

ORIGINAL ARTICLE

Clinician perceptions of electronic health record and email nudge interventions to prevent unsafe opioid prescribing: A qualitative study

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ABSTRACT

Objective: We aimed to understand clinician perceptions of nudge interventions designed to prevent unsafe opioid prescribing for acute pain in primary care.

Design: Semistructured interviews were conducted.

Setting: Forty-eight practices across three healthcare systems were included.

Participants: Primary care clinicians who were exposed to nudge interventions as part of a randomized clinical trial were included.

Interventions: Intervention arms included an electronic health record alert upon new opioid prescribing either alone or with one or both nudge interventions (written opioid justification and/or monthly clinician comparison emails).

Main outcome measures: We used conventional content and thematic analysis to identify themes related to clinician perceptions of nudge interventions and the opioid epidemic.

Results: We conducted and analyzed 77 clinician interviews. Clinicians voiced favorable impressions of both nudge interventions, but they did not feel the nudge interventions had a direct impact on their own prescribing of opioids, perhaps due to low prescribing secondary to other opioid interventions. Clinicians felt interventions should continue to assist high opioid prescribers.

Conclusion: Nudge interventions are favorably perceived by physicians to be an additional option in the current landscape of interventions to prevent unsafe opioid prescribing for acute pain in the primary care setting.

BACKGROUND

Electronic health record (EHR)-based clinical decision support (CDS) alerts are widely used to assist clinicians by providing meaningful, patient-specific information at the appropriate time in the patient care process.¹ These types of alerts have been used in multiple healthcare settings with various levels of success.² Recently, EHR-based CDS has seen increased use in practice, yet this also has led to alert fatigue and contributes to clinician burnout,

thereby limiting the magnitude and durability of effectiveness.^{1,3} Interventions based on behavioral economic principles, such as nudge interventions, may facilitate decision-making by integrating into the usual workflow of clinical care and maintain clinician choice.

In clinical medicine nudge interventions, those that influence behavior by offering suggestions tied to evidence-based guidelines without limiting choice, are being used to influence clinician prescribing decisions in various disciplines such as

infectious disease and pain medicine.⁴⁻⁶ As of 2020, 39 studies reported used a variety of nudge interventions including information framing and default options and enabling choice among others, with effectiveness achieved in 73 percent of nudge interventions.⁷ In 2022, we demonstrated that the combined use of two distinct EHR and email nudges delivered among patients with acute musculoskeletal pain or nonmigraine headache seen in primary care resulted in significant reductions in new opioid prescribing.⁸

Despite the success of nudges in healthcare, little is known about physicians' perceptions regarding nudge interventions. Given the limited qualitative evidence on clinicians' view of nudge interventions, we aimed to understand nudge interventions to prevent unsafe opioid prescribing in the setting of primary care-based acute pain management. Additionally, we aimed to examine how these interventions acted within the context of other deployed opioid-directed interventions.

METHODS

Study design

We conducted a qualitative descriptive study to understand clinician perceptions of nudge interventions.^{9,10} Eligible clinicians from 48 primary care clinics across three healthcare systems (University of Pittsburgh Medical Center [UPMC], Geisinger Health, and University of Utah Health) were exposed to nudge interventions as part of a pragmatic multi-site cluster-randomized clinical trial (ClinicalTrials.gov ID: NCT03537573). This study compared nudge interventions to reduce unsafe opioid prescribing among 22,616 opioid-naïve (no opioids prescribed in past 12 months) patients with acute musculoskeletal pain or nonmigraine headache in primary care from January 2018 to January 2020. The full methods and results were published separately.⁸ Briefly, at the time of new opioid prescribing for patients with primary care visits for new pain, all clinicians received an EHR alert that included a text guideline for safe prescribing and an order set promoting nonopioid management for acute pain (guideline). There were also two nudge interventions: (1) *Justification*: Clinicians were asked to provide a written justification for opioid prescribing if they chose to proceed with the opioid order; and (2) *Comparison*: Clinicians received monthly individualized comparison emails

of opioid prescribing across the participating clinics within the same healthcare system. Clinicians were randomized to receive the guideline only, or one or both of the nudge interventions. The main outcomes demonstrated that clinicians who received both nudge interventions had a significantly lower opioid prescribing rate compared to the guideline-only group (adjusted odds ratio [OR] 0.44; 95 percent confidence interval [CI] 0.22-0.87; $p = 0.018$).⁸

