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Professionals as Change Agents or Instruments of Reproduction? Medical Residents' Reasoning for Not Sharing the Electronic Health Record Screen with Patients

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Abstract: The stability of physicians' authority over patients despite decades of changes in medicine conflicts with newer institutionalist accounts of professionals as change agents rather than instruments of reproduction. We analyzed whether the cultural scripts that twenty-one residents used to justify their approach to a new change, the electronic health record (EHR), signaled a leveling of the patient-physician hierarchy. Residents are intriguing because their position makes them open to change. Indeed, residents justified using the EHR in ways that level the patient-physician hierarchy, but also offered rationales that sustain it. For the latter, residents described using the EHR to substantiate their expertise, situate themselves as brokers between patients and the technology, and preserve the autonomy of clinicians. Our findings highlight how professionals with little direct experience before a change can selectively apply incumbent scripts to sustain extant structures, while informing newer institutionalist accounts of professionals and the design of EHR systems.

Keywords: agency; screen sharing; professional autonomy; neo-institutionalism; sociotechnical systems

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1. Introduction

Organizational change is intriguing because it can disrupt existing hierarchies, such as which departmental units ascend to leadership positions [1] and the degree of inequality between demographic groups [2,3]. Yet, in medicine, the authority physicians hold over patients has remained largely immune to decades of threatening changes, including increased bureaucratic control over their work and the availability of their medical knowledge on the Internet [4,5]. We aim to deepen understanding of the processes that undergird this stability by examining how medical residents frame the introduction of a potential threat to their authority over patients, which is the presence of the electronic health record (EHR) during consultations. Besides disrupting and slowing down workflow [6], the EHR screen represents a potential threat that can democratize the patient-physician hierarchy because it facilitates patients' access to the technical information physicians draw upon to articulate their expertise [7]. Because residents are novices, they have the potential to operate as change agents and usher in a new era of patient-physician relations, and yet any resistance by them can shed light on the mechanisms by which the status quo is reproduced.

Understanding the case of medical residents and their framing of the EHR has broader implications for organizational theories. The stability of the patient-physician hierarchy echoes institutional accounts about professionals structuring conformity [8], yet contradicts newer accounts characterizing professionals as change agents [9–12]. We see the curious stability of the patient-physician hierarchy as a counter case for evaluating new institutionalist accounts of professionals, specifically by showing the potential role of novice professionals in reproducing the status quo.

Studying the rationales of residents for how they share the EHR screen with patients during consultations is intriguing because the case represents an instance where change

should occur for several reasons. First, novice professionals like residents are more open to changes, including those that diminish their authority over clients, because their habits are less developed than their seasoned counterparts [13–15]. Second, screen sharing behaviors are not institutionalized yet because numerous practices exist (e.g., [16]), which stokes reflexivity [10]. Third, regardless of whether residents share information in the EHR with patients or not, they will likely experience a contradiction, which can jolt them into envisioning alternate futures [17]. If they share, this contradicts their supervisors who may reject sharing [18]. Yet, if they do not share, this can still pose a contradiction because medical school exposes residents to changes in the profession's values and assumptions [19], in this case sharing the EHR to level the patient-physician hierarchy. Fourth, the diffusion of the EHR into consultations is a technological disruption to the professional work setting. Technical disruptions [20], particularly to workplaces (e.g., [21]), are well-documented as reconfiguring authority relations. Altogether, residents are experiencing a scenario consistent with an "unsettled time" [22], whereby several cultural scripts are available to justify behavior involving the EHR screen. We are interested in examining which scripts the residents select to order their new experience [23,24] and evaluating them within the context of newer institutionalist accounts of professionals.

We asked residents whether they share the EHR screen with patients during consultations and to explain their reasoning. Consistent with institutional accounts predicting residents as would-be change agents, some indicated sharing the screen with patients resonated with new discourse emphasizing the leveling of the patient-physician hierarchy. However, residents in our sample also described using the EHR in ways that reproduce the patient-physician hierarchy implicitly. Despite having little direct experience with the social architecture of medicine prior to the EHR, they still drew upon incumbent scripts that privilege physicians over patients [15,25]. Their responses resemble those of more seasoned professionals practicing agency by applying the past to stabilize the present [26], except residents–who are novices–lack direct experience with the pre-EHR past. Thus, the rationales of residents rarely revealed calculative motives to sustain the hierarchy, but rather indicated unwitting reproduction. This is an important finding for refining the scope of newer institutionalist accounts of professionals and informing health policy discussions about using the EHR for improving patient engagement during consultations.

