UNDERSTANDING HOW PRIMARY CARE CLINICIANS MAKE SENSE OF CHRONIC PAIN

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Abstract

Chronic pain leads to reduced quality of life for patients, and strains health systems worldwide. In the U.S. and some other countries, the complexities of caring for chronic pain are exacerbated by individual and public health risks associated with commonly used opioid analgesics. To help understand and improve pain care, this article uses the data-frame theory of sensemaking to explore how primary care clinicians in the U.S. manage their patients with chronic noncancer pain. We conducted Critical Decision Method interviews with 10 primary care clinicians about 30 individual patients with chronic pain. In these interviews, we identified several patient, social/ environmental, and clinician factors that influence the frames clinicians use to assess their patients and determine a pain management plan. Findings suggest significant ambiguity and uncertainty in clinical pain management decision making. Therefore, interventions to improve pain care might focus on supporting sensemaking in the context of clinical evidence rather than attempting to provide clinicians with decontextualized and/or algorithm-based decision rules. Interventions might focus on delivering convenient and easily interpreted patient and social/environmental information in the context of clinical practice guidelines.

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1. INTRODUCTION

Chronic pain is a costly condition worldwide, resulting in increased health care costs, lost productivity, and reduced quality of life (Barker & Moseley 2016; Breivik, Eisenberg & O'Brien 2013; Gaskin & Richard 2012; Yeo & Tay 2009). Adding to this burden, chronic pain frequently co-occurs with mental health conditions, such as depression, anxiety, and substance use disorder (Bair, Robinson, Katon, Kroenke 2003; Gureje, Von Korff, Simon, Gater 1998; Rosenblum, Joseph, Fong, Kipnis, Cleland, Portenoy 2003; Martell et al. 2007). The clinical management of chronic pain is also complicated by regulatory issues surrounding risks of opioid analgesics, access to non-opioid treatments, and varied clinician training in pain care. In the United States (U.S.), the majority of patients with chronic pain are treated by primary care clinicians (PCCs) (Committee on Advancing Pain Research Care Education 2011). Yet, PCCs frequently struggle to deliver care that overcomes the complex, biopsychosocial nature of many pain conditions and achieve improved health outcomes (Upshur, Luckmann, Savageau 2006, Committee on Advancing Pain Research Care Education 2011; Leverence et al. 2011; Breuer, Cruciani, Portenoy 2010). To help inform improvements in care, this article describes an in-depth study of chronic noncancer pain management by PCCs in the U.S. We use the data-frame theory of sensemaking to characterize anchors, clinician factors, and macrocognitive strategies used by PCCs when caring for patients with chronic pain.

1.1 Chronic Pain Management in the U.S.

Today, in the U.S., PCCs bear much of the responsibility for managing chronic pain, and thus significant responsibility for ensuring opioids are prescribed appropriately. These challenges are complicated by the fact that patients with chronic pain may have inaccurate perceptions and judgments of pain treatments, including of the benefits and risks of opioids (Committee on Advancing Pain Research Care Education 2011). For example, patients who have developed opioid dependence may desire to continue chronic opioid treatment, despite reporting no meaningful improvements in pain or functionality. At the same time, pain care is complicated by local, state, and federal guidelines and laws aimed at reducing harms by monitoring and influencing opioid prescribing. Thus, the evolving understanding of opioid-related risks and therapeutic benefits as well as legal and social changes have created significant challenges for clinicians as they seek to make sense of each patient's situation and effectively care for their pain.

While myriad laws, policies, and clinical practice guidelines exist to support pain care and opioid prescribing (Max et al. 1995; American Society of Anesthesiologist Task Force on Chronic Pain Management and the American Society of Regional Anesthesia and Pain Medicine 2010; Chou 2009; Manchikanti et al. 2012, add Centers for Disease Control and Prevention 2016), most do not provide rigid clinical decision rules. Therefore, guideline-based chronic pain care requires access to, and careful interpretation of, information that is

often scattered, missing, or out-of-date, such as medication history, imaging results, and patient-reported pain assessments. Moreover, guideline recommendations can be difficult to follow when patients have co-morbid health conditions and PCCs have limited time during patient visits (Østbye, Yarnall, Krause, Pollak, Gradison, Michener 2005; Abbo, Zhang, Zelder, Huang 2008).