Data collection

A total of 525 primary care clinicians in the main study interacted with at least one qualifying patient participant during the study period. However, we only invited the 374 clinicians (UPMC: 1, Geisinger: 105, Utah: 98) who were clinically active at the participating practices at the time of trial initiation in Fall 2018 to participate in the qualitative interviews. We restricted the qualitative interviews to this group in order to focus on clinicians who were exposed to the nudge interventions over the same time period. We began inviting clinicians for the semistructured qualitative interview after the nudge intervention period ended, with recruitment occurring from January 2020 to May 2020. This prevented the qualitative interviews from contaminating or influencing clinician decision-making during acute pain care episodes but still be recent enough to assess attitudes about the nudge interventions. Interested participants provided consent online and were referred to the interviewer for scheduling.

Data source

An interview guide (Appendix) was developed by the qualitative methodologist (MH). The interview guide focused on topics and questions identified by the team of investigators as relevant to understanding participants' experiences of the trial interventions, the opioid epidemic more broadly, and additional opioid-prescribing interventions they might have experienced at the same time as the trial. The interview script began with general, open-ended questions that allowed the interviewee time to respond with as little prompting as possible; we then asked follow-up questions if something was unclear, or to prompt discussion of a facet of the topic that did not arise spontaneously in the interviewee's response. A set of optional probes was included in each section of the interview script, but

the interviewer also was empowered to ask relevant follow-up questions not included in the guide, if necessary, and to adjust wording if individual words were confusing or distracting to the individual interviewee. The guide was reviewed by the trial's Stakeholder Advisory Committee, which consisted of pain specialists, primary care clinicians, patients with lived experience, patient advocates, informaticians, health insurance representatives, and health system executives, and reviewed by clinicians not enrolled in the trial to ensure that the questions were relatable to clinicians and contained sufficient open- and close-ended prompts. Participant interviews were conducted via Zoom® to maximize convenience. All interviews were conducted by a single, trained qualitative interviewer (BK). During the data collection period, BK debriefed preliminary interview findings with the rest of the study team. Interviews were recorded and transcribed verbatim, with identifying details redacted.

Data analysis

Data were analyzed using qualitative description, which seeks to describe, understand, and interpret participants' experiences without abstracting to the level of social theory.^{9,10} Our iterative analyses followed established procedures for thematic analysis, including review and coding of data for organization, and the identification of themes, or patterns, in the coded data.^{11,12} The interviewer for the project served as the primary coder and analyst (BK). Transcripts were reviewed by the primary analyst and the qualitative methodologist (MH) on the project in order to produce an inductively derived codebook, composed of codes and concepts that were identified based on the content of the interviews. The resulting codebook was then used to code the interviews with the assistance of Atlas.ti 8 coding software. To ensure consistency in coding, two experienced qualitative coders (BK and RW) coded 25 transcripts and measured intercoder reliability using kappa statistics. The average κ score was 0.68, indicating strong agreement, but just below the threshold considered acceptable, ie, 0.7 or higher.¹³ In response to this, the coders fully adjudicated their coding, clarified code definitions and rules, and coded an additional 10 transcripts, at which point the average κ score was 0.72. The primary coder then coded the remaining 42 transcripts independently. Once coding was finalized,

the primary coder reviewed the coding to conduct both content and thematic analyses. The content and thematic analyses were presented to the principal investigator and the study team for review and refinement, and to help the qualitative team contextualize the findings.¹⁴ The interview sample was designed so as to be very likely to reach thematic saturation, ie, the point at which additional interviews do not yield additional insights, which typically occurs within 12-20 interviews within a homogenous sample.¹⁵ We aimed to conduct at least 20 interviews per study site. We additionally determined that saturation had, in fact, been reached via discussion with the interviewer as interviews were conducted; by the end of data collection, the interviewer noted that he was not hearing new information when conducting new interviews. While we interviewed all physicians willing to be interviewed, we felt that saturation had been reached prior to the conclusion of interviewing.

The Institutional Review Boards of all participating institutions approved the study. This study is reported in accordance with standards for reporting qualitative research reporting guidelines.¹⁶

RESULTS

Seventy-eight interviews, of 374 contacted for the interviews, were completed between May and August 2020 with clinicians from UPMC (n = 42), Geisinger (n = 9), and Utah (n = 26). One transcript was unavailable for analysis. All clinicians received the guideline intervention either alone (n = 21), with opioid justification (n = 13), clinician comparison (n = 24), or both (n = 18). Our sample consisted primarily of physicians (76/77, 99 percent) averaging 47 years of age, with 16 years in practice, and 31 clinic hours weekly (Table 1).

