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# Balancing patient-centered and safe pain care for non-surgical inpatients: clinical and managerial perspectives

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# Abstract

**Background:** Hospitals and clinicians aim to deliver care that is safe. Simultaneously, they are ensuring that care is patient-centered, meaning that it is respectful of patients' values, preferences, and experiences. However, little is known about delivering care in cases where these goals may not align. For example, hospitals and clinicians are facing the daunting challenge of balancing safe and patient-centered pain care for nonsurgical patients, due to lack of comprehensive care guidelines and complexity of this patient population.

**Methods:** To gather clinical and managerial perspectives on the importance, feasibility, and strategies used to balance patient-centered care (PCC) and safe pain care for nonsurgical inpatients, we conducted in-depth, semi-structured interviews with hospitalists (n=10), registered nurses (n=10), and health care managers (n=10) from one healthcare system in the Midwestern United States. We systematically examined transcribed interviews and identified major themes using a thematic analysis approach.

**Results:** Participants acknowledged the importance of balancing PCC and safe pain care. They envisioned this balance as a continuum, with certain patients for whom it is easier (e.g., opioid-naïve patient with a fracture), versus more difficult (e.g., patient with opioid use disorder). Participants also reported several strategies they use to balance PCC and safe pain care, including

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offering alternatives to opioids, setting realistic pain goals and expectations, and using a team approach.

**Conclusions:** Clinicians and health care managers use various strategies to balance PCC and safe pain care for nonsurgical patients. Future studies should examine the effectiveness of these strategies on patient outcomes.

#### Keywords

Safe care; patient-centered care; hospital; pain care; qualitative research

# Introduction

Patient-centered care (PCC), defined as care that is respectful of and responsive to individual patient preferences, needs, and values, is increasingly considered an essential aspect of health care.<sup>1</sup> PCC can also be defined as care that views the patient as an individual influenced by a range of physiological and psychosocial factors rather than as a body part or disease to be treated.<sup>2</sup> As a result, hospitals are implementing various initiatives aimed at transforming care from a provider-driven, disease-focused approach toward a PCC approach. <sup>3,4</sup> Simultaneously, patient safety has assumed a central role in health care.<sup>5,6</sup> Mandatory reporting of adverse events, strict accreditation standards tied to patient safety goals, and federal reimbursement policies are obligating hospitals to prioritize patient safety.<sup>5,7</sup>As a result, hospitals and clinicians are striving to achieve a balance between PCC and safe care.

However, conflicts may emerge when hospitals and clinicians try to balance PCC and safe care, especially when managing patients with pain.<sup>8,9</sup> Patient-centered pain care must be attentive to patient values, preferences, and experiences because pain is a subjective phenomenon informed by a complex set of biopsychosocial factors.<sup>10,11</sup> Nevertheless. meeting patient preferences in pain care may raise significant patient safety and long-term health concerns, especially when patients request opioid medications.<sup>9,12,13</sup> In an attempt to be patient-centered, hospitals and clinicians may feel pressure to concede to patient requests for opioids or to prescribe higher doses of opioids. This situation has occurred because of a rise in patient consumerism,<sup>14</sup> the Joint Commission's report on pain as the "fifth vital sign" with a goal of "pain-free" patients,<sup>15</sup> and Centers for Medicare & Medicaid Services' (CMS) use of patient satisfaction scores in hospital and clinician reimbursement.<sup>16</sup> Furthermore, little guidance exists for hospitals and clinicians regarding how to balance PCC and safe pain care, especially for certain patient populations, such as nonsurgical patients requiring pain care. Specifically, the most recent care guidelines focus predominantly on patient safety (e.g., reducing opioid-related adverse drug events and overdoses), without discussing patient-centered aspects of pain care for nonsurgical patients.<sup>17</sup>

Given the challenges inherent in balancing PCC and safe pain care and the growing number of nonsurgical patients requiring pain care,<sup>18</sup> it is essential to understand clinical and managerial perspectives on the importance and feasibility of balancing these two goals. Furthermore, if hospitals aim to attain high levels of PCC and safety for nonsurgical patients requiring pain care, it is important to know what strategies clinicians and managers are currently employing to achieve that balance.