1.2 Data Frame Theory of Sensemaking

We chose to use the data frame theory because chronic pain management is a classic sensemaking activity, characterized by uncertainty, complexity, and changing conditions. Sensemaking theory has been used to characterize key aspects of performance in surgical teams (Rosness, Evjemo, Haavik, Waerø 2016), air traffic control (Malakis and Kontogiannis 2014), military command and control (Jensen 2009), pilots (Rankin, Woltjer, Field 2016), and rail signal operators (Siegel and Schraagen 2017). PCCs must make choices about a patient's pain management plan, often without a clear understanding of the cause of the patient's pain, and with the presence of complicating factors such as a mental health diagnosis, and the patient's lack of social support. Furthermore, all of these factors, as well as the legal and regulatory environment, change over time. This project represented an opportunity to explore the practical utility of the data frame theory of sensemaking. Prior applications have focused primarily on descriptions of sensemaking; our intent was to extend its use for characterizing a complex problem to identify insights and potential solutions. We anticipated that the data frame theory of sensemaking would be useful in highlighting the cognitive challenges and information needs specific to PCCs, and identifying leverage points for clinical decision support.

The data frame theory of sensemaking posits that "Sensemaking enables people to integrate what is known and what is conjectured, to connect what is observed with what is inferred, to explain and to diagnose, to guide actions before routines emerge for performing tasks and to enrich existing routines." (Klein et al. 2007, p 114). An important proposition of the theory is that the decision maker's mental representation (i.e., frame) influences what data are attended to and how they are interpreted, while at the same time the interpretation of data drives the formation and elaboration of the mental representation. Note that that some traditions might characterize frames as heuristics or biases (Tversky & Kahneman, 1974; Gilovich, Griffin, Kahneman, 2002). However, we found this approach less useful because the heuristics and biases approach typically focuses on comparing expert performance to optimal decisions as defined by rules or models. In this study, we examined patients with a range of complex chronic pain conditions for which clearly normative treatment strategies would have been hard to define. Instead, the more neutral data frame approach allows for consideration of adaptive as well as flawed use of PCCs' experience and mental representations.

The data frame theory views sensemaking as dynamic (Figure 1). Key information or data are described as anchors for a specific frame. Anchors may change as new information becomes available, requiring the decision maker to question the initial frame, elaborate the frame, re-frame, or compare frames. In cases characterized by uncertainty and conflicting information, a decision maker may seek a frame by looking for an analog or searching for

more data. Anchors could be characterized as data, cues, or information; our interest is in which data are used as anchors to inform judgments and framing.

2 METHODS

2.1 Overview

We conducted Critical Decision Method interviews with PCCs who care for patients with chronic pain. For each PCC who agreed to participate, we identified their patients with chronic noncancer pain via either PCC referral or by using a computable phenotype that searched the system's electronic health record (EHR) for patients with repeated diagnoses or medications that indicated chronic pain without a recent cancer history. When eligible patients with upcoming appointments were identified, a researcher met with each patient immediately prior to the patient encounter, confirmed the patient's chronic pain history, and invited him/her to participate in the study. If the patient agreed, they would be the topic of a critical decision method interview conducted within two days following the encounter. For three interviews, no eligible patients with upcoming appointments were identified, so the provider interview focused on a recent chronic pain patient visit and no patient identifying information was collected.

2.2 Participants

We report findings from 30 interviews conducted with 10 PCCs. PCCs were invited to participate after a presentation describing the planned study. All were full-time physicians. Seven work for a large, urban safety net medical system. Three work for networks of PCCs that serve more rural populations in west central Indiana and eastern Illinois. All had received limited (or no) formal training in managing chronic pain. Experience level ranged from 2 to 30 years. Providers included in the study used three different EHRs.

2.3 Interviews

Interviews were conducted in two rounds of 15 interviews. For the first set of PCC interviews, three interviewers were present to facilitate common ground across the data collection team, and encourage refinements to the interview guide. After the first six interviews, the remaining interviews were conducted by one or two interviewers. Interviews lasted approximately 60–90 minutes. All interviews were audiotaped and transcribed.

