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Between Professionalism and Pragmatism: Physicians' Information Technology Use in Healthcare Practice

Completed Research Paper

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Abstract

Health information technologies (HIT) are transforming the medical profession by shifting how physicians perform their roles and interact with patients. Drawing on interviews with physicians across specialties and career stages, this study investigates how professional role conceptions influence HIT use in clinical practice. We find that physicians are moving from authoritative decision-makers to collaborative advisors, navigating rising patient expectations and increasingly transparent knowledge environments. In response, physicians adopt varied HIT usage strategies to manage perceived professionalism and authority. We introduce the concept of differential HIT usage to describe how physicians selectively adapt HIT use based on context and technology. Furthermore, we identify how visible technology use can either support or undermine the performance of medical competence. The study contributes to literature on HIT adoption and professional role change by highlighting how digital tools are integrated in ways that align with role expectations and symbolic expressions of expertise.

Keywords: Health information technology, Professional role, Use behavior, IT adoption

Introduction

*“Knowledge is always and everywhere available. So, you can look up anything, anywhere, anytime. In the past it was really limited, so medicine was quite specific knowledge.”
(I13, specialist physician, internal medicine)*

As the quote above points out, access to knowledge has never been as easy as it is today. The advent of information technologies (IT) has resulted in an unprecedented dissemination of information, thus rendering access to knowledge increasingly straightforward and readily accessible. Generative artificial intelligence (AI) has the potential to amplify this process, thereby further democratizing access to knowledge and facilitating analysis of complex challenges (Alavi et al., 2024). Within this scope, health information technologies (HIT) are continuously transforming the healthcare sector, permeating all areas of medical care, from electronic health records (Evans, 2016) to complex decision support systems (Bardhan et al., 2025; Liang & Xue, 2022). Such HIT come with different effects for both patients and physicians.

On the one hand, HIT, including mobile health (mHealth) tools and online communities, enhance patient empowerment, self-management, and collaborative care (Bao & Bardhan, 2022; Bardhan et al., 2025). For instance, the increasing availability of health information on the internet and through the use of generative AI is leading to patients becoming more informed and self-determined (Tan & Goonawardene, 2017). Thereby, patients begin to take a more active part within the decision-making process and being more engaged, challenging current physician-patient relationships and bringing up the need to revisit communication strategies (Tan & Goonawardene, 2017).

On the other hand, physicians are offered broader access to comprehensive patient data and evidence-based decision support systems with the potential to improve the quality and efficiency of medical care (Chen et al., 2023). Diagnostic AI systems are implemented into clinical processes, impacting diagnostic decision-making of physicians (Jussupow et al., 2022b). Further, telehealth is transforming healthcare by reducing the need for in-person visits, lowering costs, improving compliance, and streamlining treatment processes but questioning the role of physicians (Haleem et al., 2021).

These changes present physicians with new challenges. The role of the physician is changing from the main decision-maker to a partner and advisor who makes decisions together with the patient (i.e., shared decision-making) (Elwyn et al., 2023; Smailhodzic, 2018). The ability to communicate complex medical information in an understandable way and respond to individual needs is becoming increasingly important in the context of patient-centered care (Brennan et al., 2023). In addition, clinical decision support systems help physicians with complex decision-making tasks, but they are also beginning to make physicians feel like they are losing face in front of patients (Liang & Xue, 2022). Such threats to professional recognition and professional capabilities have been found to potentially even lead to resistance to the use of decision support systems (Jussupow et al., 2022a).

Hence, while the implementation of HIT is important to tackle increasing healthcare demands in light of workforce shortage and cost efficiency (Sinha, 2024), it remains open how this challenges existing physicians roles and resulting HIT use behavior (Graefen, 2023). Previous literature indicates potential feelings of embarrassment when using decision support systems (Liang & Xue, 2022), but research on the physicians' role influencing the physicians' HIT use behavior remains limited and oftentimes relates to one specific HIT like electronic health record. Therefore, we ask the following research question:

RQ: How does the professional roles of physicians affect use of health information technologies?

This study adopts a qualitative interpretive approach to explore how HITs are perceived by physicians and how these perceptions influence the role of physicians and consequently also the physician-patient relationship. The paper begins with a review of the relevant literature on the professional role of physicians, the development of HIT and its role in the physician-patient relationship. It then outlines the research methodology, presents key findings, and concludes with theoretical and practical contributions and a discussion of limitations and suggestions for future research.

Theoretical Background

In the following, we outline the theory of professions focusing on the evolving role of physicians with the increasing influence of IT. We then discuss the evolution of IT within the healthcare sector, with particular emphasis on their impact on the role of physicians and the physician-patient relationship.

The System of Professions and Physicians' Professional Role

Abbott's (1988) theory of professions centers on the concept of jurisdiction. Professions are understood as occupational groups that claim control over certain domains of knowledge and practice (Abbott, 1988; Abbott & Meerabeau, 1998). Abbott argues that professional authority is not only based on expertise itself, but also on the ability to publicly perform and defend jurisdiction over tasks. The professional role of the physician has traditionally been rooted in notions of expertise, authority and responsibility, often conceptualized as a central figure in the healthcare system who diagnoses, treats and makes critical decisions on behalf of the patient. This role is deeply embedded in medical training, ethical codes, and broader institutional expectations, positioning physicians as gatekeepers of medical knowledge and custodians of patient well-being (Freidson, 1988; Smailhodzic, 2018).

However, the role of any profession is not static and evolves as it relates to the specific tasks and problems that the profession claims the right to solve (Abbott, 1988). With the ever-increasing integration of HIT, information systems scholars have shown how the use of technology in healthcare can both enable and constrain professional autonomy, changing traditional working practices (Smailhodzic, 2018) and decision-making processes (Elwyn et al., 2023; Jussupow et al., 2021). For instance, the implementation of clinical decision support systems and electronic health records changes how physicians access information and coordinate with other healthcare actors, leading to a change in knowledge, skills and tasks (Davidson & Chismar, 2007). Such systems can also trigger resistance when users perceive threats to their autonomy or professional identity, especially as shifting power dynamics and evolving interpretations of the technology alter the focus and intensity of that resistance over time (Lapointe & Rivard, 2005).