2. Background

2.1. Professionals as Instruments of Reproduction

During professional training, persons adopt the patterns of thought and action normative for their profession [27]. They then apply these norms to solve organizational tasks, thereby creating institutionalized practices such as how best to comply with regulatory changes [28–30]. As experts, they are also entrenched in their norms and inflexible to change [13]. Thus, a major strand of research on professionals views them as a force leading organizations to conform to one another [8]. More recent institutionalist accounts emphasize the diverse ways professionals respond to and apply institutionalized practices [9–12]. Such accounts can explain why in the highly regulated field of medicine, the responses by professionals to regulatory changes is nonetheless variable [14,28].

Accordingly, professionals "inhabit" institutionalized practices [31], whereby they exercise discretion in determining whether practices are realized and to what degree. Professionals can therefore be agents of change in an organizational field. Given their privileged status, they seem the most likely agent to change institutionalized practices [11,32].

2.2. Professionals as Change Agents

Opportunities for change in highly institutionalized fields like medicine, however, are uncommon. Endogenous change, which is initiated by actors inside the field (e.g., professionals), is particularly uncommon because it presents a paradox [33]: someone is simultaneously embedded within the field and yet able to imagine an alternative reality along with the means to craft it. Nonetheless, endogenous change is well-documented

and the protagonists appear calculative in their decision-making and deliberate in action, occasionally risking their privileged position vis à vis others in the field [34]. Within medicine, physicians have at times not only embraced but also initiated changes that diminish their authority over patients and health care delivery [32,35–37]. Residents seem particularly unlikely to resist these changes because they are still learning the incumbent practices and scripts [13–15] that more seasoned professionals use to stabilize shifting workplace environments [26,37,38]. Under the right circumstances, then, professionals like residents can usher in change.

There are several reasons to expect sharing the EHR screen with patients fits within these circumstances. First, there are no formal rules governing the use of the EHR in the presence of patients, which creates an opportunity for change. Indeed, studies document heterogeneity in practices (e.g., [16]). Because practices are not institutionalized, residents have to navigate novel terrain reflexively [10]. This creates an opening for change that need not be "heroic," and therefore require as much deliberate action as commonly documented in studies of institutional change [10,12,34]. Instead, the mundane, everyday activity of sharing the EHR screen with patients is sufficient to imprint institutionalized practices that reconfigure the authority relation between patients and physicians. The rationales of residents can hint at how ritualized sharing information in the EHR or not is in their everyday clinic visits.

Second, residents more so than experienced physicians may find themselves in situations ripe for instigating change. At the time of our study (2014), residents were training within an environment of patient empowerment that was unlike previous iterations. The passages of the Affordable Care Act and the HITECH Act in the U.S. and similar legislation in other countries both added regulatory credibility to patient claims of greater authority relative to physicians and identified technologies like the EHR as tools for empowering patients [39–41]. Residents, therefore, were straddling between old and new practices, which can catalyze action that departs from habits [23]. Further, by using the EHR in ways that discord with granting patients greater authority, residents would experience contradictions between local and extra-local environments. Repeatedly experiencing contradictions should trigger an awakening from the slumber that befalls actors embedded within highly institutionalized fields [17] and pull them away from following routine pathways to the same end [23,31].

Third, the opportunity for reconfiguring the patient-physician hierarchy occurs during the clinic visit, which is where professional service work takes place and therefore the most likely site for endogenous change. During the clinic visit, residents and other clinicians shape the trajectory of the interaction [25,42] and can therefore either reproduce or disrupt inequalities [15,43].

Fourth, the switch from a paper-based record to the EHR is a disruption capable of jolting residents into rewriting how they interact with patients. Such disruptions can unencumber actors from their habitual practices and modes of thought [13,23]. Further, the case of EHR adoption constitutes both regulatory and technological change, which can raise actors' awareness of alternative configurations in organizational fields [10,34]. Technical change affecting the worksite, in particular, is well-documented as instigating the rewriting of extant authority relations because it disturbs existing work practices [9]. Indeed, EHR systems were disrupting the routines of physicians at the time of our study [16,44,45].

