



Sources of physician satisfaction and dissatisfaction and review of administrative tasks in ambulatory practice: A qualitative analysis of physician and staff interviews.

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Executive summary

Ambulatory care in the United States has been subject to dramatic pressures in the last decade, including those created by transition to electronic health records (EHRs), performance measurement, big data analytics, population health, rising physician employment with health systems and increasing regulatory demands, along with growth in chronic illness care and increasing patient complexity. This qualitative study explores fundamental sources of physician satisfaction and dissatisfaction, and the effects of administrative work on practices. Specifically, this study provides context to a time study of physician work during and after office hours that found physicians spend nearly two hours on EHR/desk work for every hour of direct face time with patients.¹ Together these analyses broadly convey a picture of ordinary life in ambulatory care practices.

Objectives of the work were to (1) discover themes of satisfaction and dissatisfaction arising from multiple interviews of ambulatory care physicians observed during clinic days, and (2) gain a better understanding of key administrative tasks and their effects on the daily workload of physicians and medical practice staff members. Data collection methods included semi-structured interviews as part of a multi-method study of physician and staff time distribution during and after office hours.¹ The interviews were conducted at ambulatory care practices in four states during July and August 2015. Interviewers asked 38 physicians in family medicine, internal medicine, cardiology and orthopedic surgery about their satisfaction, dissatisfaction and suggestions for change. They also asked physicians and their administrative staff members specific questions about the amount of time they dedicate to five identified task categories, details about the processes in place to complete the tasks, and the degree to which the tasks are easy to execute or represent a source of frustration or burden. The five tasks were selected based on their prevalence in the administrative processes of a typical ambulatory care practice. Two interviewers analyzed transcribed interviews with inductive grounded theory to identify physicians' perceived sources of satisfaction and dissatisfaction, consequences of dissatisfiers and suggested changes.² A qualitative summary of physician and staff feedback on tasks was prepared.

This study found that physicians derive satisfaction from providing good medical care and taking care of patients. Sources of dissatisfaction for physicians were EHR/desk work, complexities of the payer systems and practice

administrations. Tasks required by these dissatisfiers were described as creating time pressure that negatively affects patient care. These dissatisfiers were also perceived as disrespectful to physicians both personally and professionally.

U.S. health care is under stress at many levels. In the implementation of technology, and regulatory and reimbursement schemes intended to improve health care, physicians experience newly created problems and believe that patient care is threatened.

Background

Long-range studies of primary and secondary care physician satisfaction have been reported and indicate that practice type, time management and other extrinsic factors can have an effect on the degree of satisfaction or dissatisfaction a physician may experience in their profession.³⁻⁵ However, recent studies give new views through different metrics into satisfaction and suggest rising distress across the provider population.⁶ Physicians studied in 2011 through 2014 showed a significant increase from 46 to 54 percent in Maslach's burnout measures.⁷ A separate study of physicians during 2012 and 2013 found that greater than 50 percent reported stress, 27 percent were "definitely or completely burned out" and nine percent intended to leave medicine within two years.⁸

This is the first qualitative study exploring ambulatory physician attitudes toward work satisfaction performed in conjunction with a study of objective, quantitative measures of time distribution for physician clinical work during and after office hours.¹ The quantitative portion of the study found that physicians spend almost half their day on EHR/desk work; for every hour spent on direct clinical face time nearly two hours were spent on EHR/desk work. This report of the qualitative portion of the study provides context and further understanding to the quantitative data.

Methods

Semi-structured research questions were developed and piloted in three clinics to determine if the questions were answerable and elicited a range of responses. Medical students were trained as interviewers for this project over a two-week period. Training included principles of ethical interviewing, review of interview scripts and guidelines for semi-structured interviews of both physicians and office staff.

Table 1. Sources of physician participants' satisfaction and dissatisfaction themes and sub-themes

Sources of satisfaction	
Scientific values	<ul style="list-style-type: none"> • Intellectual work • Assessment • Management for intended medical outcome
Humanistic values	<ul style="list-style-type: none"> • Respect, caring, compassion
Sources of dissatisfaction	
Electronic health record and desk work, paper-work and clerical work	<ul style="list-style-type: none"> • Electronic health or medical records, meaningful use (MU) or EHR product • Poor usability • Patient portals (MU) • Regulatory control through technology
Payers	<ul style="list-style-type: none"> • Public payers, Medicaid and Medicare (CMS) • Private payers including insurance companies and worker's compensation
Administration	<ul style="list-style-type: none"> • Management at the specific practice level
System	<ul style="list-style-type: none"> • External forces that are not payers or practice administration
Other	<ul style="list-style-type: none"> • Patient non-compliance • Bad care by other providers
Consequences of dissatisfiers	
Time	<ul style="list-style-type: none"> • Time, time pressure, limited time
Patient care	<ul style="list-style-type: none"> • Care delivered below internalized professional standards • Inadequate attention to patients • Patient outcomes
Disrespect	<ul style="list-style-type: none"> • Disrespect • Loss of autonomy
Other	<ul style="list-style-type: none"> • Difficult, not fun, frustrating, mind-numbing

Participants

A stratified, non-probability sampling method was used to recruit ambulatory practices. Based on criteria suggested in the literature, specialty and regional criteria were set and practices were recruited until all criteria were fulfilled. Invitations for participation were extended through state medical societies. Both physician and staff participation was voluntary and anonymous, and appropriate institutional review boards gave approval.