Recent advances in AI further challenge the physician's role. AI systems increasingly perform diagnostic tasks, suggest treatment plans, and personalize care pathways, raising questions about what is distinctly human in clinical expertise (Aamir et al., 2024). As Baird and Maruping (2021) argue, the rise of intelligent systems requires professionals to delegate cognitive labor to machines, redefining the boundaries of professional judgment and human oversight. This shift introduces new configurations of human-AI collaboration, in which physicians act as orchestrators, interpreters, or mediators of algorithmic output rather than sole decision-makers (Glikson & Woolley, 2020; Nasarian et al., 2024; Zhang et al., 2023).

From a socio-technical perspective, the physician's role is increasingly challenged by HIT. A nuanced perspective is important to comprehensively grasp how physicians adapt to, resist, or reappropriate to changes. This necessitates an analysis that extends a mere role description, encompassing the physicians' position in the healthcare practice, their respective expertise and power, and the relationship with patients.

Health Information Technology

IT has long played a central role in transforming healthcare. Early applications focused on administrative efficiency and clinical documentation, helping to digitize patient records and streamline workflows (Berg, 1999; Davidson & Chismar, 2007). Over time, these systems evolved into more complex HITs that not only store and manage medical data but also actively supported medical personnel in diagnosis and treatment planning (Agarwal et al., 2010; Agarwal et al., 2019). Today, the integration of medical sensors, wearable health trackers, telemedicine, mHealth applications, large language models, and digital care twins are advancing medical decision making and pushing the boundaries of what HIT can do (Nasarian et al., 2024).

A large body of IS and health informatics research has focused on determinants of adoption and forms of resistance (Davidson et al., 2018). For example, studies show that resistance can arise from fear of losing face and professional status (Davidson et al., 2018; Jussupow et al., 2022a; Liang & Xue, 2022). This stream highlights the conditions under which physicians accept or resist new technology, but it primarily emphasizes initial implementation phases. More recent work has begun to explore how physicians engage with HIT beyond the moment of adoption (Abouzahra et al., 2022). They found that physicians' continued use of clinical decision support systems was influenced less by initial adoption factors and more by the

healthcare context, as threats to professional identity and patient influence significantly affect satisfaction and sustained system use in the first six months (Abouzahra et al., 2022). While this research demonstrates that HIT integration is ongoing and context-sensitive, the further dynamics of how physicians actively manage their technology use in patient encounters are still insufficiently theorized.

Another core aspect of healthcare is the physician-patient relationship and has been studied extensively across disciplines such as medicine, psychology, health informatics, and information systems. Traditionally conceptualized as a dyadic system between the physician and the patient, this relationship is characterized by trust, empathy, mutual respect, continuity, and increasingly, shared decision-making (Vick & Scott, 1998; Xie et al., 2006). It plays a critical role in shaping treatment adherence (Orom et al., 2018), health condition (Riedl & Schüßler, 2017), and patient satisfaction (Drossman et al., 2022). With the continuous integration of information systems into medical practice, a third player has emerged in the previously dyadic physician–patient relationship: HIT. While historically centered on the physician as the knowledge authority, this relationship has become more dynamic with the expansion of information access and digital technologies (Smailhodzic, 2018). Ever since, HIT influences the role of physicians and patients and mediates the physician-patient relationship.

Technologies enable patients to become more active participants in their healthcare journeys – accessing test results, scheduling appointments, and even engaging in remote consultations (Agarwal et al., 2010; Angst & Agarwal, 2009; Elwyn et al., 2023; Tan & Goonawardene, 2017). Consequently, communication between physicians and patients shifted from a traditionally paternalistic model to one that increasingly values shared decision-making and interaction with HIT (Sandman & Munthe, 2010; Tan & Goonawardene, 2017). HITs thus serve not only as technical tools, but as socio-technical artifacts that mediate trust, authority, and the distribution of knowledge in clinical contexts.

In addition, HITs can affect the professional role of physicians and their perceived legitimacy in the eyes of both patients and other professionals. Abbott (1988) highlights that professions maintain jurisdiction over their work through abstract knowledge and exclusive rights to apply it. As patients gain greater access to knowledge through HIT that offers competing forms of expertise, physicians must continually renegotiate their jurisdictions, role boundaries and sources of authority. This creates both tensions and opportunities: physicians can evolve toward more patient-centered, collaborative, and technologically augmented roles, but must also grapple with ambiguity, technological dependency, and shifting expectations (Agarwal et al., 2010; Brennan et al., 2023). Smailhodzic (2018) emphasizes that future physicians will need to develop new competencies to navigate these changing dynamics, to engage appropriately with both patients and digital systems.

Thus, the physician-patient relationship is no longer a closed dyad but an open, technology-mediated triad, shaped by HIT like social media platforms (Smailhodzic, 2018) and advanced decision-making agents (Jussupow et al., 2021). This form of mediation impacts clinical decision-making, redefine professional roles, and necessitate a rethinking of relational models in healthcare. Hence, understanding how this triadic relationship affects the role of physicians and how physicians deal with HIT in clinical practice is central to theorizing the broader role of HIT in reshaping health practice.

Methodology

Understanding how individuals relate to and interpret their professional role requires a research approach that is sensitive to subjectivity and context. To examine how physicians' professional role perception influences HIT usage behavior, we adopted an interpretive qualitative research design (Klein & Myers, 1999; Walsham, 1995). Interpretive research is grounded in the belief that knowledge is socially constructed through interaction and meaning-making, making it especially appropriate for exploring work-related phenomena in dynamic socio-technical environments like healthcare. This approach aligns with our goal of capturing physicians' experiences with HIT and how these technologies intersect with role expectations, professional values, and organizational norms. In line with Walsham (1995), we view the researchers not as detached observers but as co-constructors of meaning, shaped through dialogue with participants. Our study further draws on Klein and Myers' (1999) principles of interpretive field research, including the hermeneutic circle, contextualization, and multiple interpretations.