We identified four major themes: three regarding clinicians' experiences with the intervention(s) and an additional theme about other interventions effecting opioid prescribing behaviors.

Theme 1: Clinicians had a generally favorable impression of the guideline and nudge interventions they received

Most clinicians (n = 48/77) regarded the guideline (with or without nudges) as a useful reminder: "I think it's good because it makes us think twice . . . 'Is this really useful in this particular patient population or do you have a different option?'" (Participant

Table 1. Characteristics of clinician participants

	Overall	Guideline	Opioid justification	Clinical comparison	Both opioid justification and clinical comparison
#Clinicians contacted	374	72	89	102	111
#Participating clinicians with analyzed interviews	77 (21)	21 (29)	13 (15)	24 (24)	19 (17)
Age, mean (SD)	47 (9)	46 (7)	48 (8)	47 (10)	47 (13)
Sex = male	37 (48)	15 (71)	7 (50)	7 (30)	8 (44)
Clinician type					
Physician	76 (99)	20 (95)	13 (100)	24 (100)	19 (100)
CRNP	1 (1)	1 (5)	0 (0)	0 (0)	0 (0)
Years in practice, mean (SD)	16 (9)	15 (8)	18 (7)	17 (11)	16 (11)
Clinic hours/week, mean (SD)	31 (10)	36 (3)	32 (13)	29 (10)	27 (12)

Data cells are n (percent) unless otherwise specified.
CRNP: certified registered nurse practitioner; SD: standard deviation.

11, Site 1). Of those receiving the clinician comparison, about half (n = 23/43) commented on the benefit of knowing where they stand in prescribing compared to their peers: “There’s something nice about seeing where you land in midst of everyone else in terms of how are other people are best trying to manage pain” (Participant 26, Site 2). Several clinicians reported being on the lower end of prescribing in the clinician comparison and felt good that they prescribed relatively less opioids, with 16 clinicians feeling affirmed in their decision-making: “To me, it’s like a reminder that, ‘Hey, you’re doing ok, keep it up’” (Participant 34, Site 1). Positive comments for the justification revolved around being able to document patients’ contraindications and/or treatment failures that ultimately led to their decision to prescribe opioids:

Improvement in documentation is good . . . usually, I’m trying to explain either why another medication might not be appropriate . . . or just that I deem the patient low risk for having you know an adverse outcome. – Participant 2, Site 1

Justifications also served as an added safety measure by providing extra documentation as to why a prescription is appropriate for a particular patient: “I feel like it’s extra documentation of why I feel

like it’s appropriate and that feels more safe from a liability stand point” (Participant 42, Site 2).

Theme 2: Clinicians did not perceive that nudge interventions changed their behavior

While the majority of clinicians described the interventions in a positive light, they generally believed that it had minimal-to-no effect on their prescribing practices (n = 51/77), although one clinician reported curtailing his/her own opioid prescribing by one-third:

If it pops up, it’s not like I’m changing my mind and saying, ‘Oh, maybe I won’t prescribe opiates, because this popped up.’ But it does make me consider that a little strong-more strongly. – Participant 34, Site 2

The lack of perceived changed behavior for the guideline among these clinicians was most frequently attributed to already having adopted best practice guidelines or “not freely [prescribing] opioid pain medicines for acute pain” (Participant 6, Site 1). Overall, these clinicians reported they would “already check off the boxes” (Participant 19, Site 3) mentally when prescribing, and therefore did not require the guideline. Additionally, only a few clinicians (n = 11) reported that any

intervention altered their opioid prescribing in real time; for example, one clinician reported, “Changing my prescription to a Gabapentin based on some recommendation that popped up . . . And so, it did change it, but it wasn’t a frequent occurrence” (Participant 74, Site 3). Of those 11 clinicians, three received only the guideline; two received the justification; three received the clinician comparison; and three received both interventions. Along with these perceptions, some reported feeling irritated due to the frequency of alerts and annoyed and overwhelmed and already overworked when having to complete the additional intervention steps, which can “add up to hours of extra work” (Participant 21, Site 1).