In summary, previous research shows novice professionals like residents are positioned to embrace change, including change that diminishes their authority over others [14,32]. However, the likelihood of change materializing from technological disruption depends on how individuals use the new technology [20,46] and accommodate it into incumbent scripts [38]. The current study adds to this conversation by investigating how residents share the EHR screen with their patients. The EHR is an intriguing change given its potential to be a tool for both change and reproducing the status quo.

2.3. EHRs: The Rule or Exception?

The patient-physician hierarchy has remained intact despite several other technological disruptions within medicine, but the EHR may be the exception for two reasons. First, its content differs from previous technological disruptions because it houses the medical record, which comprises technical information physicians draw upon to articulate their expertise and therefore threatens their information advantage directly [7]. Previous technological disruptions (e.g., [47]) threatening to democratize this information advantage only housed information gathered by laypeople (e.g., patient blogs and forums) or distilled physicians' technical knowledge (e.g., WebMD). Unsurprisingly, then, physicians have fought against attempts to make the medical record more accessible to patients [40,48]. Second, unlike these previous attempts, the EHR becomes an artifact for which patients and physicians must negotiate usage during consultations. Since the EHR houses information about the patient, patients feel that they also own it and should have a say in how it is controlled [49]. Previous research shows shared ownership of an artifact can dismantle boundaries between groups of actors because they share control over it during interactions [21,50].

Yet, institutional dynamics in which the EHR is embedded may also block change. Although the specific context of how physicians relate to patients while using the EHR is not institutionalized, incumbent scripts exist that influence relations and practices in the clinic visit [25]. Agency is not synonymous with breaking old routines, but rather can be expressed in the application of old routines to new experiences [23,24]. Residents' existing position within a social structure that often privileges them over patients (e.g., through their formal titles and credentials) enables their capacity to exercise such agency [24]. The inflexibility of cultural scripts can stall change induced by technological disruption [51–53] and, in this case, potentially blunt the negotiation process that might naturally emerge over control of the EHR in the clinic visit. While more seasoned professionals deploy these scripts to stabilize shifting environments [37,38], it remains unknown how novices who lack direct experience with the field prior to the shift respond. Residents may lack direct experience, but are familiar with incumbent scripts [15].

The EHR may be an important exception to extant propositions about when professionals are likely to usher institutional change. Residents are simultaneously positioned to usher change or maintain the status quo. We interviewed residents and asked them whether they share the EHR screen with patients during consultations, and why they share, to understand their role in disrupting or reproducing the status quo with an eye toward identifying ways to intervene and achieve desired health policy aims.

3. Materials and Methods

Our research goal is to better understand residents' reasoning for how they use the EHR screen with patients, and how their reasoning may reaffirm or reconfigure the patient-physician hierarchy. Through interviews, we can understand how actors access their repertoire of cultural scripts to overlay meaning onto their reports of past or intended behavior [54,55]. Actors' positioning within an institution, like medicine, informs these rationales [54]. Put differently, we are interested in residents' justifications for behavior, as opposed to their behavior, because these transcend situations and reflect the broader cultural milieu.

3.1. Sample Recruitment and Description

We recruited residents of internal medicine who saw patients in outpatient settings. Such clinicians are generally tasked with thinking through problems as opposed to performing procedural interventions and will therefore likely feel the greatest threat from the EHR on their professional status [7]. To identify residents, we worked with an urban medical school to attend a meeting with medical residents and provide an overview of this IRB-approved study. All residents in the program were in a training environment that used EHR systems. We emailed invitations stating we were "interested in the views of resident

physicians in regard to use of electronic health records during primary care visits and how this may impact interaction with patients."

Out of 125 residents we emailed initially, twenty-four responded, and twenty-one of these completed interviews before we reached data saturation. The residents interviewed saw patients in five different outpatient settings, one of which included a Veteran Affairs Medical Center (VAMC). Six residents (29%) were in their first year of residency, seven (33%) in their second year, and eight (38%) in their third year. Twelve (57%) residents were male. Twelve (57%) residents identified as White, nine (43%) as Asian/Pacific Islander/Chinese/Japanese. Residents ranged in age from 26 to 35. The sample size limits our ability to identify patterns based on demographic or training background but provides saturation on examples representing our theoretical constructs of interest: rationales used to interpret their use of the EHR screen with patients.