Each PCC participated in a series of interviews. Prior to the first interview, each PCC filled out a brief demographics questionnaire. During the first interview, the interviewer asked questions about the PCC's patient population, general approach to chronic noncancer pain care, and tools, instruments and assessment used when taking care of patients with chronic noncancer pain. For the remainder of the first interview and all subsequent interviews with that PCC, we used an adapted critical decision method interview technique (Crandall, Klein, Hoffman 2006). Specifically, we used critical decision method probes to explore characterization of and care management plan for a recent patient with chronic pain rather than eliciting a critical incident. We encouraged PCCs to describe interactions with and impressions of a single patient over long periods of time.

The critical decision method portion of the interview focused on the patient who agreed to participate in the study, or on a recent patient with chronic pain. Participants were asked to recall the patient of interest. For those patients who agreed to participate in the study, the PCC was encouraged to open the patient record in the EHR as a memory aid. The interviewer and interviewee co-created a timeline of major events in the care of the patient (i.e., shifts in patient condition, shifts in treatment plan), and the interviewee was encouraged to describe salient information (i.e., cues, anchors), goals, strategies, and actions taken for each major event. In the final part of the interview, the interviewer asked a series of questions about information needs and the EHR, exploring how the EHR supports the management of patients with chronic pain conditions, and limitations of the current EHR.

The second round of 15 interviews followed a similar form. However, refinements to the interview guide occurred based on analysis of the first 15 interview transcripts. Specifically, we identified opioid-related risks, benefits, and goals as topics for additional exploration and added probes to the interview guide to address these topics. We also shifted to a more streamlined interview approach in which the interviewer adhered more closely the interview guide, restricting follow-up queries to those needed to clarify potential points of confusion. This shift was motivated to accommodate clinician time constraints and to increase standardization across interviews.

2.4 Analysis

We conducted a thematic analysis on deidentified transcripts from each interview. This process emphasizes the value of exploring differences in interpretation rather than reaching coding concordance via inter-rater agreement (Barbour 2001). We used a process of upward abstraction in which we coded the data to explore specific components of the interviews. To develop a codebook for the upward extraction, each team member (5 behavioral researchers, 2 primary care clinicians, 1 pain specialist physician) reviewed two transcripts and identified topics of interest and potential themes. Four behavioral reserachers (SA, ED, SD, LM) compiled responses and applied the resulting draft codebook to 3 individual interview transcripts. We met after each to discuss and refine until consensus was reach about the codebook. Two researchers then coded an additional 12 interview transcripts, meeting after each to reach consensus on all codes. After 15 transcripts had been coded, two researchers (SA, LM) began the process of upward abstraction. They reviewed data in individual coding categories, exploring themes within individual categories and across related categories. Summaries were shared with the larger team for additional discussion and input from clinician team members.

Because PCC frames were of particular interest to this project, additional analyses were conducted on these data. From the first round of 15 interview transcripts, two researchers (LM, SA) extracted 61 segments containing descriptions PCCs used to characterize their patients. These were entered into an Excel spreadsheet and sorted into four initial categories. Each member of the larger team was then asked to conduct their own individual card sort, placing segments into the four categories and creating new categories when a segment did not fit. Individual card sorts were integrated into a single document. The analysis team met to discuss the integrated document refining definitions, combining categories, and

articulating new ones until consensus was reached. Further discussion and refinement distinguished anchors related to patient factors, and clinician factors.

Transcript segments describing patients from the second round of 15 interviews were extracted and placed into the anchor and clinician factor categories previously identified. Those that did not fit were examined and formed a new set of anchors: social and environmental factors.

3 FINDINGS

We identified anchors and clinician factors from which frames are derived (Figure 2). Anchors and clinician factors inform a series of judgments that influence PCCs in establishing, elaborating, questionning and comparing frames. Anchors (shown on the left and lower center of the figure) are specific patient-related and social/environmental data elements that aid in creating the frame, while at the same time the frame influences which data elements might be considered an anchor. Clinician factors (on the right side of the figure) are also important contibutors to the frame. Note that anchors could be characterized as data, cues, or information; our interest is in which data are used as anchors to inform judgments and framing.

3.1 Anchors

Common anchors for PCCs in managing patients with chronic pain include an interpretation of the patient's behaviors, patient condition, patient goals, and opioid use history (Table 2). Social and environmental factors such as health insurance policies, new clinical practice guidelines, and the patient's social support system (or lack of) may also serve as anchors (Table 3).

