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ORIGINAL RESEARCH

“It Sometimes Doesn’t Even Work”: Patient Opioid Assessments as Clues to Therapeutic Flexibility in Primary Care

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BACKGROUND: Physicians’ fear of difficult patient interactions is an important barrier to discontinuing long-term opioid therapy.

OBJECTIVE: To identify patient statements about opioids that indicate potential openness to tapering opioids or trying non-opioid pain treatments

DESIGN: This is an observational study of regularly scheduled primary care visits involving discussion of chronic pain management. A coding system to characterize patient assessments about opioids, physician responses to assessments, and patient-endorsed opioid side effects was developed and applied to transcripts of video-recorded visits. All visits were independently coded by 2 authors.

PARTICIPANTS: Eighty-six established adult patients taking opioids for chronic pain; 49 physicians in 2 academic primary care clinics

MAIN MEASURES: Frequency and topic of patients’ opioid assessments; proportion of opioid assessments classified as clues (assessments indicating potential willingness to consider non-opioid pain treatments or lower opioid doses); physician responses to patient clues; frequency and type of patient-endorsed side effects

KEY RESULTS: Patients made a mean of 3.2 opioid assessments (median 2) per visit. The most common assessment topics were pain relief (51%), effect on function (21%), and opioid safety (14%). Forty-seven percent of opioid assessments (mean 1.5 per visit) were classified as clues. Fifty-three percent of visits included ≥ 1 clue; 21% of visits contained ≥ 3 clues. Physicians responded to patient clues with no/minimal response 43% of the time, sympathetic/empathetic statements 14% of the time, and further explored clues 43% of the time. Fifty-eight percent of patients endorsed ≥ 1 opioid-related side effect; 10% endorsed ≥ 3 side effects. The most commonly endorsed side effects were constipation (15% of patients), sedation (15%), withdrawal symptoms (13%), and nausea (12%).

CONCLUSIONS: Patient statements suggesting openness to non-opioid pain treatments or lower opioid doses are

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common during routine primary care visits. Listening for and exploring these clues may be a patient-centered strategy for broaching difficult topics with patients on long-term opioid therapy.

KEY WORDS: primary care; chronic pain; opioid analgesics; health communication; doctor-patient relations; patient-centered care; tapering.

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INTRODUCTION

Increases in opioid-related overdose rates prompted a shift in clinical practice away from using opioids to treat chronic pain starting in the 2010s. Incident long-term opioid use (continuous use for ≥ 90 days) began to decline nationally after 2012. This decline accelerated after publication of new state and federal opioid-prescribing guidelines,^{1–3} however, prescribing for patients already on long-term opioids has declined more slowly.⁴ Primary care physicians and other generalists prescribe the largest proportion of long-term opioids in the USA^{5, 6} and so play a key role in decreasing or stopping long-term opioid therapy.

Primary care physicians cite fear of difficult or unpleasant interactions with patients and, most of all, patient resistance as barriers to stopping long-term opioid therapy or recommending non-opioid treatments for chronic pain.^{7, 8} Physicians have long stigmatized and complained about “narcotic seeking” patients who demand opioids.^{9, 10} Some patients do compulsively pursue opioids, yet emerging evidence indicates that long-term opioid therapy is associated with unclear clinical benefits and substantial side effects for most patients.^{11, 12} Research on how patients talk to physicians about opioids during primary care visits is needed to identify patient-centered strategies physicians can use to decrease long-term opioid therapy. Unfortunately, empirical research in this area is sparse.¹³

To shed light on this issue, we analyzed video-recorded primary care visits involving patients taking opioids for chronic pain and characterized patient statements that expressed attitudes or beliefs about opioids (i.e., *opioid assessments*).