3.2. Data Collection

All interviews were conducted in person by the third author and research assistants during fall of 2014 in private offices located in the residents' practice setting and lasted 23–40 min in length. The interview began with questions about residents' general communication style with patients, and then asked about their experience with, reactions to, and practices with EHRs, particularly during outpatient visits with patients. Most findings we present come from the last question, but residents discussed the EHR while describing their communication style and referred to experiences with patients while reflecting on the EHR, indicating how entwined the two are in their schemas. As needed, we probed for examples to understand how situations conditioned their narratives [54].

3.3. Data Analysis

Each interview was audiotaped and professionally transcribed. Transcripts were imported into NVivo for analysis. Data analysis followed the principles of grounded theory from Charmaz [56]. We triangulated the data analysis by using multiple authors to construct the codebook [57]. This facilitated mitigating bias and enhancing validity in the interpretation, because although the two are both experts in health and technology, their expertise is complementary, with the first author holding expertise in health policy and the second in workplace inequality.

The first and second authors began with an initial pass at reading the interviews, at which point both noticed the majority of the residents were inclined to not share the EHR screen with patients. The two independently read and coded each interview using open-coding, with an eye toward developing codes to explain this phenomenon. They met weekly to discuss their interpretations, write memos, perform the constant comparative method, and develop a codebook. The first author then re-read the interviews and applied the codebook. As a check on the reliability of how the codebook was applied, the two reviewed the final coding of the interviews.

The codes that the two authors developed from the interviews involved categorizing similar events (e.g., residents' descriptions of sharing EHR information during the patient visit) and rationales (e.g., reasons for not sharing the screen in a specific circumstance). A second phase of analysis involved identifying connections between events and rationales. The events and associated rationales revealed subtle ways that residents see the EHR as a tool to articulate their authority.

4. Results

We derived from newer institutionalist accounts of professionals as change agents why the case of residents using the EHR in the presence of patients posed an opportunity to alter extant authority relations between patients and physicians. We begin our analysis by showing corroborating evidence. Corroboration, however, was only to a certain degree. We show how the case of the EHR is important to consider for refining these newer accounts, and then present three ways residents describe using the EHR that reaffirm the existing

authority hierarchy between themselves and patients. Notably, their rationales do not consistently reveal calculative motives for sustaining the hierarchy. Rather, residents seem to reproduce social structure unwittingly.

4.1. Signs of Change, but Stability Too

Residents indicated they received little formal and informal training about how to use an EHR in front of patients. A third-year male resident put this best when he said, "you get formal training in the world of [an EHR vendor] . . . and whatnot, but you don't get formal training in utilizing those electronic health records while you're visiting with a patient." This left residents with little instruction to begin framing their interactions with patients, thereby creating an opening for them to imprint institutionalized practices that reconfigure the patient-physician hierarchy.

Despite the lack of explicit instruction, patterns emerged. Some residents reported sharing the EHR screen regularly and drew on broader cultural narratives about using information to empower patients to explain their behaviors. For example, a male third-year resident stated sharing created an "environment of transparency" and a second-year female resident made a similar comment when explaining "I always want them to see what I'm seeing." A third-year female resident directly linked information transparency to more egalitarian relations with patients when she explained she shared the screen because she viewed patients as "partner[s] in their own care." Altogether these rationales are consistent with discourse about using the EHR as a tool to level the hierarchy.

Most of our residents, however, offered accounts that contradicted this discourse. Notably, their interviews lacked deliberate thought about actively keeping patients away from the EHR. When probed further about perceiving any disadvantages to sharing the EHR screen or whether there were moments where they consciously decided not to share the screen, some of the residents clearly needed to think about their response. For example, a second-year male resident responded: "Um . . . I can't really think of any, you know, instances where I've made a point not to share the screen. Um, you know, well, now that I think about it." Although he hesitated initially, he proceeded to describe specific experiences of withholding the EHR screen resembling those of other residents. His response lacks the habitual association between behaviors and situations seen in more seasoned professionals [13], but hints at how professionals, even newcomers, can unwittingly reaffirm existing social structures. Likewise, a male first-year resident initially stated he could not think of instances where he purposely withheld the screen, yet, toward the end of the interview while responding to other questions he said "I don't share . . . but I'm not trying to hide." Such contradictions are common in face-to-face interviews where respondents are asked to justify behavior and represent attempts to maintain face [54,55]. The contradiction in this instance suggests the availability of diverse scripts to explain behavior [22].