3.1.1 Patient factors

Patient behaviors.: PCCs describe situations in which they interpret patient motives based on patient behaviors. Because opioids are a controlled substance with potential for misuse, abuse, and diversion, clinicians must be vigilant for indicators that medications will not be (or are not being) used as recommended. Clinicians attend to a range of patient behaviors. For example, patients who provide long, repetitive stories about their pain ('*she talks about all the different pain that she has and then how careful she is about always taking her medications and that no one ever has access to them, other than her and, … she has a very long script really, and goes through a lot of detail*'), or who want to talk about their pain to the exclusion of all other health issues ('*I can't talk to this patient about anything except, she just wants her pain meds*') may raise suspicions about the patient's potential inappropriate use of opioid medications. Some patients aggressively pursue pain medications, requesting opioids specifically or calling often with repeated requests ('*because just in the 24–48 hours after visit, my nurse had gotten many, many phone calls from her about pain medications*'). Another anchor might be the patient's openness to trying pain management strategies that do not include opioids ('*saying nothing else works for them, refusing all non-opioid therapeutic options…*'). Yet another anchor might be a urine drug screen that comes back positive for cocaine. These anchors aid PCCs in judging whether the patient is able to manage opioids

safely, whether the patient is at risk for opioid misuse, abuse, or diversion, and whether a reliance on opioids is harming the patient's ability to manage other health conditions.

Patient condition.: Patient condition anchors include pain etiology, level of physical function, and comorbid health conditions. Anchors related to pain etiology inform judgments related to identifying underlying causes of pain and determining what treatments are likely to resolve underlying issues and treat current pain symptoms. Identifying anchors relevant to pain etiology can be challenging when patients report pain but there is no other supporting clinical evidence (i.e, causal pathology on imaging, physical exam or other objective measures such as eletrodiagnostic testing). Often a series of diagnostic tests and consultations are ordered as the PCC seeks data that can serve as an anchor related to pain etiology. Even if a specific diagnosis is elusive, the PCC considers factors such as whether the pain may be related to a medical condition that will likely resolve or is persistent in nature, and the impact of pain on the patient's life.

With regard to function, PCCs describe some patients for whom pain has completely disrupted their lives, greatly reduced their level of function, and contributed to depression. Other patients experience pain, but still enjoy a comfortable life. Some PCCs identify the patient's ability to manage other chronic conditions such as diabetes, heart failure, and biopolar disease as key indicators of level of function. One PCC used level of function as a primary anchor; his rule of thumb was to avoid long-term opioid therapy for any patient with a potential for a functional life.

Cormorbidities provide important anchors for determining treatment options. For example, patients with alcohol use disorder narrow treatment options considerably. One PCC described a patient who came to every appointment inebriated. This made it difficult to address the patient's pain given even non-opiod medications may exacerbate liver damage caused by alcohol. Diabetes, heart failure, liver disfunction all constrain the medical options available. Psychiatric conditions and cognitive impairment may limit the patient's ability to manage treatment regimens at home and to keep appointments for ongoing care such as physical therapy.

Patient goals.: Some patients have clear outcome goals, such as returning to work, or being able to play with grandchildren. Often, however, the PCC helps patients articulate realistic goals. For example, many patients come to the doctor with goals of being pain-free and returning to a level of functionality they experienced as a younger, healthier person. The PCCs may help patients understand that they may never be pain free, but they can still improve their physical function or quality of life. PCCs often aid patients in articulating concrete goals such as living opioid free, returning to work (perhaps part-time), resuming a course of studies, or increased level of self-care ('... *the goal is not for his pain to... his pain probably won't be gone forever. He probably won't have the strength he had in his hands when he was 20 years old either. No matter what we do the goal is just to improve as much as we can and have him functioning as much as we can.*'). These anchors influence judgments about whether the patient is engaged in increasing his/her level of function and ability to set realistic goals.

Therapeutic history.: Therapeutic history is an important anchor as PCCs make judgments about how past patterns of opioid use increase the likelihood that the patient will maintain the current level of opioids, require an increase in opioids, successfully wean from opioids, or be treatable without opioids. Anchors include history of successful and unsuccessful treatments, including opioids, neuropathic agents, NSAIDs, antispasmodics, physical therapy, and others.