# Methods

#### **Study Participants**

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We recruited participants from one health care system in the Midwestern United States. We used purposive sampling identify and select groups of individuals (i.e., professions) in hospital setting that are especially knowledgeable about or experienced with pain care for nonsurgical patients.<sup>19</sup> Our participants were full-time hospitalists (n=10), registered nurses (n=10), and health care managers (n=10). Physicians and nurses are directly involved in the provision of pain care (e.g., through prescribing and/or administering treatment) and should be aware of the institutional processes and initiatives related to pain care. We recruited health care managers that hold positions (e.g., nursing leadership) that require knowledge about institutional processes and initiatives related to pain care. These health care managers were individuals with administrative responsibilities either at the inpatient unit (n=4) or health system level (n=6). The inpatient unit managers' responsibilities were more aligned with direct patient care, including pain care. The health system-level managers had primary responsibility for organizational performance and goals, including pain care. We estimated that the number of participants necessary for thematic saturation would be approximately 30, but we planned to recruit more participants if thematic saturation was not reached with that sample size. We defined thematic saturation as the point at which additional data leads to no new themes, when the researcher is empirically confident having repeatedly seen similar instances of data, and themes are well-developed.<sup>20</sup> Essentially, we viewed thematic saturation as the point at which there would be diminishing returns of conceptual or thematic

A.K. and O.M. recruited study participants through e-mail invitations and referrals. Specifically, A.K. worked with the president of the medical staff at one of the facilities to distribute e-mails to approximately 90 hospitalists that practiced throughout the health care system. Additionally, A.K. and the president of the medical staff reached out to the directors of clinical operations and chief nursing officers (n=5) with requests to share the study description with inpatient unit managers and registered nurses throughout the health system. Finally, O.M. discussed the study with a senior system-level health care manager, who subsequently shared the description of the study and OM contact information with the executive team. Our inclusion criteria were (1) full-time employment with the healthcare system and (2) an active medical license (clinicians only). Interested participants contacted O.M. via e-mail to schedule an interview. Each participant gave verbal informed consent before the interview. Participants were compensated with a \$50 gift card for their time. Our study was approved by the Institutional Review Board at Indiana University.

depth from further data collection. Ultimately, continued recruitment beyond 30 participants

#### **Data Collection**

was not needed.

O.M. conducted semistructured, in-person interviews with the 30 participants between September 2017 and June 2018. Members of our research team (O.M., B.A., M.B., A.K., C.H.) developed interview guides based on the current PCC and safety literature and our research questions. Each interview guide was tailored to the participant's job. Interview topics included patient-centered pain care, safe pain care, and strategies used to balance

these two concepts for nonsurgical patients. We asked all participants to define the concepts of "patient-centered care" and "safe care" in their own words to elicit the meaning they attributed to these terms. In line with the Institute of Medicine, our participants typically defined "patient-centered" care as care that is respectful of patient preferences and values, in which the patient plays a primary role in treatment-related decisions. Participants primarily defined "safe care" as not physically harming the patient, ensuring a safe environment (e.g., availability of bedrails and call buttons), and monitoring the patient for adverse events.

In interviews with clinicians, OM also probed decision-making in the context of opioid prescribing. Additionally, interviews with health care managers explored organizational deidentified strategies for balancing PCC and safe care in the hospital setting. The interviews also covered several topics (e.g., role of the patient satisfaction surveys in clinician decisionmaking) that are not presented in this analysis. These interviews are part of a larger project that aims to explore the association between opioid prescribing and patient satisfaction in hospitals. In this paper, we present themes that emerged from a portion of questions asked during the interviews. Each interview lasted approximately 45 minutes and was audiorecorded with consent and transcribed for analysis. O.M. pilot tested the interview guide for comprehension and content with two hospitalists and one nurse prior to the data collection. O.M. collected demographic and employment history information from every participant at the beginning of each interview.

#### Analysis

O.M. and B.A. analyzed the interview transcripts by following a modified version of the thematic analysis approach.<sup>21</sup> All interviews were completed prior to the start of the analysis. First, O.M. and B.A. created a preliminary codebook based on the preliminary screening of transcripts and our research questions and tested the codebook reliability by independently applying the codes to two transcripts. They then met and discussed the accuracy and consistency of the codebook and made necessary adjustments. Next, O.M. and B.A. independently coded each transcript using the revised codebook, followed by a consensus coding of each transcript, resulting in a final set of codes being applied to each transcript.<sup>22</sup> During the consensus coding process, O.M. and B.A. also identified new codes that were added to the codebook and consistently applied to all transcripts. As a next step, they analyzed the coded text for patterns and themes based on our research questions.<sup>23</sup> O.M. and B.A. also examined emerging themes for differences by respondent types. As the last step, they identified and agreed on a final set of overarching themes with representative quotes for each of them. All team members were involved in development of the manuscript. The entire analysis was performed in Dedoose qualitative analysis software.