The majority of clinicians ($n = 33/43$) who received the clinician comparison believed the emails had minimal-to-no effect on their prescribing behaviors. Similar to the guideline, clinicians reported that they either already follow best practices or do not prescribe opioids often enough to see utility in the comparison, “I mean, I’ve already got a very low opioid prescribing rate to begin with. So no, it doesn’t make a difference to me” (Participant 62, Site 2). For those in the justification group, clinicians expressed frustrations surrounding the inability to convey “the full details” as to why they are prescribing pain medications due to time constraints: “You cannot document the full details why exactly you prescribe the pain medicine . . . it is time consuming to write the full reasoning, why you went to this route” (Participant 10, Site 1). Clinicians also commented on how the additional justification step could be bothersome in addition to the guideline. Furthermore, almost half of clinicians in the justification arm ($n = 20/43$) also reported minimal-to-no impact on prescribing, stating that “it’s [already] part of the thought process when you decide to write opioids” (Participant 21, Site 1).

Theme 3: Clinicians thought the nudge interventions should continue and/or would be “useful to others”

While clinicians frequently described frustrations with alert fatigue and a minimal-to-no impact on prescribing behavior, most said that the interventions should continue ($n = 16/77$), would be “useful to others” ($n = 15/77$) or both ($n = 27/77$). In several instances, clinicians expressed positive thoughts toward the intervention’s value for other clinicians,

even if they felt it was not necessary or helpful for themselves:

I don’t think that really applies to me since my numbers are always non-existent . . . I do think that it would be helpful for somebody who needed it to be brought to their attention. – Participant 5, Site 1

Clinicians who were not prescribing pain medications on a regular basis commented on how a given intervention may be useful for other clinicians who may need an opportunity to take a pause after seeing information related to opioid prescribing practices. One clinician noted, “I think an email is, is a good way to quickly flash that information and if it’s something that needs you to ponder on a little more than I guess you could look into it more” (Participant 5, Site 1). One participant in particular saw benefit in the interventions for other clinicians who are prescribing more opioids because it may be more impactful for them compared to a clinician who is not routinely prescribing pain medications:

I think they should continue for clinicians that are prescribing more than one or two, new prescriptions per month. Because I think they might have more of an impact. – Participant 58, Site 2

While the majority of clinicians from all intervention arms reported that their intervention should continue or would be useful to others, this perspective was most strongly expressed among clinicians who received nudge interventions (justification [12/13, 93 percent], comparison [20/25, 80 percent], and both [14/18, 77 percent] vs guideline [13/21, 62 percent]). Many clinicians who reported that writing justifications would be useful for others either noted newer physicians or those who may over prescribe would benefit.

Because the interventions were viewed positively overall, and also as not impacting behavior due to already following best practices, participants offered few suggestions for improvement. Suggestions that were offered included making alerts easier to interact with by providing a check list of options with which to auto-populate the written justification, inclusion of prescribing numbers from the email intervention in annual quality reviews, and championing the use of the interventions from health system leadership.

Theme 4: Clinicians described numerous other interventions that occurred prior to or during the intervention period that affected their opioid prescribing as well

Many clinicians credited the state-run monitoring programs, including Pennsylvania's Prescription Drug Monitoring Program (PDMP) and Utah's Controlled Substance Database, with affecting opioid prescribing. Clinicians described the utility of checking their state's drug monitoring database as part of their toolbox for minimizing potential harms from opioid prescribing. These programs were seen as being essential to conducting proper due diligence in assessing patient histories and potential red flags for not only opioid addiction but diverting narcotics. Some clinicians highlighted these interventions as being the primary drivers of opioid prescribing change, because they allow clinicians to "look and track" patients who are using opioids inappropriately, or who may have been "shopping around." The clinicians clearly conveyed that checking the PDMP prior to prescribing has become the standard of care with the net effect of promoting rational opioid prescribing.