Data Collection

To gain diverse perspectives on the effects of professional roles of physicians on use of HITs, we conducted semi-structured interviews with 20 physicians in Germany. Participants were selected to reflect variation in specialty, career stage, and work setting, ensuring a rich understanding of how professional roles are negotiated. The sample was based on convenience and access, as the research team had established professional networks in the German healthcare system. While this facilitated access to physicians across different specialties and practice settings (including both hospital-based and private practice), it also means that our findings are contextually situated. The German healthcare system is characterized by strong professional hierarchies and specific regulatory structures, which shape physicians' perspectives on HIT.

Interviews lasted an average of 61 minutes and were conducted either in person or by phone, depending on participant availability. The interviews were guided by a flexible interview protocol that allowed participants to elaborate on their experiences with HIT (e.g., Which HIT do they use in healthcare practice?), perceptions of their respective professional role as a physician (e.g., What makes a good physician? What are attributes they ascribe to themselves as a physician?), and coping mechanisms for technological change (e.g., How do they use HIT systems during healthcare practice?). All interviews were recorded and transcribed verbatim. Table 1 provides an overview of participant demographics.

This sampling and open-ended interview design enabled us to uncover both shared norms and subtle divergences in how physicians interpret and respond to HIT within their professional context.

ID	Career Stage	Specialty	Role Description
I1	Specialist physician	Pediatric and Adolescent Medicine & Cardiology	Works half-time in research and half-time in the hospital; focus on digitalization in pediatric medicine.
I2	Resident physician	Internal Medicine – Hemato-Oncology	Resident physician on an oncology ward in a German university hospital.
I3	Specialist physician	Internal Medicine – Intensive Care	Works in intensive care at a university hospital.
I4	Resident physician	Cardiology	Works in cardiology and emergency department as part of rotations.
I5	Resident physician	Gynecology and Obstetrics	Rotates daily through various departments including operating, delivery, breast consultation, and chemotherapy.
I6	Specialist physician	ENT (Ear, Nose, Throat)	Responsible for conservative and surgical care, medical technology, and IT.
I7	Senior physician	Oncology	Oncologist with 30 years of clinical and research experience; involved in German society for hematology and oncology.
I8	Senior physician	Neurology, Geriatric Psychiatry	Works in psychiatric day clinic and ambulance for patients 65+; manages diagnostics, therapy, and medication.
I9	Senior physician	Surgery	Specialist in minimally invasive surgery, abdominal surgery, and surgical oncology; I9 researches within the field of mHealth and AI applications in surgical processes.
I10	Chief physician	Psychiatry and Psychotherapy	Head of central admission and outpatient clinic; handles patient care, administration, staff management, and organizational tasks.
I11	Resident physician	Pediatrics and Neonatology	Works in neonatal intensive care; shift-based system; involved in emergency, infection, lung, and monitoring wards for infants.

I12	Resident physician	Internal Medicine	Works in cardiology and emergency department as part of rotations.
I13	Specialist physician	Internal Medicine – General Practice	Completed specialist training in internal medicine; currently works as a GP in Switzerland.
I14	Senior physician	Anesthesia	Specialist physician in anesthesia since 2021 and qualified in emergency medicine and intensive care.
I15	Resident physician	Surgery	Currently works in the hospital's abdominal surgery department, providing preoperative, intraoperative and postoperative care.
I16	Resident physician	Internal Medicine – General Practice	In specialist training toward general practitioner, works in a general practitioner practice.
I17	Resident physician	Gynecology and Obstetrics	Rotates daily through various departments including operating, delivery, breast consultation, and chemotherapy.
I18	Resident physician	Gynecology and Obstetrics	Rotates daily through various departments including operating, delivery, breast consultation, and chemotherapy.
I19	Resident physician	Internal Medicine – Hemato-Oncology	Currently doing the specialist training at a large university hospital.
I20	Professor, former senior physician	Anesthesia, Intensive Care	Has additional qualifications in emergency medicine and critical care medicine and is now full-time professor in the medical department.
Table 1. Interview Participant Overview			

Data Analysis

Our analysis was guided by a grounded theory approach (Strauss & Corbin, 1998), which emphasizes the emergence of theory from data through systematic coding and constant comparison. The transcribed interview data were imported into MaxQDA 2022 for structured analysis.

We began with open coding, identifying initial units of meaning in the physicians' professional role narratives and HIT usage behavior. These first-order codes were derived inductively, based on what participants emphasized as relevant to their experience with HIT and their professional role. In line with Strauss & Corbin, we then engaged in axial coding, grouping related codes into categories that reflected underlying concepts such as professional expectations, patient interaction strategies, and HIT usage. Finally, through selective coding, we integrated these categories around central themes that informed our theoretical contributions. Figure 1 provides an overview of the coding scheme.

Throughout the analysis, we followed the hermeneutic principle of iterative interpretation, moving back and forth between the data and emerging concepts (Klein & Myers, 1999). Multiple rounds of coding and author team discussions enabled reflexivity and helped ensure that the analysis remained grounded in participants' accounts. By applying this layered interpretive process, we uncovered four interconnected themes that illuminate how physicians strategically integrate, negotiate, and potentially even resist HITs in the context of physicians' professional roles.