Data collection

Interviewers asked physicians three open-ended questions in a semi-structured interview: (1) "What brings you the greatest satisfaction in your practice?" (2) "What brings you the greatest dissatisfaction in your practice?" and (3) "If you could change one requirement that affects your practice, what would it be and how would you change it?" The

interviewers also asked both physicians and administrative staff in the practices specific questions about the amount of time they dedicate to each of five identified task categories, chosen based on their prevalence in the administrative processes of a typical ambulatory care practice: prior authorization, medication refills, between visit care, test results and claims processing. Interviewers probed for details about the processes in place to complete the tasks, and the degree to which the tasks were easy or were a source of frustration or burden. Participants were asked to identify, for each task, the amount of time spent on a reasonably straightforward request as well as a problematic request.

Analysis

Grounded theory was used to identify themes in the transcripts across the sources of satisfaction and dissatisfaction, consequences of dissatisfiers and suggested changes.^{9,10} When researchers trained in qualitative analysis and familiar with the study independently reviewed transcripts, repeated concepts became apparent. As transcripts and concepts were re-reviewed together and independently, themes

began to emerge. Five rounds of analysis led to the mutually developed themes and relationship framework. Thus, there was no prior hypothesis tested. Instead, all themes and relationships emerged through reiterative transcript analysis and were identified conceptually. When participants described multiple satisfiers or dissatisfiers, they were all included. A qualitative summary of the physician and staff descriptions of tasks essential to a typical workday was also prepared.

Results of physician interviews

All 57 physicians who were observed in the time study were recruited, and 38 (67 percent) gave interviews. Attrition between observation data collection¹ and interviews stemmed from clinical demands. Participants comprised a sample representative of four specialties: family medicine (FM; n=4); internal medicine (IM; n=15); cardiology (C; n=9); and orthopedics (O; n=10). Approximately 35 percent of the sample was located in Washington, 35 percent in Virginia, 20 percent in Illinois and 10 percent in New Hampshire. Eighty percent of participants were male. All had used EHRs for more than two years and 27 percent used documentation assistants or dictation for documentation support. Only one participant was under 30 years of age, one participant was over 60 years of age and the remainder were distributed evenly between 30 and 60 years of age. Interviews lasted up to 45 minutes. The interviews were audio recorded and transcribed for later analysis. Table 1 displays the themes and sub-themes that emerged during the analysis.

Satisfaction stemmed from provision of sound medical care and relationships with patients. Multiple dissatisfiers were identified and in almost all cases were described as having a negative effect on patient care. The effects of dissatisfiers directly countered sources of physician satisfaction. Changes recommended by the physician participants targeted identified dissatisfiers.

Sources of satisfaction

Although satisfaction data saturated quickly, all transcripts were included in the analysis. Physicians identified their greatest satisfiers as humanistic rewards, scientific rewards or both. One-third identified humanistic rewards and another one-third identified scientific rewards as their greatest satisfiers. The remaining one-third of participants indicated both scientific and humanistic rewards as their greatest satisfiers. No differences between primary (FM and IM) and

secondary (C and O) care physicians were observed.

Scientific satisfaction arises from the intellectually rigorous practice of medicine. The reward is met through the practice of good medicine that results in positive patient outcomes.

Finding something ... unusual and being able to treat it. (FM)

Seeing patients that are badly traumatized and seeing them through ... surgery, physical therapy, walking without a limp. (O)

Additionally, satisfaction arises from the intellectual challenge itself.

... solving complex problems ... (C)

The actual practice of medicine ... the [investigation], the management, getting to use your skills. Medicine is still the best part of medicine. (IM)

Humanism reflects the compassion, integrity, altruism and respect for self, patients and peers associated with the medical profession.¹¹ Important relationships with patients, especially when longitudinal, represent humanistic values. Collegiality was also satisfying.

I don't think there's anything cooler or better in life than ... helping somebody ... in a vulnerable position and having a positive outcome on their lives. (O)

I take care of her sister; I take care of her mom... [seeing] patients today that I plan to see 20 to 30 years from now. I think that's the main gratification. (C)

I think the reason I have lasted so long is because I have a really strong relationship with the surgeon I work with and it makes my job fun. (O)

Sources of dissatisfaction

Dissatisfaction responses did not saturate as quickly as satisfaction responses. Dissatisfiers included EHR/desk work, public and private payers, practice administrations and the system itself. These sources of dissatisfaction were perceived as disrespectful and a source of time pressure that contributed to poor patient care. Meaningful use (MU), EHRs and desk work were identified as dissatisfiers twice as frequently as any other item. Physician word choice between EHR and desk work was often interchangeable. When desk work was performed exclusively on paper in the single practice without EHR, the tasks were the same tasks described in EHR work. Among participants who only used one term, MU or EHR predominated. Accordingly, we considered these convergent themes in this analysis.

Poor EHR usability is a major source of dissatisfaction.

All the clicks, all the different pages ... I feel like I've become a data input person, rather than an actual clinician. That's dissatisfying. [Entering] injections for instance is like 20 clicks [in the EHR]. (O)

Time clicking [through the EHR and entering or confirming normal values for every patient] is tiring and time consuming; but [you] have to remain hyper-vigilant in order to not miss an important abnormal value. (IM)

[What] I find frustrating in EHR ... is all of the checks and the boxes I need to click through and the warnings that pop up to say that you ordered a test and now you're ordering it again even though I'm ordering an occurrence three months from now ... [and] wait[ing] for the computer to catch up ... adds up to 30 minutes to my day. (IM)

MU-mandated patient portals or emails present a time burden and create tension between the needs of patients and the limits of electronic medical communication. Many times there is a disconnect between patient expectations on both timeliness and the ability of the physician to diagnose and treat via electronic communications.