3.1.1   Social and environmental factors—Social and environmental factors also provide anchors that inform strategies for managing patients with chronic pain and important judgments. For example, insurance regulations may influence which tests are included in the diagnostic workup, as well as referrals and treatments used. One PCC described referring a patient to specialists earlier in the process than usual so the patient would have the documentation necessary to apply for government disability benefits. Recent national clinical practice guidelines encourage clinicians to prescribe non-opioid therapies as adjunct to or as a replacement for opioid therapy when appropriate (Centers for Disease Control & Prevention 2016). As a result, some PCCs are actively seeking alternatives, and making judgments about implications for both new patients and those who have been prescribed opioids for some time. Social factors such as housing insecurity, transportation, and social support systems can also be important anchors in determining what types of treatments are practical for an individual patient. For example, a patient applying for disability was missing medical appointments because of homelessness, but needed disability status to be eligible for subsidized housing. Helping the patient obtain the documentation necessary to obtain disability benefits became an important component of establishing a setting in which the patient would be able to manage his/her chronic pain. Without housing, many treatments were simply impractical.

3.2   Clinician characteristics

We identified four clinician characteristics that influence framing. One clinician factor is the experience and training the PCC has in managing chronic pain. One PCC reported that s/he had over 20 years of experience managing patients with chronic pain. In fact, pain was an area of interest, s/he was well-read on the topic and maintained a panel with a relatively high proportion of patients with chronic pain. This PCC was able to reflect on the changes in guidelines and regulations regarding opioids and chronic pain management over time, as well as the experiences of his/her patients in that time period. The PCC had observed first-hand that long-term use of opioids results in decreased function and often is less effective in treating pain over time. As a result, this PCC would not consider long -term opioid use for any patient that still had a reasonable likelihood of a functional life. Another PCC in this sample was a relatively inexperienced physician and had recently move to the U.S. from a country where opioid medications were not generally available as a chronic pain treatment option. This clinician was actively seeking educational and mentoring opportunities to augment his/her limited experience with opioids. S/he had not yet developed rules of thumb for managing patients with chronic pain. This PCC expressed concern that patients were vulnerable to the preferences and practices of each individual clinician. Thus, s/he sought strategies that would enable him/her and others to provide more consistent and high quality care.

A second clinician factor is perception of own role. One PCC described a patient who desperately wanted to wean from opioids but was having limited success. The PCC made weekly appointments with the patient, primarily to provide emotional support and encouragement. Others might consider this outside the role of the PCC. In fact, this PCC indicated that these weekly appointments were only possible because s/he was new in the clinic and currently had a relatively small panel of patients. Another PCC focused on helping patients become as functional as they could. S/he described a shift in understanding of the clinician role over time: from managing pain to supporting a functional life. Although these two things are highly inter-related for patients with chronic pain, this shift in thinking changed the way s/he looked at individual patients and the treatment options s/he considered.

A third clinician factor is interpretation of regulations and guidelines. Regulations and guidelines relevant to chronic pain are diffuse and require interpretation on the part of the PCC. In fact, one PCC indicated '*I guess I'm up in the air too about whether these* [opioids] *are really supposed to be used for chronically ill people.'* Another PCC reported that even portions of the guidelines that appear straightforward are not. For example, the U.S. Centers for Disease Control and Prevention guidelines states: '*When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs.*" One PCC pointed out that the urine drug test used at his/her facility does not detect all relevant substances and a blood test may better meet the spirit of the guidelines. Also, the phrase "at least annually" suggests that in some cases, screening should happen more often, but it is up to the individual PCC to determine how often for each patient.

A fourth clinician factor is knowledge of resources available. With regard to patient treatment resources, one PCC reported that there were long wait times to obtain an appointment with the affiliated pain specialty clinic, so s/he asked administrative staff to compile a list of all pain clinics in the region, regardless of whether they were associated with the hospital system in order to offer patients more options. With regard to clinician information resources, one PCC indicated that it was difficult to quickly locate and review relevant information about patients with chronic pain in the EHR,. Thus, s/he used a function in the EHR intended for inpatient care to compile a summary of each patient scheduled for the day. Knowledge of the resources available and how to best leverage them influences what data elements PCCs examine and what treatment options they consider.