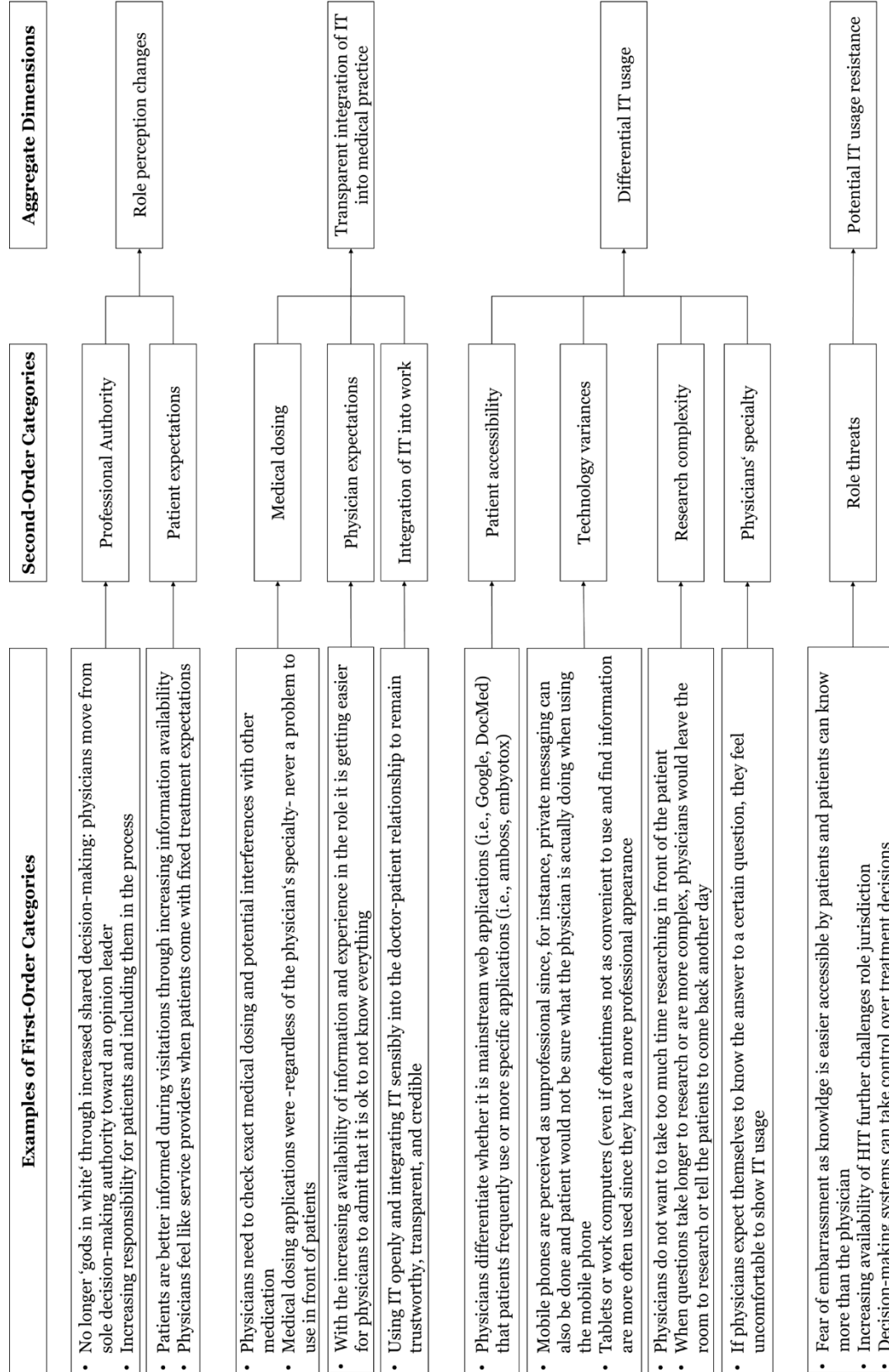


Figure 1. Coding Scheme

Findings

Our findings illustrate how physicians' engagement with HIT is deeply interwoven with their perceptions of professional roles. We structure our results into four key themes: First, we explore how physicians' role perceptions change over time, moving from early-career omniscience ideals to more open and pragmatic self-conceptions. Second, we show how transparent integration of IT into medical practice can foster trust and collaboration with patients. Third, we introduce the concept of differential HIT usage, highlighting how physicians strategically adapt technology use based on situational, technological, and professional considerations. Finally, we examine how the perceived threat of role erosion shapes attitudes toward IT, not through outright resistance, but through subtle forms of boundary maintenance.

Role Perception Changes

The integration of HIT into medical practice has not only reshaped clinical workflows but also significantly altered physicians' professional roles. Two key dynamics emerge from our data: evolving professional authority and patient expectations.

Professional Authority: From 'Gods in White' to Partners in Decision-Making

Traditionally regarded as ultimate authorities in healthcare, physicians increasingly describe their role as shifting toward one of partnership and shared decision-making. Several interviewees noted that they no longer see themselves as the sole decision-makers but rather as advisors providing options for patients to consider, as one physician put it:

"I'm no longer the decision-maker, but I'm more like this, I give an opinion and in the end the patient or you make the decision together. Depending on how you see your role as a physician, there are also differences between how you see your role as a physician. Now I see myself more as I give my opinion. I just give here these are the possibilities, but I don't have an opinion either, because it's not my body." (I5)

This collaborative model stands in contrast to historical hierarchies, as one participant reflected: "[A physician] is no longer this god in white" (I20). While physicians maintain responsibility for providing the best possible care, they increasingly emphasize the shared nature of this responsibility with patients: "I wouldn't say hand over responsibility, I don't do that. But I do involve [the patient] in the responsibility. [...] It is already a sharing of responsibility. I would call it that." (I5)

Moreover, patients now often critically evaluate physicians' recommendations rather than accepting them unquestioningly: "It was kind of like, a physician was kind of like an authority, they say this and that is correct. And now [...] is it really true what the physician says? Couldn't it perhaps still be done differently?" (I20)

Thus, while the increasing patient-centered care models lead to the continuous evolvement of professional autonomy, they simultaneously challenge physicians' traditional role as being the sole decision-maker. This is an important part of the jurisdiction claims that physicians make since it moves away from the rather exclusive decision-making right in the past.