Insurance policy restrictions on opioid prescribing were also cited by many clinicians as being a significant intervention (n = 32/77):

A lot of our insurances that we're dealing with are limiting initial prescriptions of opioids to five days without requiring any prior authorizations . . . I think that, more than anything, has led to less prescribing of opioids overall. – Participant 45, Site 3

Mandatory continuing medical education (CME) on opioid prescribing best practices was also mentioned by prescribers at UPMC and Utah (n = 31/68). In addition, 54 (70 percent) clinicians mentioned the effect of legal guidelines, enforcement, and/or licensing on opioid prescribing practices, either their own or in medicine generally (n = 58/77). National guidelines including Centers for Disease Control and Prevention (CDC) guidelines for opioid prescribing were mentioned by several clinicians as being integrated into clinic and their own practice prescribing policy:

The practices have changed just alone with the CDC guidelines coming out . . . the clinic and the organization that I work for have

guidelines in place . . . which is based on CDC guidelines and then national guidelines as well for opioid prescribing. – Participant 34, Site 3

Many other interventions from individual practices, insurances, health systems, and state and federal governmental levels combined were mentioned to create a sense of public and professional scrutiny that curbed opioid prescribing during the intervention time period:

There's been a huge obviously public push to curve the use of narcotics that contributed to the epidemic of opioid crisis . . . it's become basically a pressure from professional organizations, governments, and everybody else to rethink before prescribing narcotics. – Participant 49, Site 1

DISCUSSION

We examined clinician perceptions of an EHR alert presenting a prescribing guideline and two nudge interventions (written justification and/or comparison email) aimed at decreasing unsafe new opioid prescribing in primary care for acute pain. Clinicians reported favorable impressions of both justification and comparison emails despite some frustrations seen across all interventions. Clinicians generally did not feel the nudge interventions have a direct impact on their own prescribing of opioids and yet felt the interventions should continue or would be valuable to other clinicians. Clinicians felt that opioid prescribing programs—eg, PDMP, insurance policies, and CME—external to the trial's nudge interventions had an important impact on prescribing behavior.

Our findings that clinicians perceived the nudge interventions not having a direct impact on opioid prescribing do not necessarily conflict with our trial's main finding of lower opioid prescribing when both nudge interventions, ie, justification and comparison, were used (adjusted OR 0.44; 95 percent CI 0.22-0.87; p = 0.018).⁸ Nudges may work on a subconscious level to influence clinician behavior and/or biases, and providers may not be aware of this disconnect between their perceptions and their changed behavior, ie, "Not Me!"¹⁷ Our findings comport with recent evidence from a systematic review suggesting most nudge interventions

are effective in optimizing medication prescribing.⁶ The systematic review examined 20 heterogeneous nudge interventions across 15 studies and demonstrated that 80 percent of the nudge interventions led to some level of improvement in prescribing in a variety of diseases. These findings suggest that well-positioned behavioral interventions can influence prescribing, even if this benefit was not perceived by participants in our study.

Surprisingly, most clinicians recommended continuation of the interventions either for themselves or for other clinicians who may benefit, despite nearly half perceiving no impact on their own prescribing. Clinicians may have a higher threshold for the burden of our study interventions due to the scrutiny and legal ramifications associated with opioid prescribing^{18,19} and, therefore, may be agreeable to continue a sometimes burdensome and often nonimpactful intervention. Our clinicians may also have been referring to the 1 percent of clinicians who prescribe nearly 50 percent of opioids when they referenced the interventions impacting “high opioid prescribers.”^{20,21} This intervention, therefore, could impact our clinicians not because of a direct impact on their prescribing but due to a possible downstream effect of less chronic opioid use. This could also curtail clinicians’ frustrations with managing chronic users whose opioid use started with a different clinician.^{18,19}

Generally, our providers had positive feelings regarding our nudge interventions, both the comparison email and written opioid justification. Similar nudge interventions have been implemented in other settings with studies framing information, as was done in our comparison email, being one of the most commonly used strategies. A synthesis of 22 studies, which used information framing, found 14 (64 percent) to have a statistically significant effect on behavioral change.⁷ Additionally, one study using a multitude of nudge intervention to decrease inappropriate antibiotic prescribing found that the provider comparison email had the greatest impact 12 months after the intervention was stopped.²² Few studies have qualitatively evaluated provider perceptions of nudge interventions. One study of an algorithmic-based nudge to improve early serious illness conversations by an oncologist found that the provider comparisons were a facilitator within the algorithm.²³ In contrast, a study conducted in Australia where provider comparisons were sent by the government to only high opioid prescribers

found that providers felt this was highly paternalistic and may impede patient care.²⁴ In our study, our interventions were favorably perceived and, given the low-cost of comparison emails and the promising quantitative impact, provider comparison emails appear to be an effective and acceptable nudge intervention.