4 DISCUSSION

This study represents an in-depth exploration of PCC decision making related to chronic pain, a topic that has been primarily studied using survey techniques (Breuer, Cruciani, Portenoy 2010; Green et al. 2002; Turk, Bordy, Okifuji 1994). This is also the first in-depth analysis of clinician decision making conducted after publication of CDC guidelines intended to influence opioid prescribing in primary care. Articulating the common anchors and clinician factors that influence framing in chronic pain management has implications for supporting sensemaking in this environment. By shedding light on the data elements needed

to form a frame, elaborate a frame, seek a frame, re-frame, question a frame, and compare frames, potential improvements in systems of care become clearer. For example, an EHR interface intended to support pain care might be structured around common anchors. Furthermore, efforts to increase data sharing across institutions, between primary and speciality (i.e., emergency, psychiatry) care, and between healthcare and social service organizations could focus on common anchors and reduce uncertainty for PCCs. Finally, EHRs provide a natural platform for integrating guideline information and supporting workflows that lead PCCs to make guideline-concordant treatment decisions.

This characterization of chronic pain management also has implications for developing clinical practice guidelines that align with how clinicians make sense of chronic pain in their day-to-day practice. Given the complexity and dynamic nature of chronic pain care, it is important to avoid rigid decision rules. Yet, there may be strategies for guiding clinicians to appropriate anchors. By emphasizing and focusing PCCs on anchors that are consistent with recommendations, guidelines may lead to more standardized practice. Although interpretation and judgment by individual PCCs would still be necessary, focusing on common anchors might increase quality of care as patients would be less likely to encounter PCCs with disparate interpretations of the same guidelines. Training to support clinicians in managing patients with chronic pain might emphasize key judgments such as intepreting patient actions and motives, assessing non-pain conditions as they relates to chronic pain, assessing risk of opioid misuse, abuse, and diversion, and working with patients to identify realistic outcome goals. This might include educational materials and continuing education courses that include documentation of effective strategies and case studies.

The data frame theory allows for a more nuanced representation than more decompositional approaches because of the emphasis on the dynamic nature of sensemaking. Current discussions of chronic pain treatment focus more on what to avoid (i.e., overprescribing opioids, emphasizing potential benefits of opioids and downplaying the potential risks) than on how to effectively manage chronic pain. Often the results of even sophisticated sensemaking strategies are unsatisfying, as PCCs clinicians may be left with the question of determining what successful treatment might look like for some patients. Thus, while strategies to support sensemaking address an important problem, this is only part of the solution. More effective strategies for diagnosing and treating chronic pain are needed, as well.

A limitation of this study is that interviews were conducted in one geographical region of the U.S. and include 10 clinicians. A broader sample might reveal additional anchors and clinician factors that influence sensemaking. The use of the sensemaking model as a theoretical framework for this study at the exclusion of other possible theories is another limitation. Other theoretical perspectives may have led to different insights. In the context of this applied research project with limited time, resources, and funds, we did not have an opportunity to explore the data through the lens of multiple theoretical perspectives; rather we chose one that in our judgment aligned well the project goals and the phenomenon of study.

5 CONCLUSIONS

We found the data frame theory of sensemaking useful for capturing the complexity of chronic pain management in primary care. Findings from this study suggest that interventions to support PCCs in chronic pain management should consider the complexity, as well as the ambiguity and uncertainty associated with pain management. Interventions should focus on supporting sensemaking, such as aiding clinicians in identifying appropriate anchors in the context of clinical evidence and guidelines. Common clinican decision support elements such as algorithm-driven decision rules and decontextualized clinical reminders are less likely to be effective.