Such changes illustrate once more a transformation in the professional role from authoritative expert to collaborative partner. This transition entails a partial erosion of the physician's exclusive jurisdiction over treatment decisions, opening the space for other actors, e.g., patients, algorithms, or even institutional protocols, to exert influence. While physicians continue to anchor their work in medical expertise, their jurisdiction is increasingly negotiated at the boundaries of patient autonomy and systemic constraints.

Patient Expectations: Information Abundance and Service Demands

A second point is that patients' increasing ability to access medical information profoundly alters their expectations toward physicians. Patients can learn about their symptoms and possible diagnoses in advance or create treatment plans based on their medical history. Physicians observe that patients are often well-informed or sometimes even over- or misinformed before consultations. This dynamic creates new communication challenges:

“So, this over-informed patient or sometimes unfortunately also misinformed patient is sometimes very difficult. [...] We say specifically: try not to google it until tomorrow morning.” (I11)

Physicians frequently encounter patients with fixed ideas about diagnosis or treatment, derived from online research or patient forums. One physician described the difficulty of steering patients away from inappropriate, patient-preferred therapies:

“Many patients [...] come to us with the aim of having an operation, for example. But it’s often the case that you have to say, okay, the findings are not so pronounced that you have to operate straight away. [...] When a patient has decided on a desired therapy, then to say, no, that’s not the right thing, is much more difficult.” (I6)

Yet, this shift comes with further frictions. Physicians feel that the erosion of their authoritative status sometimes places them closer to a service provider role, as one resident observed: *“Unfortunately, we’ve ended up in a bit of a service provider role. [...] I notice that there is a growing lack of respect for hospital staff.” (I11)*

Changing patient expectations are thus reshaping not only the content of physician-patient interactions, but also the communication strategies physicians must employ to maintain their credibility. As patients enter consultations armed with online information and preconceived treatment preferences, physicians must increasingly defend and negotiate their expertise in encounters that were once marked by deference. A profession’s jurisdiction is defined not only by its technical knowledge, but also by its cultural legitimacy, the public’s willingness to accept professional authority. The emergence of the ‘informed patient’ undermines this legitimacy, forcing physicians to adopt a more customer-oriented or even service provider stance. This shift does not eliminate their role as medical experts, but it repositions them in a more contested space where expertise must be justified, explained and, at times, defended against alternative (and sometimes inaccurate) sources of knowledge. Consequently, physicians need to engage in strategic communication to maintain credibility, adapting their professional role from authoritative diagnosticians to persuasive interpreters of medical knowledge.

Transparent Integration of HIT into Medical Practice

With the growing influence of HIT, physicians have begun to integrate technologies openly into their clinical routines. Three themes stand out in this context: the handling of medical dosing, the development of physician expectations regarding their own knowledge, and the integration of IT into physician-patient interactions.

Medical Dosing: A Legitimate Reason to Use HIT Openly

Across specialties, physicians consistently reported that looking up information related to medical dosing is not only accepted but often expected by themselves and their patients. Physicians stressed that checking medication dosages, interactions, and specific details, particularly in rare or critical cases, is considered responsible practice rather than a sign of incompetence. One physician described: *“I look up specialist information on medicines very often” (I1).*

Similarly, when faced with unusual medication trade names, collaborative lookups with patients were described as relaxed and natural: *“Then they come with a medication, which may be a special trade name, then we look something up together, so it’s quite relaxed and natural, I would say” (I1).*

Importantly, even highly experienced physicians normalize this practice: *“He’s such a thoroughbred internist. I think there are few physicians who know more than he does. And he also looks things up. As I said, when it comes to medication and dosage, he looks things up a lot” (I4).*

In specialized contexts such as pregnancy or pediatrics, reliance on external sources was emphasized even more strongly: *“Even a senior doctor who has been at the clinic for 40 years has to check whether [a medication] is placental or not” (I4) / “Where I do this regularly, for example, and where I actually find that it gives the patient a sense of security and reassures the patient, are, for example, doses of medication for children.” (I6)*

Checking dosages openly, especially for rare prescriptions or weight-adapted dosing, was seen as reinforcing patient trust:

“Or if I prescribe a rare medication, I say they need a rare medication, but I have to look up the dosage. That is actually accepted. And I think it’s even perceived positively when patients can say, ‘Oh, he checked again.’” (I6)

Surgeons, who often prescribe medication outside their main expertise, also considered it entirely appropriate to look up unknown drugs openly: *“I think that’s perfectly fine if you don’t know a medication and you just want to know what it is.” (I9)*

Overall, across different levels of seniority, medical dosing was viewed as a legitimate domain where HIT use in front of patients was normalized: *“If it’s really just a medication where I simply don’t know the trade name, for example, I do it openly in front of the patient.” (I20)*

While physicians expressed reservations about using certain digital systems in front of patients (will be discussed in the following sections), consulting information on medications or dosages was consistently framed as unproblematic and sometimes even expected. This openness stems, in part, from the complexity and variability of pharmacological decisions, which depend heavily on patient-specific factors such as age, weight, comorbidities, or pregnancy. At the same time, physicians did not view pharmaceutical expertise as central to their professional role. Although they retain formal jurisdiction over prescribing decisions, which is a core element of their professional role in Abbott’s (1988) terms, this authority is exercised with the understanding that accurate medication choices often require referencing external sources. In this sense, prescribing is seen less as a demonstration of memorized knowledge and more as a careful application of judgment, where looking up information is part of responsible, modern medical practice. Thus, the act of checking dosages or drug names is not interpreted as a threat to their professional legitimacy, but rather as a reinforcement of their commitment to accuracy and patient safety.