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We then identified *clues*, the subset of assessments that indicated potential willingness to try non-opioid pain treatments or a lower opioid dose. Finally, we characterized physician responses to these clues and patient-endorsed opioid side effects. Patients' opioid assessments provide insights into their beliefs and attitudes about opioids, which, in turn, bear on their willingness to try lower opioid doses or non-opioid treatments. Prior research has highlighted the importance of attending to patient statements that provide clues about patients' social and emotional concerns, beliefs, and expectations.^{14–17}

Similarly, recognizing clues about patients' attitudes towards opioids is important for patient-centered pain care. Clues that convey potential willingness to taper or endorse opioid-related side effects constitute potential opportunities for physicians to further investigate patients' attitudes and, when warranted, to broach the subject of non-opioid therapies or lower opioid doses. Eliciting patients' attitudes and perspectives about opioids is particularly important when reducing opioid doses because federal guidelines do not support stopping or decreasing opioids without patient agreement.¹⁸ If patients frequently endorse opioid side effects or signal potential willingness to try non-opioid therapies, training physicians to recognize and respond to these statements could be a promising strategy for decreasing inappropriate long-term opioid therapy.

METHODS

We recruited patients and physicians from two academic primary care clinics at the University of California, Davis Medical Center in Sacramento, California. Eligible physicians were internal or family medicine residents who saw primary care patients at one of the study clinics and had completed ≥ 1 year of training. Eligible patients were adults who received care at a study clinic, were prescribed opioids (≥ 1 opioid dose per day for ≥ 90 days) for chronic musculoskeletal pain, reported at least moderate pain intensity (≥ 4 on an 11-point numeric rating scale), and indicated they were likely to discuss pain management during a scheduled clinic visit. Patients were excluded if they were receiving active cancer treatment or palliative care, spoke a language other than English during clinic visits, or were prescribed opioids by someone other than their primary care physician. The University of California, Davis Institutional Review Board approved this study.

Recruitment and Data Collection

We recruited physicians through e-mail invitations and clinic presentations. We recruited patients by reviewing clinic schedules of enrolled physicians to identify potentially eligible patients. A research assistant then contacted these patients either by approaching them in clinic waiting rooms or by mailing them a letter with a follow-up telephone call. Patients were limited to one study visit; enrolled physicians could see multiple study patients. Additional study details have been published previously.¹⁹ Physicians and patients were told that

the study goal was to learn more about how doctors and patients communicate about chronic pain in primary care.

Prior to each visit, a research assistant set up a video camera and backup audio recorder in the exam room to allow for recording without study personnel in the room. Visits were recorded between November 2014 and January 2016. Recordings were transcribed for analysis. Physicians completed questionnaires at enrollment. Patients completed questionnaires immediately before their study visits. In addition to participant demographics, patients reported their pain severity using the 3-item PEG scale.^{20, 21} A trained research assistant manually abstracted data on pain location and opioid consumption from patients' electronic visit notes, problem lists, and prior diagnoses using 9 pre-specified categories.¹⁹ One author (SGH) independently abstracted records for 23% of patients in order to check abstraction accuracy; he also reviewed and adjudicated ambiguous cases.

Coding System Development and Application

All authors met in person to identify opioid assessments and side effects and to develop the coding system for this analysis. We independently applied our draft coding system to 2–3 transcripts and then met as a group to compare results, discuss disagreements, and refine coding definitions. We repeated this process using additional transcripts until all authors agreed with and could reliably apply the coding system. Two authors (MG and SGH) then independently applied the final coding system to all transcripts; these authors met regularly to compare results and finalize coding for each transcript. Disagreements were resolved through discussion. The complete coding manual is included in the [online appendix](#).

Opioid Assessments. The unit of analysis for coding assessments was patient speaking turns. We defined opioid assessments as patient statements that explicitly expressed a positive, negative, or ambivalent stance about opioids or a particular opioid dose (e.g., "...these meds work for me"). Statements that expressed a stance about pain but not about opioids ("I have to take more Norcos in the winter when my pain is worse.") or that conveyed objective information ("I take 2 Percocets most days, but sometimes I take 4.") were not coded as opioid assessments.

Each identified assessment was assigned to 1 of 5 mutually exclusive topic categories: pain relief, function, safety, side effects, and identity. Next, patient assessments were categorized as being clues or not. We defined clues as assessments that expressed either (i) negative or ambivalent opinions about opioids' clinical benefits; (ii) concerns or fears about harms, risks, or side effects due to taking opioids; (iii) positive attitude towards a lower opioid dose; or (iv) resistance or ambivalence to a higher dose. Thus, not all negative opioid assessments were categorized as clues, because some negative assessments indicated a desire for higher opioid doses (e.g., "It's like it's just not quite enough"). All assessments that discussed side

effects (which detract from opioids’ clinical benefits) were coded as clues. These clues presented potential opportunities for physicians to explore patients’ attitudes towards opioids and, when warranted, discuss non-opioid therapies or lower opioid doses.