[Emails] are a curse because a patient can message you five times a day, once a day, or once a year ... you go home and have 20 messages from patients. Yeah, you can answer them tomorrow, but then you are behind ... (IM)

The patient portal is being misused by patients who describe their symptoms and expect a response from the

doctor on what to do or what medication to take. [I advise] the patient that they need an appointment to be evaluated properly. (IM)

Maintaining regulatory and reimbursement compliance was seen to affect physician behavior and medical care broadly.

The EMR [has] turned a document that [transfers] medical information to physicians and nurses into something to justify billing to Medicare and BCBS. It's totally abdicated the responsibility to transfer what you did, what happened to the patient and, what you think ... [You have to complete their] review of systems ... you ask [about] cataplexy, they say no, click. I don't even know what cataplexy is, they don't know what cataplexy is ... (C)

Public and private payers were the second largest source of dissatisfaction requiring annoying desk work that consumed time unnecessarily.

I'd say prior authorizations kill us. Ugh, the amount of time we spend on prior authorizations. (IM)

One of the most frustrating things ... insurance companies will tell us 'we don't cover that medication' but then [they] never give us alternatives. So, we have to guess on prescriptions and turns out they don't cover that one either. Then next time we pick a different one and again they don't cover it. It creates a ton of work for the providers, nurses, and then it comes back to us, and then the chart needs to be pulled again by the receptionists. It's just many people having to look up the same information over and over again, which can be time-wasting. (IM)

Practice administration priorities were perceived as misaligned with physician and patient priorities. Descriptions of managers conveyed a sense of "us" and "them."

It's frustrating sometimes working with administration. I feel like I'm pulled in two different directions. (O)

The macro health care system itself was recognized by some as the overarching problem.

[Patients] want to know their doctor, they want their doctor to know them and they want to feel like they are not part of some big bureaucracy. And that is exactly the way we are headed.

Table 2. Summary of physician participants' suggested changes to reduce dissatisfiers

Dissatisfier	Suggested change
EHR/desk work	<ul style="list-style-type: none"> • Improve EHR usability and interoperability • Remove the MU mandates on EHRs
Payers	<ul style="list-style-type: none"> • Streamline and add transparency to authorizations or eliminate pre-authorization altogether • Unify regulatory and billing data requirements
Administration	<ul style="list-style-type: none"> • Increase staff support • Reallocate time demands
System	<ul style="list-style-type: none"> • Improve payment efficiency, including single payer schemes • Decrease regulation of controlled substances • Reduce liability exposures • Coordinate scope of work regulations

People being taken care of by systems, rather than [individuals] ... everyone starts practicing algorithm medicine and filling in check boxes ... you lose continuity of care ... it [is] very inefficient to manage patients as if they are new all the time. (C)

Patient non-compliance and bad care by other providers were cited as dissatisfiers as well.

Consequences of dissatisfiers

Consequences of these dissatisfiers emerged in almost all interviews and were seen to erode causes of satisfaction. Time pressure resulting from EHR/desk work and payers was cited twice as often as any other consequence was.

It's not like ... I can't handle paperwork or busy work or computer work per se, it's that it's a matter of time. (O)

[It's] all the things that get in the way of taking care of patients and using your [medical] skills. Part of that involves electronic medical records. (IM)

The negative effect on patient care is the most frequently cited consequence of the time pressure resulting from EHR/desk work. The tight relationship between time and patient care emerged in the inductive analysis.

The amount [of time] on paperwork and minutia [takes away from] taking care of patients—the actual patient care. (C)

Payer interference with patient care, typically associated with coverage decisions, was the next most frequently cited consequence of a dissatisfier. Physicians typically used narratives to explain the effects of payer interference.

[The insurance company] treats the patients very poorly ... it'll be two years soon and they won't authorize the surgery and the guy is completely crippled, he can't work, he lost his home ... they wouldn't even allow him to see the people I referred him to. So he wasn't getting any care, any steroid shots, any physical therapy ... he complained to someone that he was getting really sick of this, and they said 'oh, he's depressed now, he needs to see the psychiatrist, we are going to halt all treatment until he sees the psychiatrist.' The only psychiatrist they would allow took six months to schedule. So no more treatment 'till he sees the psychiatrist. (FM)

The perception of disrespect of physician expertise by payers, as conveyed through extra EHR documentation, paperwork and payer approvals, threaded through many interviews. Other negative sentiments described this work as mind-numbing, difficult, not fun and frustrating.

Right now I feel like I'm serving the electronic record ... (IM)
I don't like people who don't know anything [about clinical medicine] second-guessing my patient care. (FM)

Rich relationships between causes of dissatisfaction and their effects were found in physician interviews. For example, one physician cited a single dissatisfier, EHR/desk work, as the cause of three effects: time pressure, its limiting effect on patient care and feelings of disrespect.

The actual time we spend taking care of patients and actually making decisions about patient care is a tiny fraction among all the other garbage we have to do in terms of documentation, getting records and that is an absolute drag on the whole system. It makes it completely ineffective in delivering care and it's just not enjoyable. None of us went to medical school to be typists or stenographers and to just push around paper. I mean we want to take care of people. (C)

Another physician describes how two dissatisfiers, EHR/desk work and payers, affect patient care and erode opportunities to use expertise. These dissatisfiers oppose the humanistic and scientific satisfiers.

