of charts, and the gatekeepers who ensured that the right piece of paper reached the right person at the right time. Their work was essential for the coordination of care, yet it was largely invisible and often devalued as clerical rather than clinical (Cordelier et al., 2021). They managed the immense paperwork of hospital life—admission forms, consent documents, referral letters, and discharge summaries. The medical secretary's desk was the physical nexus where the diverse streams of paper-based information converged, requiring meticulous organization and a deep, practical understanding of hospital workflows and professional jurisdictions (Conrad, 1985). This role, while subordinate in the professional hierarchy, was crucial for maintaining the fragile order of a pre-digital hospital.

The paper era, for all its inefficiencies (lost charts, illegible handwriting, delayed communication), had a certain stability. Professional

roles around documentation were clear, if hierarchical, and were reinforced by daily material practices. The chart was a known entity, and the division of labor for managing it was deeply enculturated (Pirnejad & Bal, 2017).

The First Digital Waves: Computerization, Standardization, and the Seeds of Disruption

The shift from paper to digital began in the 1960s and 1970s with early, mainframe-based systems in academic medical centers, but it was not until the 1980s and 1990s that personal computers and relational databases enabled more widespread adoption of departmental systems (Gillum, 2013). This era saw the rise of stand-alone applications for laboratory results, pharmacy orders, and radiology reporting, as well as early electronic immunization registries (Blumenthal & Tavenner, 2010). This period of "islands of automation" began to disrupt the old order, but it did so unevenly. Nurses might use a system to document vital signs, while physiotherapy notes remained on paper, and medical secretaries continued to transcribe dictated reports that would then be scanned or manually entered. This fragmentation created new kinds of work, as staff had to manage multiple systems and ensure information was reconciled across them (Wang et al., 2019).

A significant milestone for nursing was the development and recognition of standardized terminologies, such as the Omaha System, recognized by the American Nurses Association in 1992 (Stansbie, 2020). This represented an effort to codify nursing knowledge into a format that could be processed by computers, a crucial step for moving nursing documentation from the free-text flowsheet into structured data fields. However, this standardization also began to change the nature of nursing documentation, shifting it from a narrative of patient care to a checklist of coded observations (Timmermans & Berg, 2010). The seeds of "charting by clicking" were sown, a trend that would later be cited as a major contributor to documentation burden (Moy et al., 2021).

For physiotherapists, this era brought growing awareness of the need to align their documentation with emerging international standards, particularly those published by Saketkoo et al. in 2022 (Saketkoo et al., 2022). The ICF offered a biopsychosocial framework that was theoretically perfectly suited to physiotherapy, encompassing body functions, activities, participation, and environmental factors. However, integrating this complex, multidimensional framework into the largely biomedical, diagnosis-oriented structure of early EHRs proved to be a profound challenge (Keel et al., 2023). The profession faced the risk of its unique perspective being marginalized in a digital world designed around the concepts of medicine and billing (Abbott & Meerabeau, 2020).

Medical secretaries during this period saw their work transformed by word processing and

dictation software, but the fundamental task of transcribing and managing documents remained. However, the shift towards systems that required direct data entry by clinicians began to encroach on their traditional territory (Cordelier et al., 2021). The stage was being set for a more radical reconfiguration of roles, one that would be accelerated by policy and the advent of truly integrated EHRs.

The HITECH Act and the Mandate for Meaningful Use

The passage of the Health Information Technology for Economic and Clinical Health (HITECH) Act in 2009 was a watershed moment in the history of medical records in the United States (Blumenthal & Tavenner, 2010). By allocating approximately \$27 billion in incentives for the "meaningful use" of EHRs, the federal government effectively mandated a rapid, nationwide transition from paper to digital (Adler-Milstein & Jha, 2017). The goal was not simply to digitize the paper chart, but to transform healthcare through improved quality, safety, and efficiency (Kellermann & Jones, 2013). However, the speed and scale of this mandated change had profound, and often disruptive, consequences for the healthcare workforce.