If an assessment was coded as a clue, we coded physicians’ immediate response into 1 of 3 mutually exclusive categories: no/minimal response, supportive/empathetic statement, or explore/expand on assessment. Table 1 shows definitions and examples of patient assessments, clues, and physician responses. Finally, we flagged patient assessments that occurred in the context of an ongoing, previously initiated opioid taper because we found that patient assessments in this context usually involved negotiating the logistics of dose decreases rather than substantive disagreement about the pain treatment plan.

Side Effects. The unit of analysis for coding side effects was the visit, because we sought to identify the number of different side effects patients endorsed regardless of how many times each side effect was mentioned. We developed a list of potential opioid-related side effects and risks based on our clinical experience and the existing literature. To be coded as an opioid side effect, patients had to explicitly endorse the side

effect or indicate concern about potential opioid-related harms (e.g., physiologic dependence). Side effects often, though not always, coincided with patient assessments. If an endorsement of a side effect included an opinion or judgment (e.g., “I don’t like what [the medication] does to the psyche”), that statement was also coded as an assessment and assigned to the “side effect” topic category. Endorsements of side effects that conveyed only objective information (e.g., “Norco does not help the constipation any.”) were coded as side effects but not as assessments.

Counts and descriptive statistics of the final coded data were calculated using Stata 15.1. As a sensitivity analysis, calculations were repeated, excluding visits that discussed an ongoing, previously initiated opioid taper. The number of opioid assessments, clues, and side effects per visit for patients who were versus were not already tapering was compared using Poisson regression with robust standard errors to account for clustering by physician.

RESULTS

Our final study sample comprised 49 physicians and 87 patients; 1 visit was not recorded due to technical problems, leaving 86 patients in the analytic sample. Table 2 summarizes participant characteristics. Patient’s mean pain severity (PEG)

Table 1 Definitions and Examples of Patient Opioid Assessments and Physician Responses

	Definition	Examples	
		Clue	Not a clue
Assessment topic			
Pain relief	Opioids’ impact on pain intensity	“[the medication] helps a little bit with the pain.” “[the medication] sometimes doesn’t even work.”	“this is helping me. It’s working for me.” “it’s 10 milligrams, and it’s not strong enough.”
Function	Opioids’ impact on ability to function/perform activities	“[I take] one. Because if I take two, I can’t function.” “ever since I went on the medication, it’s been harder and harder to relax.”	“I can’t do anything unless I have that pain medication.” “but boy, when I go down to that 30 [milligrams] and [the pain] just lights up and I—yesterday I could barely drive down here.”
Safety	Opioids’ impact on patient health or safety; including general concerns about opioid use	“if I have to take more I’ll be in serious trouble.” “no that’s too high—that’s too much”	“I’m not going to overdose [on pain medication].” “Norco is not addictive; it’s not addictive.”
Side effects	Unpleasant symptoms or risks of harm experienced by the patient due to opioid use	“I don’t like it, it’s horrible, drug withdrawals are horrible.” “with the higher strength, I get the brain fuzz that I don’t like.”	N/A—all side effects classified as clues
Identity	Opioid’s impact on patients’ sense of self or ability to fulfill social roles	“I’m in a constant war with myself when I take pain medication.” “I don’t like feeling – I like to stay in control of me.”	“I remember getting to a point in my own life saying this isn’t me.” [not coded as a clue because patient is discussing a remote historical event]
	Definition	Examples	
Physician response to clues			
No/minimal response	No acknowledgment or one-word response	PAT: I think I had a bad experience... I don’t think it’s something for me DOC: Hm. Okay	PAT: I’ll notice that right when I take it...my abdomen starts hurting so bad. DOC: mm-hmm
Supportive/empathetic statement	Supportive or empathetic statement	PAT: My plan was I wanted to quit DOC: I know, and I support you...	PAT: so if there’s somehow we can – and – you know [get down]... DOC: And we can, I know that we can
Explore/expand on assessment	Elicits more information or patient perspective	PAT: I felt really psychotic, just awful DOC: Yeah I know... did you call in over a weekend or an evening?	PAT: it didn’t do anything for my pain. DOC: Okay, and then what was the dose that he gave you?