The biggest dissatisfaction is all the things that get in the way of taking care of patients and using your skills. All kinds of externally mandated requirements that ... don't translate into better patient care. Part of that involves the electronic medical record. Part of it involves Medicare rules and guidelines. Part of it involves insurance company mandated prior authorizations. (IM)

Participants' suggested changes to requirements affecting practice

All transcriptions that included suggestions to change requirements affecting practice were analyzed despite early saturation. In all cases the suggested changes directly addressed dissatisfiers described by that participant (Table 2). Recommended changes to EHR/desk work were to improve usability, enforce standards for interoperability, remove mandates (MU) and use team documentation to decrease burden.

[An] EHR that doesn't require clicking boxes ... patients [don't fit] check boxes. (C)

To ... mandate ... EHRs and not have a universal way for [them] to communicate from the beginning is an absolute disaster ... without a standard it's never going to work. (C)

Twenty-eight clicks to document a pap smear, that's longer than the procedure itself. Perhaps someone else could do that [clicking]. (C)

Recommendations for payers included streamlining pre-authorizations and providing a list of alternative approved treatment options when the prescribed option is not covered. In addition, some physicians wanted all pre-authorization to "just go away." Coding simplifications and decreases in billing documentation were also suggested.

They are all different ... [it's] trying for the nurses [to do all] the work with pre-certification.

... [An example is] the med my patient has taken for five years but is no longer preferred ... and they don't give me an alternative. (IM)

[Get rid of] prior auth for labs, meds ... anything! The physician knows what the patient needs and they should trust us to make the best decision. (IM)

[Reduce] the overwhelming complexity of coding ... it's too much, but you have to do it to get paid. (IM)

Participants gave recommendations for administrators that included increasing staff support (especially for team documentation), spending more time with each patient and allocating more time for academic pursuits. System changes were presented by some as the only way to improve matters. That is, discard the current system and start over.

One system, one payer ... [laughs] ... and I haven't been a one payer person in the past, but I do see that as a very reasonable solution. (IM)

[A single payer system] would take away a lot of the road blocks because ... a lot of them are financially based. [O]

Other suggested changes included decreased regulation of controlled substances, lower liability costs and coordination of scope of work regulations.

Review of tasks essential to a typical workday

Participating physicians and staff from all practices were interviewed about five administrative tasks typical during a workday. Individuals in various roles were recruited: 36 percent physicians; 29 percent certified medical assistants (CMA); 11 percent licensed nurse assistants (LNA); 5 percent receptionists, 4 percent practice managers; 3 percent billing specialists; and 12 percent “other,” none of which were EHR support staff. The tasks discussed included prior authorization, medication refills, between visit care, responding to and providing test results, and claims processing. The following qualitative review of these key administrative tasks presents the related processes required and their contribution to discontent and burden associated with medical practice. It also includes testimonials from the physician and staff participants, identified by their respective specialty (family medicine: FM; internal medicine: IM; cardiology: C; and orthopedics: O), that illustrate the often difficult reality of providing patient care while managing the abundance of administrative work.

Prior authorization

Health care payers require prior authorization for many treatment options including prescriptions, tests, therapies, surgeries and many others. Significant time is spent managing prior authorizations which requires navigation of multiple payers, inconsistent communication channels, variations in process and a host of other challenges associated with fulfilling the insurer requirements.

The process through which prior authorization is obtained involves coordination across multiple communication channels including phone calls, faxes and electronic notifications. Oftentimes multiple phone calls or lengthy conversations are required before approval or denial is received. Fax transmissions are unreliable and sometimes problematic, yet remain one of the main communication channels between providers and payers for prior authorization. While some practices have completely transitioned to electronic communications, others have been unable to make the technology work in their practice.

Electronic prior authorization—I live by them, I think they work and are a lot faster. Many times you have to go on the phone just because there might be pathways that are not available online so you have to speak verbally to a nurse. (IM)

Nothing is electronic. We tried to do the forms on the insurance sites. But there is no way to track it after it has gone off to them ... we just download and print forms. (O)

The time-intensive tasks involved in obtaining prior authorization are among the foremost complaints of those staff members that work on them and present a financial drain on the practice. Multiple participants noted spending 15 minutes to two hours on the phone attempting to obtain prior authorization. While some authorizations are straightforward and present few challenges, many are consistently difficult and require more time and resources.

Pre-authorizations for us definitely require a couple full-time people. It's a financial burden ... that's unnecessary for the physicians to have to pay. (FM)

Sometimes the nurses are on the phone ... 30 minutes to one hour. Sometimes they'll have spoken to four people before they speak to the person they are supposed to. (C)

The biggest concern for me is if the nurse is tied up on the phone for 20 minutes just to get another number to call. That is uncompensated time for her—there is no service, no benefit to us as a business to have our personnel tied up doing that work. (FM)

Physician referrals also sometimes require prior authorization by the insurance payers prior to the patient's visit, but differences across communication modes and requirements lead to patient confusion, wasteful paperwork and unnecessary cost.

What makes it more difficult [are] the ones that require electronic referrals to be done through website portals. The doctors just don't have time to do that and they are just not going to want to do it. Therefore, the patient walks out of the doctor's office thinking they have the correct referral and then they go to the appointment and there is nothing on file. (IM)

Several of the participants indicated peer-to-peer reviews required for prior authorizations present another set of challenges, sometimes leading to poor patient care, work-arounds, and even unnecessary tests and procedures. Burdens experienced with peer-to-peer review have driven some medical professionals to avoid them altogether.