The "meaningful use" criteria required hospitals and clinicians to meet specific targets for using EHR functionality, such as computerized provider order entry (CPOE), electronic prescribing, and clinical decision support (Blumenthal & Tavenner, 2010). This mandate fundamentally altered the division of labor by forcing tasks onto specific professional groups. Most significantly, CPOE required physicians to directly enter orders into the computer—a task that had traditionally been performed by nurses or ward clerks who transcribed written or verbal orders (Gates et al., 2021). As a landmark ethnographic study of CPOE implementation revealed, this seemingly simple shift disrupted deeply ingrained professional roles and identities (Iedema et al., 2018).

Doctors, who saw themselves as "thinkers" and authorizers, were now expected to be "doers" and data entry clerks (Salahuddin et al., 2020). Nurses, who had prided themselves on their expert administration of the paper chart, suddenly found their role and legitimacy challenged as the system bypassed their traditional gatekeeping function (Iedema et al., 2018). This led to significant friction, with physicians resisting the new system, making errors, and relying on nurses to guide them through it, a dynamic that saw nurses become "chasers" and informal trainers for "clueless" doctors (Iedema et al., 2018). The CPOE system, in its design, encoded a particular hierarchy (physician-as-orderer) that clashed with the established social order of the ward, forcing staff into complex renegotiations of their roles and responsibilities to ensure patient safety (Gates et al., 2021).

For nurses, the HITECH Act accelerated the trend towards structured, checklist-based documentation. EHRs promised that they would free up nurses' time for patient care by streamlining charting (Sokolow et al., 2021). The early reality was often the opposite. Burdened by duplicative documentation requirements, poorly designed interfaces, and the need to click through numerous screens to document normal findings, nurses found themselves spending more time on the computer and less time at the bedside (Moy et al., 2021). The very act of "caring for the record" became a source of stress and burnout, as the system seemed to demand attention to the icon of the patient (the chart) at the expense of the patient themselves (Maitra et al., 2021). The perception grew that nurses were caring more for the chart than for the human being in the bed, a sentiment captured powerfully in the literature on EHR-related burnout (Moy et al., 2021; Rosenbaum, 2015).

For physiotherapists, the HITECH Act's emphasis on standardized, structured data for quality reporting and research created both opportunities and existential challenges (Keel et al., 2023). On one hand, it provided a powerful impetus to digitize and standardize physiotherapy documentation, potentially elevating the profession's visibility within the integrated health record (Saketkoo et al., 2022). On the other hand, it threatened to force physiotherapy into a Procrustean bed of biomedical and billing codes that failed to capture the essence of functional assessment and intervention. The systematic review by Keel et al. (2023) highlights the persistent challenges in this area,

noting that a key factor influencing successful EHR adoption in physiotherapy was the ability to integrate the ICF framework into the system's design. Where systems failed to accommodate this, physiotherapists struggled with data quality, completeness, and the sense that their professional insights were being lost or distorted (Keel et al., 2023).

The HITECH Act also catalyzed the formalization and expansion of a new professional group: health informaticians (Sokolow et al., 2021). As the complexity of implementing, customizing, and maintaining EHRs grew, so did the demand for specialists who could bridge the gap between clinicians and technology (Gagnon et al., 2012). Nursing informatics, in particular, emerged as a formal specialty, with roles for registered nurses who could lead optimization efforts, train colleagues, and advocate for clinical workflows within the digital infrastructure (Sokolow et al., 2021). These "informaticists" and "influencers" became a new layer in the division of labor, holding significant power in shaping how clinical work was encoded and performed (Wang et al., 2019). Their decisions about flowsheet design, required fields, and default values had direct consequences for the daily work of nurses, physiotherapists, and physicians (Adaba & Kebebew, 2017). This new profession, while essential, also introduced a new source of tension, as clinical staff sometimes viewed informaticians as agents of an administrative or IT agenda, rather than as allies in improving care (Jacquemard et al., 2020).