Table 2 Participant Demographics

Characteristic	Patients (n = 86)	Physicians (n = 49)
Age, mean (SD)	59.6 (10.5)	29.6 (3.6)
Male sex, n (%)	31 (36.1)	12 (24.5)
Hispanic, n (%)	12 (14.0)	1 (2.0)
Race, n (%)		
White	56 (65.1)	24 (49.0)
Black	24 (27.9)	2 (4.1)
Asian	0 (0)	21 (42.9)
Native American	2 (2.3)	0 (0)
Multi-race/other	4 (4.7)	2 (4.1)
Clinic, n (%)		
Family medicine	23 (26.7)	12 (24.5)
Internal medicine	63 (73.3)	37 (75.5)
Employment status, n (%)		
Working full or part time	11 (12.8)	
Not working	1 (1.2)	
Retired	30 (34.9)	
Disabled/unable to work	44 (51.2)	
Education, n (%)		
Did not finish high school	15 (17.4)	
High school graduate	16 (18.6)	
Some college	30 (34.9)	
Associate or technical degree	11 (12.8)	
Bachelor's degree or more	14 (16.3)	
Annual household income*, n (%)		
≤ \$10,000	21 (24.7)	
\$10,001–\$20,000	30 (35.3)	
\$20,001–\$40,000	11 (12.9)	
\$40,001–\$60,000	7 (8.2)	
\$60,001–\$80,000	9 (10.6)	
> \$80,000	7 (8.2)	

*One missing value

was 7.6 (SD 1.8). Patients had a mean of 2.4 (SD 1.1) different pain locations documented in visit notes and problem lists. The most common were back (73%), lower extremity (55%), upper extremity (36%), neck (20%), and generalized pain (20%). Patients saw their usual physician for 86% of study visits. Patients' median daily opioid consumption was 42.5 mg morphine equivalents (interquartile range, 20–80).

We coded 274 opioid assessments during 86 clinic visits (mean 3.2 per visit; median 2). Sixty-eight visits (79%) contained at least 1 assessment. As shown in Table 3, the most common assessment topics were pain relief (51% of all assessments), followed by function (21%) and safety (14%). Of the 274 assessments, 129 (47%) were coded as clues (mean 1.5 per visit; median 1). Forty-six visits (53%) contained at least one clue; 30 visits (35%) contained 2 or more clues, and

Table 3 Patient Opioid Assessments and Clues by Topic

Assessment topic	Opioid assessments n (%)	Clues n (%)	Proportion clues (%)
Pain relief	141 (51)	57 (44)	40
Function	58 (21)	6 (5)	10
Safety	38 (14)	30 (23)	79
Side effects	31 (11)	31 (24)	100
Identity	6 (2)	5 (4)	83
Total	274 (100)	129 (100)	47

Table 4 Commonly Endorsed Opioid Side Effects and Risks

Side effect	n (%)
Constipation	13 (15)
Sedation	13 (15)
Withdrawal symptoms	11 (13)
Nausea/upset stomach	10 (12)
Other side effects	9 (11)
Tolerance	8 (9)
Taking more than prescribed	7 (8)
Physiologic dependence	4 (5)
Addiction	4 (5)
Itching	2 (2)
Drug-drug interactions	2 (2)
Obtaining opioids from others	2 (2)

Only side effects endorsed by ≥ 2 patients are listed

18 visits (21%) contained 3 or more. Seventy-nine percent of assessments related to safety were coded as clues, compared to only 10% of assessments related to function (Table 3).

For the 129 assessments coded as clues, 43% of the time physicians did not acknowledge the assessment or gave one-word responses, 14% of the time physicians responded with empathetic or supportive statements, and 43% of the time physicians further explored patients' attitudes or opinions about opioids, usually by asking a follow-up question.