Sometimes it has to go to a doctor peer-to-peer review to get something approved. We have finally gotten to the point where, since they want us to do all this other stuff before the tilt [table test] we are just starting to [do them first]. (C)

They will only do peer review the same day that you call. When the medical director calls, you have to go get the doctor out of the room and he is not necessarily amenable to that ... it can throw off the schedule. (O)

The [prior authorizations] that get to be more problematic are when they want a peer-to-peer. If it gets to that point where they want peer-to-peer discussion about the medication I'm not wasting my time anymore. I'll call the patient and tell them their insurance doesn't want to [approve] this. I won't do all that. It's a waste of my time—I just don't. (FM)

The processes associated with prior authorization for tests and specialist referrals can be different than those required for medications. Medications often need annual authorization, requiring staff to submit paperwork numerous times for the same patient and treatment. Other participants reported feeling forced to change a prescription or course of treatment based on what the insurance would or would not authorize.

Recently a man who had been using Cialis for his combination BPH and ED had been on it for three years, but it took us two and a half months to get it approved. That counts two letters, phone calls and innumerable attempts by [the insurance company] to deny it. (FM)

A doctor orders an MRI and [the insurance company] wants them to try physical therapy. [The patient] had to go through several weeks of grueling physical therapy, even though it was significantly clear they shouldn't be doing physical therapy. Other insurances want you to have the cheaper testing done first, like they want you to have an ultrasound done before you do a CT scan. (FM)

One person needed an inhaler, and the [insurance] company said 'try this one' so we did. When we complied and tried the other one, they said 'nope, he needs to try these other ones first.' It took about a month to get one that worked. Seven to 10 people were actually involved in trying to get that patient the inhaler. (FM)

Changes in the insurance companies' policies also created additional obstacles. Examples centered on changes in policy or formularies and their effects on medication authorizations.

The most difficult pre-authorization is when a patient has been on a medication for two years and it's now being denied. (O)

It's frustrating when a patient has been on a medicine for 20 years then all of the sudden it ... requires prior authorization and the insurance company wants to know why we didn't try five other things first. That's a pain. (FM)

Medication refills

The transition to electronic medical records presented changes in the way medication prescriptions were filled and refilled, for both the physicians and pharmacies. Some participants relayed positive experiences with electronic prescription systems.

Formularies can be frustrating because they are so variable. Now, with electronic records as soon as I try to prescribe a medicine [the system] will tell me if it's not in the formulary but [another] one is. That has made a huge difference. (FM)

E-prescribe is the best and quickest way to prescribe medications. And it is in the computer for everyone to see if it has been sent and has been pended. (O)

Despite the improvement experienced by some, other practices struggle when forced to coordinate prescriptions across multiple communication modes. Some practices and pharmacies have out of date EHR technology or haven't completely transitioned, and still manage some of these processes through fax and paper. Even practices with e-prescribing capabilities are sometimes forced to coordinate e-prescribing with paper and fax.

Most of our order refills are by paper because we haven't got our EMR up to date for prescription refills over the internet. (O)

We use an e-prescribing system, I like it. It's fast and easy as long as the medications are in the list, but once in a great while I get a failed e-prescription. I have to go back in and try again, and if it [fails] again I have to revert to faxing. (FM)

Sometimes we get [medication refills] through fax but we'll fax it back to the pharmacy and ask them to send it electronically. (IM)

Mediation between the patient and pharmacy presented other coordination challenges for some practices.

Med refills are probably about 25 to 30 percent of the calls we take. Usually it's because the patient came in and the pharmacy doesn't have their stuff yet or because they are going to be out soon and need a refill. (FM)

We have patients continually calling the pharmacy or the pharmacy telling us to get an early refill. Another one we deal with is if the patient is waiting at the pharmacy and they were seen like an hour ago, then immediately they go to the pharmacy. We'll get a call that 'the patient is here waiting, we don't have the prescription yet.' (FM)

Problematic medication refills were attributed to variability across pharmacies. Adaptive response to this burden led some practices to redesign workflows to reduce or remove medication refills from physician responsibilities.

[One pharmacy], because they are so big and get so busy, they sometimes lose the orders. [Another] calls us and questions every little thing... it's right there in front of [them]. (FM)

Many places [are] starting to delegate their refills to a lower level person so the doctor doesn't have to worry about it ... the doctor doesn't have time. You're asking the doctor for 15, 20 refills a day, all of a sudden that sucks up half an hour of their day. (IM)

Duplicate medication refill requests were attributed to technology and communication challenges. Patient misunderstandings, inconsistencies across communication channels and scheduling conflicts were all noted as participant frustrations related to processing medication refills.

Sometimes the patient calls and asks for a refill so [the nurse] puts the request in, and then the pharmacy sends it electronically and then I get both. There is no way around that. (O)

On a Friday at 5 p.m., we'll receive a paper request, which takes the 48 hours for us to respond. The doctor doesn't process it until they have more time. Saturday the pharmacy will send us another request, and then Sunday they'll

do it again, then Monday they'll do it again. Three times for one patient and by Monday you get a whole stack of duplicates. (FM)

We get duplicate prior authorization from pharmacies all day long. All the paperwork we get back bothers us and impacts our day. (IM)

Probably a third of the electronic refills that come in have already been done—and that's a huge inefficiency. That is on the pharmacy end, because their computers don't talk to each other. We get a lot of redundant requests that have already been responded to. (FM)

Prescribing controlled substances can be complicated and requires compliance with oversight guidelines. Although federal law allows for e-prescribing of controlled substances, state laws vary and may not reflect the same allowance. Because prescribers and pharmacists must comply with state laws, some are limited to manually writing and faxing prescriptions for these types of medications.