Table 1: The Evolving Division of Labor Across Technological Eras

Professional Group	Paper Era (c. 1900-1990s)	Early Digital Era (1990s-2000s)	Post-HITECH/Integrated EHR Era (2010s-Present)
Nursing	Expert administrators and gatekeepers of the paper chart (Stansbie, 2020). "Caring for the record" as part of caring for the patient (Conrad, 1985).	Transition to flowsheets and early documentation systems. Standardized terminologies (e.g., Omaha System) emerge (Stansbie, 2020).	Data entry burden, "charting by clicking," and burnout (Moy et al., 2021). Role shifts from gatekeeper to "chaser" and data verifier (Iedema et al., 2018). Emergence of nursing informatics as a sub-specialty (Sokolow et al., 2021).
Physiotherapy	Parallel, narrative-based documentation focused on function and movement. Often marginalized within the main medical chart (Abbott & Meerabeau, 2020).	Growing awareness of ICF (WHO, 2001). Struggle to integrate functional assessment into emerging digital formats (Keel et al., 2023).	Risk of professional invisibility within biomedical/billing-focused EHRs. Challenges in data quality, completeness, and ICF alignment (Keel et al., 2023). Need to advocate for profession-specific digital tools.
Medical Secretaries	Logistical hub: transcription, filing, chart management, and information coordination. Invisible but essential work (Conrad, 1985).	Shift from typewriters to word processors and dictation systems. Management of scanned documents and hybrid records (Cordelier et al., 2021).	Role evolution into data quality specialists, release of information coordinators, and key users of health information exchange systems (Cordelier et al., 2021). Ongoing but transformed.
Health Informaticians	Non-existent as a formal profession. IT support	Emergence of specialized roles in	Formalized profession (clinical nursing informaticists,

was separate from larger institutions to manage departmental systems (Gagnon et al., 2012).	informaticists). Powerful mediators who translate clinical work into digital infrastructure (Sokolow et al., 2021). "Influencers" in workflow optimization (Wang et al., 2019).
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The Role Proliferation, "Taskification," and the Struggle for Professional Visibility

The contemporary EHR era, now two decades into the 21st century, is characterized by a complex and often contested division of labor. The integration of digital records into every facet of healthcare has led to what Cordelier et al. (2021) describe as the proliferation of new medical and paramedical roles, often created as a "palliative" to manage the fragmentation and atomization of work caused by the very technology intended to integrate care. This phenomenon, sometimes termed "taskification," involves the breaking down of complex professional work into discrete, often auditable, tasks that can be distributed across multiple individuals or tracked by the system (Timmermans & Berg, 2010). The EHR itself becomes the central coordinator of this distributed labor, but its coordination is often experienced as a source of stress and alienation (Jacquemard et al., 2020).

For nurses, the documentation burden remains a critical issue. A study on nursing time and electronic documentation found that the impact on patient interaction is heavily dependent on system design and implementation (Sokolow et al., 2021). Poor usability, information overload, and the need to document "normal" values contribute to frustration and can lead to burnout (Moy et al., 2021). However, positive examples also exist. The case of Sutter Health, which streamlined its Epic workflows to allow nurses to document "by exception" (only noting abnormal findings), demonstrates the potential for optimization (Schulte & Fry, 2019). By engaging front-line nurses in the redesign process, the organization saved nurses 400,000 clicks per day, reduced overtime, and dramatically improved satisfaction scores (Singh et al., 2023). This case highlights the critical importance of giving nursing professionals a voice in shaping the digital tools that structure their work (Sokolow et al., 2021). It also underscores the power of nursing informaticists, who led this massive optimization project, to effect meaningful change (Coiera et al., 2016).

Physiotherapists continue to navigate a landscape where their professional perspective is not seamlessly integrated. The systematic review by Keel et al. (2023) confirms that persistent challenges remain in data quality, completeness, and alignment with the ICF framework. The risk is that physiotherapy becomes invisible in a data-driven healthcare system (Heller-Roazen et al., 2018). If functional status, the core outcome of rehabilitation, is not captured in a standardized, searchable format within the EHR, it

cannot be used for quality improvement, research, or to demonstrate the value of physiotherapy interventions (Keel et al., 2023). The burden falls on individual physiotherapists and professional bodies to advocate for system designs that accommodate the ICF and to develop the informatics skills necessary to make their data count (Saketkoo et al., 2022). The profession is at a critical juncture: it must either actively shape the digital future or be shaped by it (Abbott, 2014).

The role of the medical secretary has not disappeared but has been fundamentally transformed (Cordelier et al., 2021). While the days of transcribing from dictaphones are largely over, medical secretaries now manage the complex digital ecosystem of the EHR. They are often the experts in releasing information, managing the flow of documents from external providers, ensuring the accuracy of patient demographics and insurance information, and supporting clinicians with the nuances of the EHR's administrative functions (Cordelier et al., 2021). Their role has become more technically demanding, requiring deep knowledge of health information systems, privacy regulations (like HIPAA), and the organizational workflows that the EHR is meant to support (Conrad, 1985). They are the unsung heroes of data quality, often correcting errors and filling gaps left by busy clinicians (Cordelier et al., 2021).