Most residents in our sample, then, implied they had direct control over the EHR during the clinic visit. A female third-year resident said this explicitly when she characterized screen sharing as: "it's mainly under my–it's under my control." The eventual declaration of certainty suggests an understanding that patients are accepting of the resident's control over the screen; otherwise the resident would have qualified the statement with another about the patient's role in determining who has control. Since control over objects reflects authority [21], this seemed likely the pathway by which extant social structures are sustained.

Hence, we found evidence suggestive that new professionals largely refashion the status quo, but precisely how was unique. Residents, like other professionals coping with shifting work settings [14,26,38], were drawing on incumbent scripts to order the present. Their responses about controlling the EHR align with habitualized agency [24], whereby they were socialized to believe they possesses the self-efficacy to control the situation during the clinic visit, just like more seasoned physicians [15]. What was unique here is that this was occurring among novice professionals with little direct experience interacting with clients prior to the advent of a new technology. Their habitualized agency can occur

because cultural scripts store ways of relating, such as how physicians relate to patients [25], and change slower than the environment [51–53]. Although residents have less experience practicing the scripts than more seasoned physicians, they are aware of them and know how to apply them [15].

The core of our remaining analysis reveals the ways residents understood their control over the EHR in ways that can explain how the existing hierarchy between themselves and patients gets reproduced. Our analysis groups residents' rationales for how they decided to use the EHR during clinic visits. These groupings are not meant to exaggerate distinctions between them because we believe the system of rationales works together to stabilize physician authority over patients in the face of this technological change.

4.2. Legitimacy through Education

Medicine through the years has transformed into a field where the primary client, patients, must now display a degree of expertise and advocate for the provision of services from professionals [43]. Implementing the EHR was a means to facilitate physicians in imparting the expertise and skills necessary for patient engagement [41]. We asked residents specifically if they used the EHR as a tool "to communicate or educate the patient," and they consistently responded in the affirmative, including those who characterized themselves as not sharing the screen regularly. For example, a third-year female resident responded:

> "*I don't [share] that often, but I will do it if I'm trying to show them their weight trend or their . . . value that we have been following and show [them] what their trend is, I think that would be helpful for them*."

Other residents described similar uses, revealing a coherent script about using the EHR to educate patients.

We discovered that residents understood using the EHR screen for communication and education as serving another purpose, about which we did not inquire directly. Specifically, residents recounted behaviors aimed at legitimizing what they were telling patients, suggestive of attempts to gain cooperation by others [58]. A male third-year resident focused on the powerful role of images for communicating medical information, which is a belief predating the EHR [59,60]: "if you can see it . . . it's one thing to talk about it in all this medical jargon, but if somebody actually is able to visualize it, it adds a totally different component." According to the resident, images are more accessible to patients than "jargon," which can help get patients to understand information. Although he did not describe "status-hungry" motives [50] for using the EHR, he recognized a difference in expertise between himself and patients, and thereby indirectly affirming his authority over patients as an expert.

Other residents were more direct in describing their motives for using the EHR during education to legitimize what they were telling patients and preserve the script that physicians should educate patients. A male third-year resident used information in the EHR to corroborate his assessments of patients:

> "*I think sometimes we run into the issues of, 'well doc, I felt that I lost weight' and then you can show them the actual numbers and say, yes or no . . . or, 'I think I'm taking my medications' and then I can show them, 'well I don't think you've filled your prescription' or, 'your blood pressure isn't controlled.' So it–it adds an extra layer of support to substantiate claims that I may or may not be making*."

Likewise, another male third-year resident used lab values that the EHR tracks to support his assessments:

> "*People see the numbers and they can realize for themselves that I'm not just telling you for the sake of telling you . . . seeing it makes it more real and hopefully improves compliance . . . I don't know if it does but, hopefully it does*."

The resident has no direct evidence that it facilitates patients' adherence, but nonetheless uses the possibility to justify his behavior and suggest that the EHR helps patients

comply with the authority of physicians. Here too we see evidence suggestive of a social skill, specifically one where an individual gains the cooperation of others to uphold existing social arrangements [58]. When legitimacy is questioned, appeals to other widely accepted practices can stabilize the situation [61]. In these instances, residents leverage widespread beliefs predating the EHR that technology offers more impartial evidence than patient or physician statements [59,60].