Fifty-eight percent of patients endorsed at least one opioid-related side effect or risk during their visit, 27% endorsed 2 or more different side effects, and 10% endorsed 3 or more. Table 4 shows the frequency of different side effects. The most frequently endorsed side effects were constipation (15% of patients), sedation (15%), withdrawal symptoms (including fear of withdrawal; 13%), and nausea (12%). Four patients (5%) endorsed worries about addiction, but only 1 patient expressed concern about overdose or death. Seventy-one percent of patients expressed either ≥ 1 clue or ≥ 1 side effect during their visit.

Sensitivity Analysis. Eight patients (9%) made assessments in the context of an ongoing opioid taper. Excluding these 8 patients did not substantively change the relative frequency of opioid assessment topics or the proportion of assessments coded as clues. However, tapering patients made, on average, 1.8 assessments for every assessment made by a non-tapering patient (95% CI 1.06–3.1, $P = 0.03$) and expressed 3.1 clues for every clue expressed by a non-tapering patient (95% CI 1.4–6.9, $P = 0.006$). There was no significant difference in the number of side effects endorsed.

DISCUSSION

This study characterized opinions and attitudes that patients express about opioids as well as the number and kind of opioid-related side effects they endorse during primary care visits. We found that clues—patient assessments indicating opportunities for physicians to discuss non-opioid pain treatments or lower opioid doses—are common during routine primary care visits involving patients on long-term opioid

therapy. Fifty-three percent of patients expressed ≥ 1 clue during their visit, and 21% expressed ≥ 3 clues.

Physicians explored or investigated clues slightly less than half of the time (43%) and responded with empathy/sympathy 14% of the time. We did not attempt to identify appropriate or optimal rates of specific response types. It is not realistic to expect physicians to explore or expand upon clues 100% of the time. However, given the importance of active listening and of understanding patients' perspectives for patient-centered pain care, the finding that physicians ignored or did not respond to clues 43% of the time suggests that there is likely room for improvement.

Patient-endorsed side effects were not always counted as clues in this study, but, like clues, patient-endorsed side effects signal opportunities for physicians to explore patients' willingness to taper opioids or try non-opioid pain treatments. We found that 58% of patients endorsed ≥ 1 opioid-related side effect during their visit and 10% of patients endorsed ≥ 3 different side effects. Opioid-related constipation, sedation, nausea, and withdrawal symptoms were each endorsed by $> 10\%$ of patients. Over 70% of patients made at least one statement that was coded as a clue or endorsed at least one opioid-related side effect. Overall findings did not meaningfully change when we excluded patients who were actively tapering their opioid use.

Our findings have implications for primary care physicians and other generalists who treat patients taking opioids for chronic pain. First, routinely asking patients' opinions about opioids and opioid-related side effects is likely to yield additional clues conveying potential willingness to taper opioids or try non-opioid pain treatments. Our observational study focused on patient statements during routine visits and found that such clues were common; however, they would likely be even more common if physicians regularly elicited patients' attitudes about opioids and systematically assessed opioid-related side effects.

Second, teaching physicians to recognize and explore patient clues during primary care visits could be an effective, patient-centered approach for encouraging patients with chronic pain to try non-opioid treatment strategies or decrease their opioid use. Exploring clues that suggest ambivalence about or problems with opioids and then—when further exploration confirms ambivalence or problems with opioids—broaching the subject of lower opioid doses or non-opioid treatments is a patient-centered strategy because it relies on listening for and responding to the beliefs and attitudes patients express about opioids. This strategy is congruent with strategies used in motivational interviewing²² and patient-centered interviewing,²³ two widely taught approaches to patient-centered communication. It also aligns with existing health communication research programs that have examined patient clues about potential emotional distress^{15, 24} and social concerns.¹⁴

The Text Box shows an example from our data of how one physician used a patient clue to segue into a discussion of non-opioid pain treatments. In this visit, the patient reports that he has been using more hydrocodone than prescribed due to

worsening back pain. The patient provides a clue by refusing an offer of long-acting oxycodone because it did not relieve his pain in the past. The physician uses this opportunity to discuss non-opioid treatment options. After the excerpt, the physician goes on to describe several non-opioid treatment options. At the end of the visit, the patient agrees to limit his hydrocodone use to 4–5 pills per day, to try physical therapy, and to keep a specialist appointment about which he was apprehensive.