The perceived lack of effect from our interventions was attributed by participants to either be due to already following recommended opioid prescribing practices or due to their own low levels of opioid prescribing. Our participants attributed their conservative prescribing practices to insurance-based, state, or national initiatives to reduce opioid prescribing. Most of these interventions were implemented between the height of opioid prescribing in 2012 and the decrease in opioid prescribing by 2020, suggesting an aggregate effect.^{20,21} Studies that have examined opioid stewardship interventions often examined multifaceted interventions or looked at outcomes like opioid-related harms rather than prescribing making it difficult to know the quantitative impact on the specific interventions named by our clinicians.²⁵ Our quantitative results indicated lower than anticipated baseline prescribing rate, which supports our clinicians reports that they are already prescribing opioids sparingly. This may explain the lack of perceived effect from our intervention.

LIMITATIONS

This qualitative study is strengthened by the inclusion of clinicians from three distinct healthcare systems that are geographically diverse but also has a few notable limitations. Although the analysis thematically grouped responses agnostic of health system or practice location, there is the possibility that regional differences in prescribing and practice may have affected clinician perceptions. A further exploration of responses by institution or practice was thought to be unnecessary considering response similarity from across sites, minimizing the effect of organizational culture. Although our sample size of 77 clinicians was relatively large for a qualitative study, it still represents only 23 percent of the invited clinicians, thus introducing potential selection bias. It is possible that the clinicians who opted to interview shared perspectives or characteristics that make them unique and perhaps view interventions more favorably than those who elected not to be interviewed.

CONCLUSION

EHR- and email-based clinician-directed nudge interventions are a low-burden mechanism well-received by clinicians practicing in primary care settings. Institution of nudge interventions within health systems should be considered within the context of existing initiatives aimed at addressing opioid prescribing.

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APPENDIX: SEMISTRUCTURED INTERVIEW GUIDE

First, tell me about how you typically manage patient complaints or diagnoses of new musculoskeletal pain or nonmigraine headache.

Optional probes

- What types of treatments do you prescribe for acute pain?
- When might you decide to prescribe an opioid for acute pain?
- Have your opioid prescribing practices for acute pain changed over time?

Now, I'd like to ask about some of the specific interventions you received as part of this study.

If provider received best practice alert and smart set

It is my understanding that you received a best practice alert and smart set when initiating a new opioid prescription for acute pain.

- Is this something that you have noticed?
- What is your opinion on the best practice alert?
- Do you think the alert has affected your opioid prescribing practices for acute pain at all? How so/why not?

If provider received written justification

It is my understanding that you have been prompted to enter a written justification when initiating a new opioid prescription for acute pain.

- Is this something that you have noticed?

- What is your opinion on writing the justifications?
- What sort of written justifications have you provided?, ie, what do you write in the text box?
- Are there any instances in which you have declined to write a justification? If so, do you remember why you didn't write one?
- Do you think writing justifications has affected your opioid prescribing practices for acute pain at all? How so/why not?

If provider received provider comparison emails

It is my understanding that you have received emails comparing your rate of opioid prescribing for acute pain to that of your colleagues.

- Is this something that you have noticed?
- What is your opinion on those emails?
 - How do these emails compare to emails based on PDMP data sent by the state of Pennsylvania? (*for UPMC and Geisinger practices only*)
- Do you think the emails have affected your opioid prescribing practices for acute pain at all? How so/why not?

Did any of these interventions ever affect your relationship with your patients? How so?

Going forward, do you think these interventions should continue? Why or why not?

Are there any changes that you would make to the interventions?

Do you think that your opioid prescribing practices for acute pain have changed at all since the fall of 2018 for any other reason?

Now, I would like to shift gears and talk about opioid prescribing in general.

What other interventions have you been experiencing around opioid prescribing while this study has been going on?

Optional probes:

- Insurer programs/interventions/rules?
- State programs/interventions/rules?
- Other guidelines or interventions?

Aside from these programs, is there anything else that affects your prescription of opioids?

Probes:

- Patient symptoms/preferences?
- Patient preference?
- Personal experiences with pain?

As part of this study, we have been finding lower rates of opioid prescribing for acute pain than we were expecting when we started the study. What are some reasons that you think that opioid prescribing rates are declining?

- Do you think that the declining rates of opioid prescription for acute pain are appropriate?
- Do you think that declining opioid prescription rates for acute pain affect patient care and quality of life? How so?
- Do you think that your opioid prescribing practices for acute pain affect your relationship with your patients? How so?

I would like to ask you one last question: Is there anything else about the current landscape of opioid prescribing in primary care that you think we should know?