Physicians’ Expectations Toward the Own Role: From Omniscience to Openness

While open IT use for medical dosing is normalized, the broader readiness to admit gaps in knowledge evolves with career progression. Early-career physicians described intense internal pressure to know everything, which initially made them reluctant to consult IT resources openly. As one physician explained: *“Especially at the beginning, it’s perhaps still a bit like that, because you’re still testing yourself and actually have the expectation that you have to be able to do it.” (I3)*

This internalized pressure often led to feelings of inadequacy: *“I thought, I’m stupid. I don’t know” (I4) / “You think to yourself, okay, I’m just too stupid now, that I just don’t know everything” (I12).* Others reflected on the fear that patients might perceive them as incompetent: *“Probably because I thought, or perhaps had the expectation, that I had to be omniscient and therefore couldn’t admit this to the patient.” (I5)*

Such perfectionist self-expectations gradually give way to a more realistic self-image with growing experience. Physicians learn to differentiate between acceptable knowledge gaps, such as rare drug information, and critical knowledge expected from a specialist:

“At some point you just say that it’s okay if I don’t know, I have so many resources for myself that I’m perfectly okay not knowing something. I think that’s the kind of relaxation that comes at some point when you’ve actually done enough, when you’re really, really good at the subject.” (I3)

Thus, over time, physicians reconcile the professional image of competence with the reality of medical complexity and information abundance, enabling more open engagement with IT tools. This evolving mindset reflects a shift in the interpretation of professional competence – not as omniscience, but as the ability to navigate uncertainty responsibly. It illustrates how the professional role is not only defined by jurisdiction over knowledge domains, but also by the way professionals perform and communicate their expertise. Over time, physicians come to value transparency about the limits of knowledge. This is not seen as a threat to their legitimacy, but as a sign of mature, reflective practice in a complex, information-rich environment.

Integration of HIT into Work Practices: Normalizing HIT Use in Patient Encounters

Beyond simply looking up information, some physicians have actively integrated IT use into their interaction with patients, using it as a tool to foster transparency and trust. Rather than hiding the act of consulting digital resources, they frame it as part of a modern, collaborative approach to care:

“I look it up briefly and then I’m back in conversation with them. So, then they’re sitting at the table and I look it up briefly and then I also show it openly, as a rule, and discuss it with them.”
(I13)

This integration is facilitated by a broader shift in societal expectations, especially among younger, digitally native patient groups:

“I never saw myself like a god in white, but that was a bit like that in the past. But I’m actually glad it’s not like that anymore. Because that doesn’t fit in with the smartphone generation at all.”
(I13)

Thus, IT is not merely tolerated but can enhance physician-patient communication when its use is framed as part of a transparent, professional practice. This reframing of HIT use reflects a broader redefinition of professional conduct – from authoritative knowledge delivery to participatory knowledge navigation. By openly integrating HIT into patient encounters, physicians align their practice with a more dialogical and transparent model of care, particularly resonant with younger, digitally literate patients. Rather than undermining professional authority, this approach repositions expertise as relational and responsive, strengthening trust through openness rather than through the concealment of uncertainty.

Differential HIT Usage: Strategic Choices Depending on Context

While certain forms of HIT use, such as checking medication dosages, are widely normalized and even expected, physicians demonstrate a nuanced and context-sensitive approach to their visible use of technology. This differential HIT usage reflects a broader negotiation between the demands of clinical practice, patient expectations, and the maintenance of professional legitimacy. We found four main ways in which physicians differ when considering whether and how to use HIT: patient accessibility, technology variances, research complexity, and physician specialty.

Patient Accessibility

Physicians are acutely aware of the symbolic implications of using publicly accessible IT, such as Google, in front of patients. While many rely on specialized web tools or clinical platforms to support decision-making, they draw a clear line between professional and lay knowledge sources. Using search engines in a way that mirrors layperson behavior, such as entering full symptom-based queries, is often avoided to preserve epistemic authority and avoid undermining their professional status:

“I wouldn’t google anything directly. I wouldn’t type in, for example, ‘nausea or chemo, which medication?’ I wouldn’t enter that there. I know certain websites that I use, such as the interaction checker. I would google it directly, then go into it and enter my problem. But using Google directly as a question would be a bit strange. I would too, but I don’t actually do that.” (I5)

Here, the avoidance of Google as a diagnostic starting point reflects a strategic distancing from tools associated with patient self-diagnosis. By visibly favoring platforms that signal professional legitimacy, physicians assert their jurisdiction over clinical knowledge and reinforce the boundary between expert and lay roles. This behavior underscores the importance of not just what information is accessed, but how and through which means the act of looking it up is socially performed.

Technology Variances

A second dimension of strategic differentiation concerns the type of device used during medical encounters. Even when the information accessed is the same, the choice between a PC and a smartphone carries different connotations. Several physicians reported avoiding smartphone use in front of patients, especially older ones, due to its association with leisure or casual use. Instead, they opt for stationary PCs, even at the cost of efficiency, to project seriousness and maintain the decorum expected in clinical settings:

“I have [the information] on my cell phone [...] But in front of the patient, I actually open these Google documents on my PC. It takes longer, but I think it’s somehow more appropriate.” (I5)

“There’s another difference between the computer, which for many people is also a kind of work tool, and the cell phone, which for the boomer generation is more of a fun mobile device.” (I4)

This device-based signaling highlights how technological artifacts themselves become part of the staging of professionalism. PCs are embedded in the spatial and functional fabric of clinical practice, while smartphones remain ambiguous, blurring the boundary between personal convenience and professional necessity. Thus, physicians’ preference for certain devices is not merely about usability, it is a symbolic act that reaffirms their role as focused, disciplined experts aligned with institutional norms.