Text Box. Transcript excerpt showing physician exploring a patient clue*

PAT: Sometimes I might take up to four [Norcos] a day.
 DOC: Do you ever take more than that?
 PAT: Well probably—
 COM: Yeah, sometimes he does, if he needs it.
 PAT: Yeah, sometimes I do, if I'm really, really hurting, yeah, I take 'em.
 (lines omitted—doctor suggests changing Norco to OxyContin)
 DOC: I'm assuming that your pain is gonna still get worse, and you're gonna need more, and instead of increase the Norco to a level that's not safe . . . for you, that's when I would go to a longer acting [like Oxycontin].
 (lines omitted)
 COM: Have you tried that, because I know somebody that takes it—
 PAT: I tried that OxyContin. The doctor gave me a prescription for it once, and it didn't do anything for my pain. That was when I was seeing Dr. X and Dr. Y.
 DOC: Okay, and what was the dose that he gave you?
 PAT: He gave me 50, and I don't know what the doses of them was.
 DOC: Oh, okay, okay. Again, if you guys don't want to do that, that's—I'm just trying to tell you what like my fears are, if we keep going up on this pain medication . . . Now, four or five pills, it's fine, like we can stay on it. But if your pain gets worse and it's not being controlled, and you're not able to do the things you enjoy, then we need to talk about other options.

**underlined text indicates the patient clue; PAT = patient, DOC = doctor, COM = patient's companion*

Of course, patient clues do not always reflect an underlying willingness to reduce opioid use or try non-opioid treatment options. Patients may express concerns about opioids for many reasons, including to mirror physicians' perceived concerns (i.e., social desirability bias) or to present themselves as "model" patients.¹³ Physicians often fear that recommending lower doses to patients on long-term opioid therapy will provoke conflict or difficult interactions.^{7, 25} However, physicians are unlikely to provoke conflict by exploring patient clues and need not recommend reducing opioids if they explore a clue that turns out not to reflect an underlying concern or problem with opioids. On the other hand, since patient clues are common during primary care visits, learning to recognize and explore them is likely a productive strategy for introducing discussions about non-opioid treatments or opioid tapering for a substantial minority of patients on long-term opioid therapy for chronic pain. Depending on context, adequately exploring a patient clue might require merely eliciting additional information (see the Text Box) or might require skillfully exploring patient's ambivalence about opioids using motivational interviewing techniques.

Our study has limitations. We coded patients' explicit assessments about opioids at the level of the speaking turn and so likely excluded expressions of opioid-related concerns or problems that were indirect or implied over multiple speaking turns. Thus, our findings likely represent a conservative estimate of

the prevalence of patient clues. We focused on explicit assessments because they are relatively straightforward to identify regardless of visit context and thus can be recognized by physicians with varying degrees of experience and communication skill. Similarly, we coded physician responses immediately after each clue and so did not consider responses that may have occurred later during the visit. Our study was limited to resident physicians in 2 academic primary care clinics and so may not generalize to other settings or populations. However, our primary analysis focused on patient (rather than physician) statements, so findings are likely representative of patients on long-term opioid therapy across a range of primary care settings. Finally, study participation or video recording may have affected patient-clinician communication about opioids. However, recruitment emphasized chronic pain rather than opioids. Research studies on the effects of video recording are inconclusive, but our prior work suggests that audio recording clinic visits does not significantly affect the topics discussed.²⁶

In summary, we found that patient opioid assessments are common during primary care visits and that approximately half of such statements indicate potential willingness to consider non-opioid pain treatments or lower opioid doses. Eliciting patients' attitudes about opioids and asking them about side effects will likely result in additional clues. Teaching physicians to recognize and explore these clues may be a promising, patient-centered strategy for discussing opioids with patients who have chronic pain and, eventually, reducing the prevalence of long-term opioid therapy.

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Compliance with Ethical Standards:

Conflict of Interest: The authors declare that they do not have a conflict of interest.

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