Whereas the previous examples are of residents using the EHR to essentially repeat information they were relaying to patients, other residents relied on the EHR to fill in information gaps. For example, a female second-year respondent stated, "I don't usually share the screen . . . the one time I did I can't pronounce the medication, I say, hey, are you taking this medication." During clinic visits, physicians are to their patients the corporeal embodiment of abstract ideas about their profession, like technical competence [62]. Rather than mispronouncing a medication and disturbing this performance, the resident relies on the screen as a surrogate. The behavior is different from previous examples, but the end result is the same whereby EHR use buttresses residents' expertise directly, and in turn therefore also their authority [63].

Having the EHR physically present, then, grants residents the ability to leverage information on its screen to corroborate their expertise and manage patient practices that they learn through training. For example, they learn outside of EHR training contexts that some "bad" patients do not track their own progress or withhold information [15,43], and these residents accommodated the EHR as a tool to help manage them. Thus, while sharing the record with patients is often touted as a means to reassure patients [48], here we see evidence suggestive that sharing also enables reassuring the clinician about their medical expertise and, accordingly, their authority.

4.3. Brokering

By brokering, we reference statements from residents that relayed the importance of their presence and expertise to mediate between the EHR screen and patients. The rationale has roots in physician concerns that patients will have "unfettered access" to their paper record [48], which predate the EHR and the initiation of medical training for these residents. Nonetheless, residents had access to the script and applied it to justify their behaviors. For instance, a female third-year resident describing how she decides whether to share the screen said, "there's not that many occasions where I've necessarily felt that it was really necessary for their understanding." The resident believes she intervenes between the patient and the information in the EHR and situates her expertise as central for determining whether the two should interface.

In instances where the screen was shared, residents continued to depict themselves as brokers by focusing on their role in distilling and interpreting information from the screen for patients. A male third-year resident relayed that "the use of medical jargon in documentation may not be perceived in the appropriate manner by the patient," echoing concerns that once again predate the EHR [48]. The sentiment also reverberates with other qualitative and quantitative studies showing physicians are concerned that patients would not understand or would react with undue worry to notes [18,64,65], despite patients reporting otherwise [40,64]. Thus, the rationale persists in new contexts despite lack of corroboration from the external environment [52,53] and the direct experience with old ways of doctoring.

Other residents focused on their role in sifting through the volume of information available on the screen for patients, as evidenced in the comments by a female second-year resident: "You know, I don't wanna confuse them . . . especially 'cuz [it] can be pretty complex in parts . . . That's why I try to look at simple sources rather than just show them the whole screen." Although residents reported little training in how to use the EHR in the presence of patients, this resident is implicitly asserting that only she possesses the expertise to decipher the information for patients.

Brokering also involved mediating the interpretation of results to avoid undue harm to patients. For example, a male first-year resident said:

> "*If you have a particularly anxious patient, you know, every–every lab printout form, if it's just like a decimal point out of the standardized normal accepted reference range, then they–they might get a little anxious and freak out and need somebody to calm them down a little bit . . . it might be something that's kind of irrelevant, but, you know, since they don't have the understanding, they just see this as abnormal . . . but, I think, being right by with them as you're doing it, um, alleviates that*."

Here, the resident is guided by a service-orientation to the patient, but still positions himself as an interpreter of the information on the screen as key because patients "don't have the understanding," despite patients' ability to cultivate it through practice [40,64].

Altogether, the logic used to reason about screen sharing appeared to emphasize that residents are different from patients because they possess the skills necessary to interpret information on the screen. The presence of the EHR could risk compromising physicians' position as brokers between their clients and the domain of knowledge in which they claim expertise [63,66]. Their comments align with boundary protection behaviors, despite not directly characterizing them as such. Instead, like in other studies of professionals, their boundary protection behaviors are implicit [50,67]. The residents applied narratives predating the EHR that were historically applied to paper-based records, much like other professionals seeking to stabilize technological disruptions [38], except they did not have direct experience with the older technology.

4.4. Limiting Monitoring

Another concern predating the EHR is that patients accessing their records would alter documentation, despite evidence in the contrary [48], which we saw refracted in another set of rationales. For example, a male second-year resident stated:

> "*I wouldn't like to automatically have where my patient can see everything that I'm typing . . . sometimes I would be less comfortable in typing some things in front of a patient than I would otherwise . . . if I didn't have them looking over my back*."