Research Complexity

Physicians also adapt their HIT use based on the complexity of the clinical question. Quick, low-stakes lookups are often performed in front of patients, while more involved research is deferred or moved outside the patient’s view, especially when diagnostic uncertainty is involved, *“because you need a certain amount of peace and quiet”* (I1). Physicians therefore mention that it depends on the complexity and therefore the time they would need to come to a conclusion:

“Depending on how complex the question is, you can either google it quickly on the side while the question comes up, or you can be honest and say, yes, I’ll have to look it up, I’ll come back to you later with the answer”. (I4)

“I would rather say that I want to read up in peace and quiet [...] I don’t want to have someone sitting in front of me who puts me under pressure to come to a conclusion quickly.” (I20)

“I wouldn’t actually do that [i.e., use Symptoma to research potential diagnoses for the symptoms described by the patient] in front of the patient [...] the patient immediately becomes incredibly worried and jumps on it. I’d like to know in advance, let’s say, what kind of conversation I need to be prepared for. that’s why I wouldn’t use it in front of patients.” (I6)

Such practices illustrate how physicians manage the performance of certainty, a central component of their professional role. While expertise involves accessing the right information, it also involves knowing how and when to reveal the limits of one’s knowledge. By orchestrating information retrieval away from the patient, when necessary, physicians aim to protect their credibility and guide patient expectations – consistent with their role as professionals.

Physicians’ Specialty

Finally, physicians’ willingness to use HIT and look things up in front of patients is often contingent on whether the topic falls within or outside their specialty. When questions concern areas peripheral to their domain, physicians feel more comfortable admitting knowledge gaps or deferring to resources:

“I often say I’ll research it or I’ll communicate with my colleagues from the other department, but then I often emphasize very clearly that it’s unrelated to the subject in order to maintain my credibility.” (I4)

“I wouldn’t google more fundamental things that I actually assume I should know, that relate to my specialty, in front of them. Because then, in my opinion, it calls your expertise into question a little. It depends on the type of question, whether I think I should know it or not.” (I17)

Beyond status, physicians experience anxiety about potential embarrassment when patients have access to information that surpasses or questions their own expertise:

“So, I think, for example, if I’m in a field that’s relatively new to me, then I’m not embarrassed to look something up. [...] It still depends a bit on the context whether it’s really an embarrassing question that you can’t answer or whether it’s something that’s okay if you don’t know at that moment.” (I3)

These strategies reflect a careful management of jurisdictional boundaries, i.e., defending core expertise while openly acknowledging the need for external input in peripheral specialties. Professional status is

maintained not by knowing everything, but by demonstrating control over one's legitimate territory of knowledge. In this light, selective HIT use behavior becomes a mechanism for role protection, enabling physicians to manage the balance between embarrassment and authority.

In sum, physicians engage in strategic HIT usage to navigate the dual demands of medical precision and professional image. These practices are deeply intertwined with the expectations attached to their professional role: not only as expert decision-makers, but as actors who must continuously perform, defend, and adapt the boundaries of their expertise in response to changing technological and social conditions.

Potential HIT Usage Resistance

While physicians in this study generally expressed openness toward digital tools and showed no signs of outright resistance to any kind of IT, concerns about the broader consequences of technological democratization were evident, particularly in relation to professional status and role jurisdiction. The availability of medical knowledge to patients and other non-physician actors through AI and decision support systems has prompted reflection on what it means to maintain authority in an increasingly transparent informational landscape.

“The physicians, they just don’t want to lose their status as semi-gods in white. And that’s why they’re afraid that a decision support system will democratize the whole thing. And that’s why they resist so their knowledge, their secret knowledge, so to speak, being leaked and patients, supported by nurses perhaps, with such a system and a high level of empathy, taking control of treatment themselves.” (I7)

This quote illustrates not actual resistance behavior, but rather an imagined threat tied to shifting power dynamics: the fear that advanced systems could replace or at least undermine the traditional figure of the physician by enabling patients and allied health professionals to act more autonomously. Physicians are not rejecting technology itself; rather, they express concerns about maintaining the distinctiveness of medical expertise in a landscape where access to information is no longer confined to professionals through the continuous expansion of technological possibilities.

Despite such anxieties, no physician, regardless of experience level, exhibited general opposition to using HIT. On the contrary, many emphasized their enthusiasm for integrating technology into daily practice. The tension, then, lies not in technological resistance, but in the careful boundary work required to preserve professional authority. Physicians remain committed to their role as trusted experts and decision-makers, and any hesitation around certain forms of IT, should be understood as part of a strategic negotiation of their professional role, not a rejection of innovation.

Discussion

Our findings reveal that the professional role of physicians is undergoing significant transformation in the face of increasing digitalization and the growing availability of HIT. Physicians are moving away from the traditional ‘god in white’ authority toward a more collaborative, advisory role, embracing shared decision-making with patients. However, this shift is accompanied by changes to their professional jurisdiction and status, driven by better-informed and more demanding patients.

In parallel, the use of HIT in daily clinical practice reflects these evolving role perceptions. While openly integrating technology into tasks like medication management has become normalized and even trust-enhancing, physicians remain highly sensitive to how visible HIT use impacts their professional image. As a result, HIT usage strategies vary depending on the type of information, patient demographics, and the clinical context, ranging from open usage to strategic hiding. This variation suggests that physicians’ engagement with HIT cannot be reduced to simple adoption or resistance. Instead, they practice what we conceptualize as *differential HIT use* – the deliberate modulation of technology use depending on the situation, technology, and role expectations. Ultimately, physicians seek to balance transparency and professionalism, using technology to support patient care while carefully managing perceptions of competence and authority. In the following sections, we will outline the contributions to theory and practice and provide an overview of research limitations and avenues for future research.