With controlled substances ... the hoops you have to go through for documentation and following appropriate treatment and guidelines—they are just more time intensive. (FM)

I use the electronic system except with controlled stuff, then [I] have to record it electronically but call it in or fax it, or the patient picks it up depending on the level. Controlled meds are a different thing because you cannot send them electronically. (FM)

If it's an anti-inflammatory kind of medication, really it's just a few clicks and then it's done. If it's a narcotic, I have to print the prescription, sign the prescription, call the patient back, arrange them to come pick it up or I have to mail it to them because I can't send it electronically. (O)

Medications used to treat a variety of conditions can also present challenges during the authorization process. Often insurance payers require additional steps to ensure the medication is not being utilized to treat a condition not covered in the patient's plan.

Certain drugs are more problematic and take more time. Testosterone—I order that for a patient and tell them 'don't expect this any time soon' because I know we're going to have to go through all these steps even though it is supposed to be approved. (FM)

Between visit care

Patient care doesn't stop when the patient leaves the physician's office. Many hours are spent following up with patients to ensure treatment compliance, schedule follow-up appointments, fulfill medication refill requests and answer patient questions. Patients may request care or coordination of care using any number of channels. Phone calls were consistently perceived as the most time-demanding by the physician and staff participants.

Patients mostly still use the phone to ask questions ... some a letter, sometimes a portal, some of it is people just walking into the clinic, sometimes it's a funny little hand written note on a napkin and sometimes it's an employer saying 'hey I need this.' (FM)

We get phone calls all the time with symptom complaints, for refills, primary care medicine needs. [There is] a little bit of back and forth sometimes with the phones ... sometimes it can take a couple days if you leave messages and they don't call back. The majority of our work is the phone calls. (C)

A lot of [the patients] use the phone and usually leave a voice message or get in contact with me, but some of them use the portal to ask questions or get a prescription refill. (O)

Some practices have implemented helpful systems to help field calls and incoming requests through online portals or emails. Others have not. Some practices are so overextended that between visit care is simply not a priority.

We get questions usually as phone notes or emails through the portal. Rarely I'll talk to them if they call the first time. We have a triage system and if its urgent they'll run it by the physicians. (FM)

I'm much more comfortable working with patients virtually. I try to minimize how often I need to see the patient. And for a lot of them it's easier for them to do it virtually. (IM)

The average full-time doctor gets 80-100 messages in their basket ... I worry [that] we're still relying on the very manual method of the doctor review. We haven't created a system that really thinks like a doctor and supports the doctor in that workflow. (IM)

We probably don't do as much between visit care as we probably should ... if we had more patients on the patient portal that may be an easier thing to do. (FM)

Certain tasks cannot be delegated and still fill a notable portion of physician time dedicated to between visit care. Particular requirements of school and employer forms, test results and patient questions require direct physician review.

Sometimes I get a wacky employer form, school related stuff, Boy Scout forms or forms for sports at school. Medication forms for kids who need instructions for the nurse at school to administer them come up a lot. Everyone's got their own forms and policies, so you have to just play the game with whoever it is and do what they want. (FM)

Test results

A relatively small but important portion of the medical staff's workday is spent providing test results to patients. The participants in this research indicated that most test results are straightforward and do not take a lot of their time, but several discussed challenges that made the process of providing *abnormal* test results more difficult and time consuming.

I usually use letters to communicate results. I rarely call patients with results unless it is significantly abnormal like if it is something higher risk and I don't want it to be missed. (FM)

I do not pass off really abnormal, dangerous, sometimes very difficult results from testing. A patient deserves a call especially if it is anything but normal. Sometimes you call them and ... sometimes the nurse conveys the message to them that I want to talk about it and [to] please schedule an appointment. (FM)

A common theme among the discussions about test results was the amount of time spent making phone calls. The majority of the participants indicated some amount of phone calls to patients or labs is necessary in obtaining and delivering test results. Several specifically remarked on the potential for excessive numbers of phone calls required to complete one task.

Playing phone tag and not being able to reach a patient when their results are abnormal, spend[ing] two days trying to get back and forth with a patient to talk to them ... that just delays their care that much longer. (C)

I have to call the patient which can take one phone call or three phone calls. Sometimes you catch the patient sometimes you don't. A CAT scan could take 20 minutes by the time I get the image, look at the image, call the patient a couple times ... it can take quite a while. (O)

It was noted that some procedural issues contribute to the extra time burden associated with providing test results.

Sometimes [the x-ray] is not there at all and then I have to have my MA call the hospital or wherever it was done and have it sent over electronically so it comes up on our x-ray machine ... so that's part of the thing that slows the day down. (O)

I have our medical assistants print off [studies] and put them in paper form in front of the chart so we're not wasting time trying to look through the computer system to find it. There are discrepancies in terms of our staff not filing things in the correct place. Unfortunately half the time it's not where it should be so we got fed up. (O)

Claims processing

The payment of patient insurance claims typically involves several processes that require coordination between several phone calls, faxes and other communications to navigate the different insurance payers. The participants in this

research indicated some insurers are consistently easier to work with than others, and some are notoriously complicated. Variability across insurer technology, procedure and coverage all contributed to the burden of claims processing.