Here, joint viewing of the EHR during clinic visits raises concerns that notes will be altered because patients monitor them. Despite not directly invoking the maintenance of hierarchy as a motive for limiting it, the resident's concerns can still be traced to hierarchy indirectly. For instance, who monitors whom in the workplace reflects hierarchies [68].

Notetaking while sharing the EHR raised the possibility a patient may request to censor or edit the notes and thereby infringe upon the resident's discretion to dictate the terms of the record's content. When asked how he would respond if a patient requested to edit information recorded, a male third-year resident said he never experienced that situation. However, he then projected into the future and relayed: "But if I theorize about it, I would explain to them that only medical professionals have–have access to this." Here, again we see an assumption about who ought to control an object, which reflects authority [21]. The resident "theorizes" the explanation would assuage the patient, which indicates an additional assumption that the patient would share the belief about who ought to control the EHR. Lack of training with a new artifact can hinder imagining the future trajectory of action [38], but the resident relied on an assumption that physician control over artifacts in the exam room is widely accepted and therefore legitimate [61].

Across residents, the most problematic situation threatening their autonomy involved sharing an EHR screen with patients that displayed notes about sensitive topics, like mental health, substance abuse, terminal illnesses, and obesity. This occurred despite the inability of some residents to clearly articulate why. The interviewer asked a male third-year resident to explain why he does not always share the screen with his patients. He responded, "you know, I can't say for sure, and there may be a role in that if there's any sensitive information that they're relaying to me." For this resident, there was no obvious rationale for his behavior, but upon reflection he devised a possible scenario that seemed

reasonable which involved sensitive information. This hypothetical repeats information other residents stated, which signals the presence of a cultural script [54] and indicates how individuals contribute to reproduction unwittingly [23].

Other reasons for not sharing the screen were to avoid sharing notes by other clinicians, which also seemed to be about limiting monitoring, this time the monitoring of other medical professionals. For example, a male first-year resident describing when he does not share notes said: "Usually have been other providers. Not especially since the content is bad or anything, it's just . . . I don't know. I'm–I'm not sure why I don't show them as much." Another resident echoed the general sentiment by simply stating it was "not appropriate" and also could not elaborate. The behavior is clear–do not share the notes of other clinicians–but the source of it is ambiguous to these newcomers to the profession. Interestingly, these residents saw patients at the VAMC, which has OpenNotes (where notes are shared with patients through the patient portal). Thus, despite being embedded within a larger organizational context that embraces transparency, and therefore should alter how the residents access scripts [25], they still "inhabit" [31] extant professional practices that favor physician control over information within the medical record. This shows how cultural scripts transcend local situations and how their application can reproduce old structures in new settings.

As with prior themes, calculative motives are rarely apparent, but rationales contribute to preservation of extant hierarchies indirectly. Even residents who had difficulty recalling behaviors and expressing the reason behind them exhibited similar types of concern as others. Their hesitations are indicative of novices who are still acquiring the habitual association between situations and behaviors that more experienced professionals possess [13]. The responses residents eventually gave reflect the accidental role novice professionals have in sustaining the status quo, despite less direct experience with it.

5. Discussion

In response to calls to further understanding about why physicians' authority has been immune to widespread social and technological change [5], we studied how residents rationalize whether they share the EHR screen with patients during consultations. We derived from newer institutionalist accounts of professionals as change agents several reasons to expect this setting to generate opportunities for residents to rewrite the authority they possess over patients. There was evidence these opportunities existed yet residents largely offered reasoning for not sharing the EHR screen that can reproduce the hierarchy indirectly. Their rationales show how novice professionals deploy cultural scripts to maintain the status quo, despite lacking direct experience with the field before its shift. This study reveals how novice professionals can exercise agency in a manner that affirms extant institutionalized practices unwittingly, and thereby offers important insights into the broader literature on professions as well as health policy discussions about EHR implementation.

We saw hints of a revolution in the patient-physician hierarchy, which resonates with newer institutionalist accounts about professionals as change agents [9–12]. Residents are generally more open to change, including change diminishing physician authority, than their more senior counterparts [13,14]. Further, residents were operating within a worksite that the EHR was transforming and were embedded within a broader cultural environment embracing patient empowerment. Accordingly, there were signs of change whereby some residents reported willingly sharing the EHR screen with patients and drew on a broader patient empowerment discourse in their reasoning. Rather than viewing patients as subordinates, these residents understood them as partners, which is indicative of a leveled hierarchy [42]. These observations affirm the ability of a technology to improve collaboration because it communicates information used in shared decisions [21].