The emergence of the health informatician as a distinct professional group represents a significant shift in the balance of power (Sokolow et al., 2021). These individuals, often with clinical backgrounds (nursing, medicine, pharmacy), hold a unique kind of expert power. They understand the language of both the clinic and the IT department (Gagnon et al., 2012). They are the ones who decide which fields are mandatory, how flowsheets are organized, and what alerts pop up for clinicians (Abraham et al., 2016). As the Sutter Health example shows, when informaticians work in genuine partnership with front-line staff, they can be powerful agents of positive change (Schulte & Fry, 2019). However, when they are perceived as distant from the clinical trenches, or when their work is driven primarily by administrative or billing imperatives, they can become a source of frustration (Jacquemard et al., 2020). They are the new mediators in the division of labor, translating the messy, human work of care into the clean, logical structures of the database (Adaba & Kebebew, 2017). This translation is never neutral; it always involves choices that privilege certain kinds of work and certain professional perspectives over others (Stansbie, 2020).

Table 2: Contemporary Challenges and Tensions in the EHR-Mediated Division of Labor

Professional Group	Primary Contemporary Challenge	Impact on Professional Boundaries/Power	Strategies for Mitigation (from literature)
Nursing	Excessive documentation burden, burnout, decreased time at the bedside (Moy et al., 2021; Rosenbaum, 2015).	Erosion of traditional gatekeeping role; new power for nursing informaticists; risk of being reduced to data entry clerks (Iedema et al., 2018; Sockolow et al., 2021).	Engaging nurses in EHR design and optimization; implementing "charting by exception" workflows; providing voice recognition and mobile documentation tools (Schulte & Fry, 2019; Sockolow et al., 2021).
Physiotherapy	Invisibility of functional data; poor integration of the ICF framework; data quality concerns (Keel et al., 2023).	Risk of professional marginalization in a data-driven system; struggle to assert the value of the profession through documentation (Abbott, 2014).	Advocacy for ICF-aligned EHR design; development of physiotherapy-specific informatics competencies; research to demonstrate the value of structured functional data (Keel et al., 2023; WHO, 2001).
Medical Secretaries	Evolving role from transcriber to digital data manager and quality controller; need for advanced technical and regulatory knowledge (Cordelier et al., 2021).	Continued essential, but often invisible, role in data integrity and information flow; potential for expanded responsibility and recognition (Conrad, 1985).	Formal recognition of the advanced skills required for the role; integration into health information management teams and training programs (Cordelier et al., 2021).
Health Informaticians	Balancing the demands of administration, IT, and clinicians; avoiding the perception of being disconnected from front-line care (Jacquemard et al., 2020).	Significant new power to shape workflows and professional practice through system design; role as mediators and translators (Abraham et al., 2016; Adaba & Kebebew, 2017).	Fostering genuine co-design with front-line clinicians; prioritizing usability and clinical relevance alongside administrative and billing needs (Sockolow et al., 2021; Schulte & Fry, 2019).

Clinical Care vs. Administrative Demand

Underlying all these shifts in the division of labor is a fundamental and enduring tension: the conflict between the imperative for clinical care and the demands of administrative documentation. The medical record, once a tool for the clinician, has become a master that demands to be served (Maitra et al., 2021). It serves multiple masters—billing departments, quality regulators, legal reviewers, and researchers—each with its own requirements for data that is complete, structured, and auditable (Stansbie, 2022; Timmermans & Berg, 2010). This proliferation of purposes has transformed the act of documentation from a clinical tool for communication and memory into a high-stakes administrative task (Adaba & Kebebew, 2017).

Clinicians across all professional groups feel this tension acutely. The phrase "caring for the chart more than the patient" has become a cliché because it captures a pervasive experience (Maitra et al., 2021). The EHR, rather than being a silent partner in care, is often an intrusive presence, demanding attention, interrupting workflows with alerts, and extending work into personal time through remote access

(Sinsky et al., 2016; Arndt et al., 2017). This has been directly linked to clinician burnout and job dissatisfaction (Moy et al., 2021; Rosenbaum, 2015). The very technology designed to improve care is, in many ways, undermining the well-being of the workforce that delivers it (Wachter, 2017).