Claims processing is about 20 percent of my work. Dealing with the insurance companies, it's hard to get a straight answer—you call different representatives from the same company and get different answers to problems. (FM)

[Insurance] credentialing takes too long, [it's] a big issue. New providers come in and ... you have patients and sometimes you don't have a choice but to let them see that doctor. Not all insurance companies will go back retroactively and [pay] those claims so you end up losing money. (FM)

The processes associated with claim payment can also confuse patients. Specifically noted by multiple participants were wellness physicals and seemingly related procedures that may not be covered by insurance.

Wellness physicals are a big problem because a lot of insurances have to cover them but patients don't understand that a problem listed in their labs can no longer be coded as 'wellness physical.' The wellness issue is our biggest problem—and patients not understanding. (FM)

Discussion

This study adds qualitative context to the quantitative study of time spent by ambulatory physicians during and after office hours.¹ It also suggests that the scientific expertise and compassion instilled during training remain important throughout a lifetime of patient care. Physicians find satisfaction in providing good patient care; physicians find dissatisfaction with work that consumes an abundance of time, interferes with patient care, and conveys disrespect of their expertise. These findings triangulate and are consistent with those in other qualitative studies¹² and quantitative surveys addressing physician satisfaction and workforce sustainability.^{6-8,13} Dissatisfactions reflect recently described estimates of administrative time and cost burdens on physicians.¹⁴⁻¹⁶ Satisfaction findings are consistent with prior studies linking physician satisfaction to the ability to provide quality care⁴ and strong patient-physician relationships.¹³

EHR/desk work is by far the leading dissatisfier, consistent with a growing gap between physicians and information technology advocates.¹⁷ Poor usability and the use of the EHR as a surveillance tool for physician work are subcategories of this dissatisfaction. As one physician noted, "many physicians feel as though the EHR has been weaponized against them."¹⁸ These themes are particularly concerning given major quantities of time and resources spent on quality reporting and other administrative work.^{16,19} Moreover, studies have shown that increased numbers of EHR functions, especially computerized physician order entry, were associated with high levels of primary care physician stress and burnout.^{20,21}

Payers are the other significant dissatisfier. Physicians are concerned about time, costs, and harm to patients as a result of prior authorization requirements and denials of

care, and express frustration with increasing surveillance through “box ticking.” These themes were also identified in a systematic review of international pay-for-performance schemes.^{22,23} The direct observation study of physician work during clinical office hours was not constructed to capture physician time spent on insurance issues within the EHR,¹ which could under report time spent on insurance-related tasks. Moreover, these interviews may reflect physician cognitive and emotional resources devoted to payer issues, which may increase the burden more than just its impact on time.

Administrative dissatisfiers varied and generalizations were limited given the wide range of settings and management frameworks. However, physician-administration partnerships built on respect and mutual goal alignment were the strongest predictors of physician commitment to a practice or system.¹³

Emergent inter-relationships indicated that dissatisfiers, such as EHR/desk work, interacting with payers, and maintaining regulatory and reimbursement compliance, consume time and constrain delivery of good patient care. Yet, delivering good patient care fulfills physicians. This is internally consistent; the consequences of dissatisfiers directly erode sources of satisfaction. Coinciding feelings of disrespect further diminish work satisfaction. The participants’ suggestions for change mirrored previous suggestions for improvements in EHR interoperability^{16,24} and usability.²⁴⁻²⁶ Others suggest reduction or uniformity across regulatory and administrative requirements.

Conclusion

In 1927 Francis Peabody instructed medical students, “the treatment of a disease must be completely impersonal; the treatment of a patient must be completely personal.”²⁷ Our study suggests that nearly a century later physicians are most satisfied when following Peabody’s guide, including both scientific means to treat disease and thoughtful caring relationships with patients. Conversely, physicians are dissatisfied when these core values, the soul of medicine, are compromised.

A striking observation of this research is the wide variation of communication channels, processes, workarounds and utilization of technology. The staff members from each practice described multiple channels of communication

The close inter-relationship between administrative (regulatory and billing) time burdens and effects on patient care is logical given the finite nature of time. The study and science of human factors teaches that time constraints in complex socio-technical systems require workers to adapt their work and tasks. In these practices, administrative tasks are prioritized through forcing functions (e.g., hard stops in computers), potent disincentives (e.g., non-payment if reports are incomplete) or mandated encounter time per patient. Consequently, as physicians cannot alter or adapt these administrative tasks, then other work, such as patient care, is forced to adapt. Physicians intuitively manage risk and benefit decisions, and adapt patient care to time constraints. However, if time becomes *too* constrained, physicians may feel they can no longer practice rigorous medical science, and their humanism may be compromised. When fundamental sources of satisfaction erode, work dissatisfaction can be anticipated.

Our study is subject to a number of limitations. All practices were recruited through state medical societies. Participation was voluntary and subject to self-selection bias. Of note, none of the participating practices had undergone recent administrative changes, and participants were experienced clinicians, not recent graduates. No practices were in the midst of a meaningful use EHR transition and none of the participants were novice EHR users. Results may differ for practices or participants closer to an EHR implementation or experiencing other major practice changes.

with pharmacies, insurance payers and patients. Although many practices have established workarounds to bypass difficult processes, the vast majority expressed some level of dissatisfaction with the burden of coordinating these current communication methods. Even more remarkable is the lack of innovative and sustainable solutions to the gaps in communication and process. The workarounds often involved resorting to fax machines, paper pads or sticky notes, which offer virtually no security and have little presence in most other modern industries. These challenges provide more evidence supporting the need for standard, system-wide processes and consistent, modern methods of communication between physicians and their staff, health plans, patients and pharmacy professionals.