Where our findings depart from these newer institutionalist accounts is useful for refining them. Our findings suggest some of these accounts [10–12] may overplay the role of professionals' purposeful action in choreographing institutionalization. Like clinicians in other studies, residents' rationales were not always targeted to sustaining their privileged

position over patients directly [50]. If the lack of such motives was due to social desirability effects, then what residents deemed acceptable to relay during interviews still offers a window into how hierarchies get reproduced. Residents deemed it acceptable to describe the EHR as a tool to legitimize their expertise through patient education, as part of their role as brokers to patient information, and as a potential threat to their and others' autonomy over the record and its content. Because the EHR becomes an aid for achieving a broader set of practices existing prior to its advent, like making clinical judgments and expecting patient adherence, the accounts indirectly sustain authority. Our residents are agents in the institutionalization process, but somewhat unsuspectingly. This finding advances a growing body of work recognizing the role of professionals as agents in the institutionalization process by showing how their actions need not be strategic [26].

The lack of purposeful action, however, does not indicate a lack of agency. Rather, the residents display an increasingly recognized form of agency in the institutionalization process. Most studies documenting professional agency depict purposeful, "heroic" actors [34], yet the more mundane task of bracketing the past to solve current problems also involves a degree of agency [23,24]. What makes our study unique is that residents, as novice professionals, lack a pre-EHR past on which to rely yet managed to display some uniformity in their responses. Their rationales resembled those of more advanced physicians responding to moves making the medical record more transparent to patients [64,65]. Professional training inculcates cultural scripts defining the natural way of doing things [27], which helps professionals contain uncertainty in the absence of institutional scaffolding [69]. Other work shows how ways of relating to old technologies are inscribed into new technologies [38], but we add that even novices–who have minimal direct experience with old technologies–contribute to the process. This is because the ways of relating are encoded in scripts, such as how a physician should shape the trajectory of the clinic visit [25], which transcend situation and exist in the absence of direct experience.

Our findings are also useful for refining the scope of newer institutionalist accounts of professionals as change agents. Despite the potential for the residents to choreograph change [11], it does not seem to be occurring outright. New technologies like the EHR can be wielded in ways that reinforce, rather than disrupt social hierarchies and dynamics [70]. In the case of the EHR, there are residents who viewed it as "theirs" and deemed their control of it as unproblematic. The residents appear socialized into viewing the clinic setting as a situation where they have control over circumstances [24]. The institutional dynamics supporting clinicians' social position vis à vis patients [25], then, restrains the realization of the EHR as a tool for change.

Our findings should be interpreted with important limitations in mind. The use of a convenience sample of residents working in settings within a mid-size city makes it unknown how well their experiences represent the population of residents. For instance, our findings cannot establish the prevalence of key rationales for practice among all residents working in the United States. The sample also inhibits taking into account how variation in workplace settings modify patterns. For example, variation in local organizational norms [25] may shape how clinicians "inhabit" [31] the practice of using the EHR during patient consultations, which we were unable to observe in our sample. More research is needed to elaborate the work we do here in refining newer institutionalist accounts of professionals.

Lastly, our study has important ramifications for achieving the aims of health policies, including considering how contextual factors like EHR design may impact the process. Policies must consider how extant cultural scripts affect how change is received. For example, the script describing physicians as educators may lead to views that leveling is critical for patient engagement, but also to concerns about diminishing the credibility of physicians as experts. Policies introducing new technologies, like the EHR, will also need to consider how design may resonate or contradict with cultural scripts. For example, when objects are defined as usable by multiple groups, it can facilitate greater collaboration [21]. Accordingly, a redesign of the EHR–such as larger screens, mirroring screens for patients,

designing more simplified and interactive screens, and functions that help clinicians share information visually while educating patients–is likely necessary to signal that physicians and patients can control it [71,72]. Without technological redesign, professionals may feel their position vis à vis others is threatened and reject a new technology meant to digitize their work (e.g., [2]). Greater attention to cultural scripts can reveal the flexibilities that policies and technological designs require and, ultimately, the pathway to acceptance of new technologies.

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