This tension is also a source of interprofessional friction. When physicians resist entering their own orders, they shift the burden to nurses (Iedema et al., 2018). When EHRs are designed primarily around billing codes, they fail to capture the functional data that physiotherapists need, rendering their work less visible (Keel et al., 2023). When administrators mandate new documentation requirements to meet quality metrics, they add to the workload of medical secretaries and nurses without necessarily improving patient care (Cordelier et al., 2021). The division of labor in the digital era is not a static blueprint but a dynamic and often contested terrain, shaped by ongoing negotiations over who does what, whose knowledge counts, and how the story of the patient is told (Conrad, 1985).

The sociological perspective reveals that these are not merely technical problems to be solved

with better software or more training. They are deeply social problems, rooted in professional identities, power structures, and the often-unexamined values embedded in our technologies (Barley, 2020; Orlikowski & Scott, 2023). The CPOE system that assumed a physician-as-orderer was not a neutral tool; it was an argument about how work should be organized (Adaba & Kebebew, 2017). The EHR that privileges diagnosis codes over functional status is not just a database; it is a statement about what matters in health and healthcare (Blackwell et al., 2017). The ongoing struggles over documentation are, at their core, struggles over professional jurisdiction, autonomy, and the very definition of good care (Abbott, 2014; Freidson & Lorber, 2017).

Conclusion

This socio-historical review has traced the co-evolution of medical records and the healthcare division of labor, demonstrating that the journey from paper to pixel has been anything but a simple story of progress. Each technological shift has reconfigured professional roles, redrawn boundaries, and created new tensions alongside new efficiencies. The paper era, for all its flaws, embedded nurses as expert administrators and gave physiotherapists space for narrative, functional documentation (Blackwell et al., 2017; Conrad, 1985). The early digital era began the process of standardization, sowing the seeds of future documentation burden (Timmermans & Berg, 2010). The HITECH Act and the mandate for meaningful use radically accelerated change, forcing new tasks onto physicians, disrupting the nurse's traditional role, and creating the new profession of health informatics (Blumenthal & Tavenner, 2010; Sockolow et al., 2021). The contemporary landscape is one of role proliferation, "taskification," and an enduring struggle for professional visibility within systems that often prioritize administrative and billing needs over clinical nuance (Cordelier et al., 2021; Keel et al., 2023).

The lessons of this history are crucial for the future. First, technology is never neutral (Barley, 2020; Orlikowski & Scott, 2023). The design of EHRs encodes assumptions about work, hierarchy, and value that have real consequences for the people who use them and the patients they care for (Adaba & Kebebew, 2017). Second, the implementation of new technology is always a social process (Jacquemard et al., 2020). It requires renegotiation of roles, adaptation, and often, improvisation to ensure safety and effectiveness (Iedema et al., 2018). Ignoring this social dimension guarantees disruption and resistance (Abraham et al., 2016). Third, the voice of front-line clinicians—nurses, physiotherapists, and even medical secretaries—is essential in the design and optimization of the digital tools that structure their work (Sockolow et al., 2021). As the Sutter Health example demonstrates, when these professionals are empowered as co-designers, the results can be transformative (Schulte & Fry, 2019).

Future research should continue to employ qualitative, ethnographic, and sociological methods to understand the lived experience of work in the digital hospital (Iedema et al., 2018). We need more studies that follow clinicians as they navigate the complex socio-technical systems of the EHR, that document the invisible work of medical secretaries and informaticians, and that give voice to the frustrations and ingenuity of physiotherapists struggling to make their profession count (Cordelier et al., 2021; Keel et al., 2023). We also need critical scholarship that examines the power dynamics embedded in health information systems and that questions whose interests are truly served by the relentless expansion of documentation requirements (Blackwell et al., 2017). Ultimately, the goal is not to simply make the EHR more efficient, but to reimagine it as a tool that genuinely supports the human relationships at the heart of healing, rather than standing as a barrier between the clinician and the patient (Maitra et al., 2021; Wachter, 2017). The history of the medical record teaches us that this is not just a technical challenge, but a deeply human one.

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