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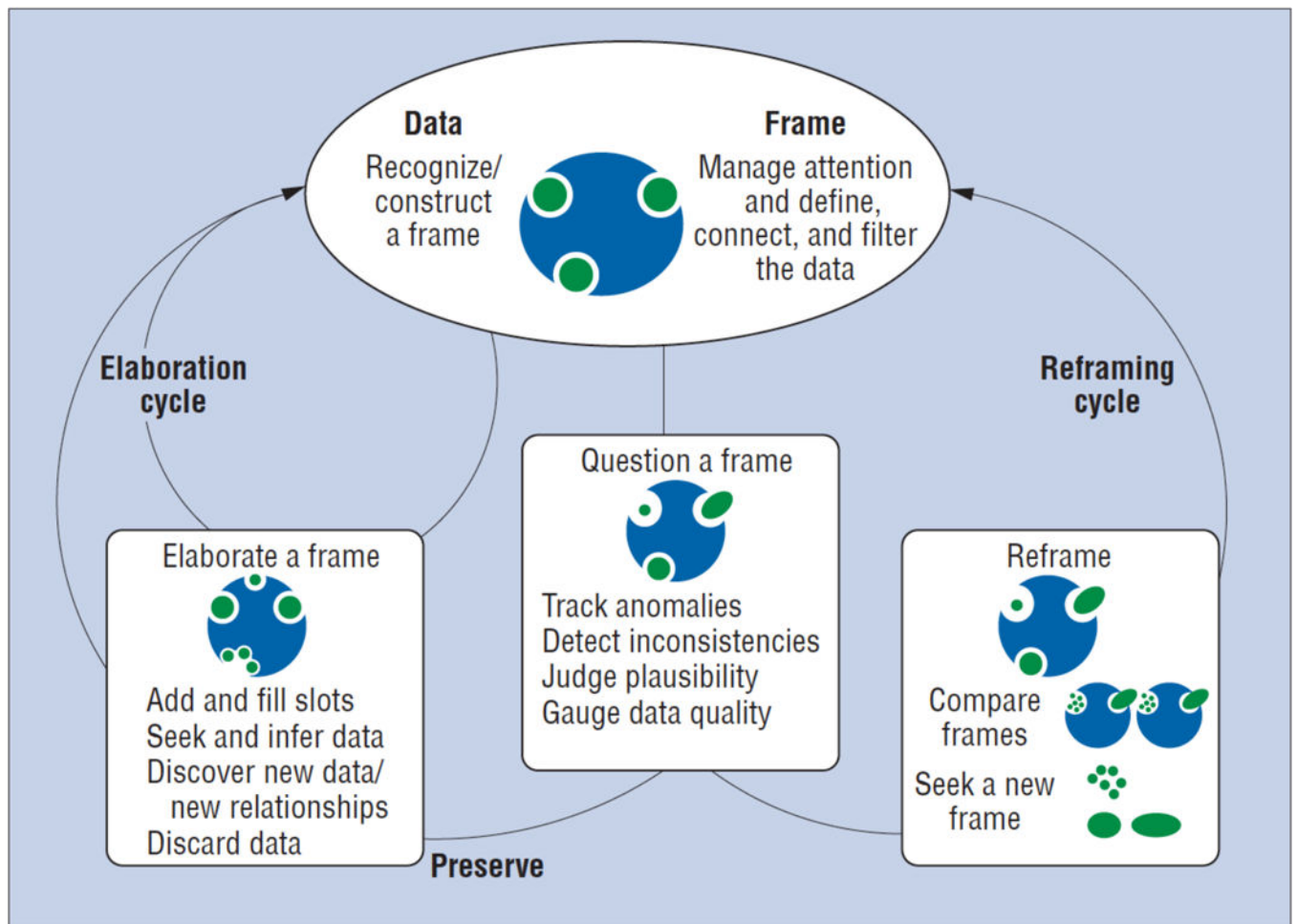
Figure 1:
Data Frame Model of Sensemaking reprinted with permission from: Klein, G., Moon, B., & Hoffman, R. R. (2006). Making sense of sensemaking 2: A macrocognitive model. *IEEE Intelligent systems*, *21*(5):88–92. [Permission requested December 2017]
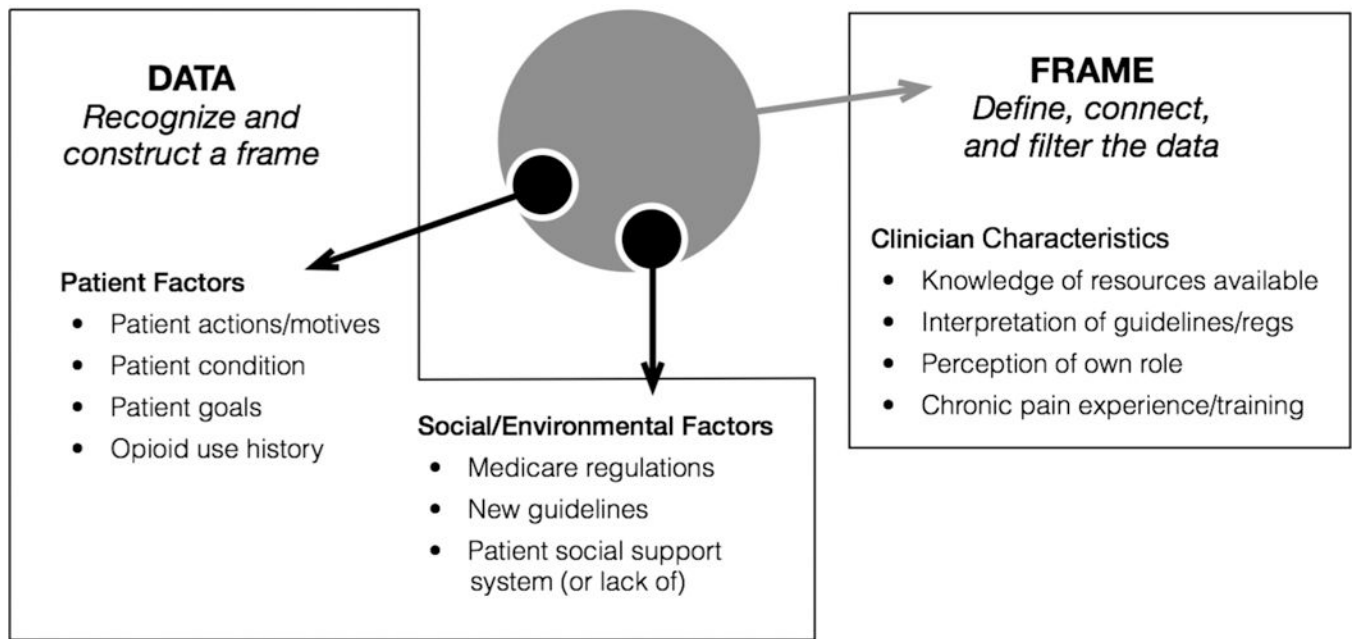
Figure 2:
Sensemaking in chronic pain management