Theoretical Contribution

We contribute to theory in several ways. First, we extend research on technology use in professional work and Abbott's (1988) theory of professional jurisdiction by showing how IT in healthcare is selectively incorporated into role-congruent practices. Physicians' decisions to engage with HIT are not only guided by instrumental concerns (e.g., security, efficiency) but are deeply embedded in their performance of professional roles. They actively consider whether using technology in front of patients aligns with their role expectations, making HIT use a situated, identity-sensitive practice. This complements and extends Abbott's (1988) theory of professional jurisdiction, where control over knowledge and its performance constitutes the foundation of professional authority. Our findings refine Abbott's account by demonstrating that not only control over knowledge, but also the use of technology itself, has become part of jurisdictional performance, with visible or concealed use acting as a symbolic expression of expertise and competence.

Second, we challenge binary adoption–resistance perspectives and contribute to identity-focused IS literature by introducing the concept of *differential HIT use* (i.e., the practice of modulating technology use depending on the technology, context, and perceived norms). Physicians do not simply use or avoid IT; rather, they engage in situationally aware technology use, adjusting their behavior depending on factors such as the type of patient, the sensitivity of the situation, and the perceived appropriateness of certain devices or platforms (e.g., smartphones vs. desktop PCs). We contribute to identity focused information systems literature by showing how HIT use becomes an instrument of role performance, allowing professionals to subtly signal competence, credibility, or humility. For instance, while opening apps on a smartphone is perceived as being unprofessional, the same apps if opened on a clinic tablet would be ok in front of the patient. Therefore, the professionalism of HIT use should be considered to increase adoption and diffusion of HIT within physicians' work processes.

Third, we refine understandings of technology resistance in professional contexts. Prior information systems studies have emphasized fear of face loss (Liang & Xue, 2022) and defensive resistance behaviors toward new systems (Jussupow et al., 2022a; Lapointe & Rivard, 2005). However, our findings show that physicians do not exhibit generalized resistance to HIT. Instead, physicians exhibit context-sensitive adaptations in technology use aimed at aligning with their professional self-image and patient expectations. We extend this line of work by showing how visible technology use becomes a form of impression management, through which physicians protect and perform their professional role. This goes beyond verbal or interpersonal strategies, highlighting how the presence, absence, or form of HIT itself serves as a symbolic act, carefully tailored to uphold authority and competence in the eyes of patients.

Practical Contribution

Our findings show that physicians' use of HIT is not just about functionality, but about how it aligns with their professional role and social expectations. Designers and implementers of digital health tools should consider how visible use of a technology might affect perceived competence, especially in patient-facing contexts. For example, embedding professional-looking interfaces or integrating tools into established, serious platforms (e.g., desktop systems or electronic health records) may encourage more open adoption in sensitive situations. Further, medical education and professional development programs can benefit from explicitly addressing the relational and symbolic dimensions of HIT use. Training should not only cover how to use specific tools, but also how to strategically communicate competence while using technology. For instance, physicians should learn to explain why one consults a system during a patient encounter to enhance transparency and trust. Finally, for health organizations undergoing digital transformation, our study underscores the importance of engaging professionals in dialogues about role expectations and evolving professional boundaries. By involving physicians in decisions about how and when digital tools are introduced into patient care, institutions can reduce perceived threats to status and foster a sense of ownership and alignment with core professional values.

Limitations and Avenues for Future Research

This study has several limitations that also point to avenues for future research.

First, while our sample includes both hospital physicians and physicians in private practice, it remains limited to the German healthcare system. This context is characterized by specific regulatory frameworks, professional training structures, and cultural norms around medical authority, all of which shape how physicians negotiate their professional roles. The strategic technology use behaviors we document may be particularly influenced by German professional hierarchies and patient expectations, which can differ substantially from those in other national contexts. Future studies could extend our work by conducting comparative research across countries to examine how different healthcare systems, the availability and maturity of technological implementations, liability regimes, and patient–physician relationships shape differential HIT use and professional role developments.

Second, our study focuses on physician–patient interactions, with limited attention to how HIT use is managed within peer interactions or hierarchical relationships (e.g., among nurses, junior physicians, or department heads). Further research could explore how professional role expectations differ across institutional levels or professions, and how digital tools are negotiated across these boundaries. In addition, future research should examine how HIT shapes trust in the physician–patient relationship. Our findings indicate that openly using HIT can enhance credibility and transparency, while concealed use may reflect concerns about undermining expertise or creating patient skepticism. Investigating this dual effect would contribute to a more nuanced understanding of how HIT both enables and constrains trust in everyday care interactions.

Third, our findings capture a specific moment in time in the evolving landscape of digital health. As new technologies like AI-based diagnostic systems or conversational agents become more integrated into clinical work, the boundaries between expert and lay knowledge may shift further. Future studies could investigate how physicians navigate professional role maintenance in relation to more autonomous or visibly intelligent systems, and whether similar impression management strategies emerge.

Finally, while we highlight the strategic modulation of HIT use (i.e., differential HIT use) as part of professional role maintenance, this study does not assess long-term consequences for patient outcomes, trust, or physician stress. Quantitative or mixed-method studies could explore the impacts of differential HIT use on clinical effectiveness, communication quality, or role satisfaction over time. Another promising direction for future research is to examine how patients' own use of digital tools, including generative AI systems, reshapes the physician–patient relationship. As patients gain new forms of knowledge access, physicians may find their expertise questioned or their diagnoses challenged, which introduces new tensions for professional role performance. Investigating such scenarios would deepen our understanding of how HIT not only affects physicians' practices directly, but also indirectly transforms their authority and role boundaries through patient–driven technology use.

Conclusion

This study examined how physicians negotiate their professional roles in the context of HIT. Drawing on Abbott's (1988) theory of professions, we show that HIT use is not only guided by instrumental concerns but is embedded in physicians' performance of professional authority. Our findings highlight that physicians engage in differential HIT use, which means strategically modulating visible or concealed technology use depending on context, technology type, and role expectations. This perspective extends existing IS debates on adoption and resistance by conceptualizing HIT use as jurisdictional performance within professional roles. By highlighting the symbolic and identity–sensitive nature of HIT use, we provide new insights into how digitalization reshapes professional role enactment in healthcare.

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