Physician professional satisfaction is dependent on many factors, but ultimately rooted in the individual physician's ability to provide high-quality patient care. The innate desire of physicians and health care workers to treat and care for patients is, by itself, not enough. The acknowledgement and study of the administrative and operational tasks that burden a practice staff are important steps in improving and reforming health care. High-quality patient care and professional satisfaction require a system that works *for* the health care team, not *against* it. This review illustrates that, to reclaim a health care system that inspires physician satisfaction, change is needed. Furthermore, the participant testimonials indicate clearly that the health care community is ready for it.

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References

1. Sinsky C, Colligan L, Ling L, et al. Allocation of physician time in ambulatory practice: A time-motion study in four specialties. Submitted for publication.
2. Corbin JM, Strauss A. Grounded theory research: Procedures, canons, and evaluative criteria. *Qual Soc.* 1990;13(1):3-21.
3. Linn LS, Yager J, Cope D, Leake B. Health status, job satisfaction, job stress, and life satisfaction among academic and clinical faculty. *JAMA.* 1985;254(19):2775-82.
4. Linzer M, Konrad TR, Douglas J, et al. Managed care, time pressure, and physician job satisfaction: results from the physician worklife study. *J Gen Intern Med.* 2000;15(7):441-50.
5. Landon BE, Reschovsky J, Blumenthal D. Changes in career satisfaction among primary care and specialist physicians, 1997-2001. *JAMA.* 2003;289(4):442-9.
6. Friedberg MW, Chen PG, Aunon FM, et al. Factors affecting physician professional satisfaction and their implications for patient care, health systems, and health policy. Santa Monica CA: Rand Corporation; 2013.
7. Shanafelt TD, Hasan O, Dyrbye LN, et al. Changes in burnout and satisfaction with work-life balance in physicians and the general US working population between 2011 and 2014. *Mayo Clin Proc.* 2015;90(12):1600-13.
8. Dyrbye LN, Varkey P, Boone SL, Satele DV, Sloan JA, Shanafelt TD. Physician satisfaction and burnout at different career stages. *Mayo Clin Proc.* 2013;88(12):1358-67.
9. Lapan SD, Quartaroli MLT, Riemer FJ, eds. *Qualitative Research: An Introduction to Methods and Designs.* San Francisco CA: Jossey-Bass; 2012:84.
10. Bradley EH, Curry LA, Devers KJ. Qualitative data analysis for health services research: developing taxonomy, themes, and theory. *Health Serv Res.* 2007;42(4):1758-72.
11. Cohen LG, Sherif YA. Twelve tips on teaching and learning humanism in medical education. *Med teach.* 2014;36(8):680-4.
12. McAlearney AS, Hefner JL, Sieck CJ, Huerta TR. The journey through grief: Insights from a qualitative study of electronic health record implementation. *Health Serv Res.* 2015;50(2):462-88.
13. Karsh B, Beasley JW, Brown RL. Employed family physician satisfaction and commitment to their practice, work group and health care organization. *Health Serv Res.* 2010;45(2): 457-75.
14. Chien AT, Song Z, Chernew ME, et al. Two-year impact of the alternative quality contract on pediatric health care quality and spending. *Pediatrics.* 2014;133(1):96-104.
15. Korenstein D, Duan K, Diaz MJ, Ahn R, Keyhani S. Do health care delivery system reforms improve value? The jury is still out. *Med Care.* 2016;54(1):55-66.
16. Casalino LP, Gans D, Weber R, Cea M, et al. US physician practices spend more than \$15.4 billion annually to report quality measures. *Health Aff (Millwood).* 2016;35(3):401-6.
17. Shaha JS, El-Othmani MM, Saleh JK, Bozic KJ, et al. The growing gap in electronic medical record satisfaction between clinicians and information technology professionals. *J Bone Joint Surg Am.* 2015;97:1979-84.
18. Written communication, Gerald Maccioli, MD. March 16, 2016.
19. Woolhandler S, Himmelstein DU. Administrative work consumes one-sixth of U.S. physicians' working hours and lowers their career satisfaction. *Int J Health Serv.* 2014;44(4):635-42.
20. Babbott S, Manwell LB, Brown R, et al. Electronic medical records and physician stress in primary care: results from the MEMO Study. *JAMIA.* 2014;1(21):100-6.
21. Shanafelt TD, Dyrbye LN, Sinsky CA, et al. Relationship between clerical burden and characteristics of the electronic environment with physician burnout and professional satisfaction. *Mayo Clin Proc.* 91(7):836-48.
22. Steel N, Willems S. Research learning from the UK Quality and Outcomes Framework: a review of existing research. *Qual Prim Care.* 2010;18(2):117-25.
23. Ryan AM, Damberg CL. What can the past of pay-for-performance tell us about the future of value-based purchasing in Medicare? *Healthc (Amst).* 2013;1(1-2):42-9.
24. Blumenthal D, McGinnis JM. Measuring vital signs: an IOM report on core metrics for health and health care progress. *JAMA.* 2013;313(19):1901-2.
25. Hsiao CJ, Hing E. Use and characteristics of electronic health record systems among office-based physician practices: United States, 2001-2013. *NCHS Data Brief.* 2014;(143):1-8.
26. Ratwani RM, Fairbanks RJ, Hettinger AZ, Benda NC. Electronic health record usability: analysis of the user-centered design processes of eleven electronic health record vendors. *JAMIA.* 2015;22(6):1179-82.
27. Peabody FW. The care of the patient. *JAMA.* 2015;313(18):1868.