Table 1:

Primary care clinician participants

Participant	Number of Interviews	Site Type		Specialty	Years in practice	Clinical Degree
		Urban (2 sites)	Rural (2 sites)			
01	3	✔		Internal medicine	5	MD
02	3	✔		General medicine	26	MD
03	3	✔		Internal medicine	17	MD
04	3	✔		Family medicine	12	MD
05	3	✔		Family medicine	15	FNP
06	3		✔	Family medicine	30	DO
07	3		✔	Family medicine	2.5	MD
08	3		✔	Family medicine	2	MD
09	3	✔		Internal medicine	16	MD
10	3	✔		Family medicine	11	MD
Total interviews	30	21	9			

Table 2:

Patient factors that influence care plans for patients with chronic pain

Patient Factors	Sample anchors	Sample judgments
Patient behaviors	• Tells long, repetitive stories about pain • Talks about pain to the exclusion of everything else • Repeated phone calls requesting opioids • Patient refuses to try pain management strategies that do not include opioids. • Drug screen positive for illicit substance	• Is patient able to manage opioids safely? • Is the patient at risk for misuse, abuse, or diversion? • Is reliance on opioid therapy reducing patient's ability to manage other chronic health conditions?
Patient condition	• Psychological conditions may be influencing pain • Hip pain may be treatable with surgery • Patient reports vague pain that limits ability to work • Chronic liver disease contraindicates some non-opioid pain medications	• What underlying condition is causing pain? • Is underlying condition treatable? • In what ways does pain limit function? • Do comorbid conditions limit pain treatment options?
Patient goals	• Wants to be pain free and strong • Resigned to pain, learning to live with it	• Is patient engaged in self-management to reduce pain, increase function? • Does patient have realistic goals?
Therapeutic history	• On moderate dose of opioids for 10 years • Has tolerated gabapentin in the past	• Is patient dependent on opioids? • Is it possible to wean this patient from opioids?

Table 3:

Social and environmental factors that influence care plans for chronic pain

Social/environmental factors	Sample strategies	Sample judgements
Insurance regulations	• Referring earlier than I would otherwise because he is going to need that documentation to apply for disability	• How to choose, administer, and document treatment so that patient qualifies for social services?
New clinical practice guidelines	• Looking for and prescribing alternatives to opioids because of new guidelines	• How will new guidelines change my treatment approach for legacy patients? • How will new guidelines change my treatment approach for new patients?
Unmet social needs	• Recognizing that appointments are missed because of homelessness, but disability benefits are needed to get out of homelessness	• What treatments are practical, given the patient's housing insecurity?