# Results

# **Participant Characteristics**

Detailed information about study participants is presented in Table 1. Briefly, 80% of hospitalists were male (8/10) and received their medical degree in the United States (8/10); 60% were white (6/10). Our participants were representative of hospitalists nationally in terms of years in practice and country of medical education.<sup>24</sup> All nurses were female

(10/10); most were white (9/10), and one was African American. Our nurse respondents were similar to an average hospital registered nurse practicing in the United States.<sup>25</sup> Almost all health care managers were white (9/10) with one African American. Half of the healthcare managers were female (5/10). Our participants had similar gender and work experiences to the average healthcare manager nationally.<sup>26</sup> Table 2 contains several quotes to illustrate further the themes presented below.

#### Balancing patient-centeredness and safety in pain care

Several participants, especially hospitalists, reported that balancing PCC and safety is essential for delivering quality pain care for nonsurgical patients. Moreover, participants described how PCC and safety are interrelated. For example, by improving communication with patients, clinicians may provide care that is more patient-centered and discover additional patient information important for safe care, such as a patients' history of opioid abuse or overdose. Relatedly, participants did not believe that simply providing patients what they want and ask for should be considered as PCC, as patients may request a potentially harmful treatment. As one hospitalist stated, "If you are shooting for happy satisfaction numbers, then just put stamps, you know, prescription pads out in the lobby." In other words, participants did not feel that potentially harmful care could be considered as PCC. Furthermore, participants reported that balancing PCC and safety is not an easy process but is achievable. As one nurse stated, "I think it is a fine wire, but it can be done."

**Balancing is a continuum**—Participants envisioned the balance of PCC and safety as a continuum, largely dependent on patient factors. They described certain types of nonsurgical patients for whom it is relatively easy to balance PCC and safety in pain care, particularly opioid-naive patients with short-term, acute conditions (e.g., an opioid-naive patient with a fracture). In contrast, participants reported difficulties balancing PCC and safe care for nonsurgical patients with chronic pain, patients on long-term opioid therapy, or patients with an opioid use disorder (OUD). Clinicians specifically described difficulties managing hospitalized nonsurgical patients with chronic diseases, due to pre-existing, complex pain regimens from outpatient prescribers. These patients often were receiving high doses of opioids that hospitalists were not necessarily comfortable prescribing and administering. Our participants noted that if these patients did not receive the type of medication or dosage they were used to, they may have become frustrated. Additionally, patients with no apparent reason for their pain (e.g., abdominal pain of unclear etiology) were also described as being on the other end of the balancing continuum, as clinicians had no justification to prescribe opioids despite patient requests. As one nurse described it, "If they say [their pain] is high and you don't have any clinical factors, you have to try to keep them comfortable, again without overdoing it, so that is the more difficult patient." Younger patients and those perceived to be seeking secondary gain from opioids were also classified as "difficult." Participants perceived younger patients (e.g., patients in their 20s) as "more demanding" and often having complaints that could not be verified objectively to justify prescribing opioids but did not otherwise elaborate about this group.

Finally, participants said that there are certain patients for whom it is impossible to balance PCC and safety around pain care—namely, patients who they believed will never be satisfied

unless they are pain-free, receive a dangerously high dose of opioids, or receive opioids when contraindicated. One hospitalist described these patients as follows: "The ones that are unrealistic that, I can never have pain...I have to be at a pain level of 0. I mean you are never going to make that patient happy no matter what. So, patient-centered care at that point I do not think is realistic."

#### Strategies in balancing patient-centeredness and safety in pain care-

Participants reported several strategies that they use to balance PCC and safety in pain care. A particularly salient strategy was offering alternatives to opioids (e.g., nonsteroidal pain medications, repositioning). This strategy included identifying non-opioid treatments that have worked for the patient in the past and suggesting those instead. The second strategy was setting realistic pain goals and expectations (having tolerable pain as opposed to being pain-free) based on the patient's condition and overall health, something that clinicians recommended doing at the beginning of the hospital stay. Third, participants relied on explaining to patients why certain patient requests cannot be accommodated. These explanations often included patient education about potential short- and long-term side effects of opioids.

Participants, especially nurses, used negotiating and bargaining with patients as yet another strategy. As one nurse stated, "If I have someone that I have never seen before and they want a very aggressive pain management regimen, I often will bargain with them. Like, that is a lot of pain medicine. I do not feel comfortable. Let's just kind of start here, and we will titrate it as we need to." Additionally, clinicians tried to validate patients' perceptions of their pain when explaining risks or bargaining. Furthermore, participants used a team approach, which involved bringing multiple providers on board to achieve a balance between PCC and safety. As one health care manager stated, "[If the explanation is not accepted well] we will try to focus on bringing the physician and the nurse in there to all talk about it at the same time."

Finally, participants referred to a state law limiting opioid prescribing and pain treatment agreements, as in explanations and bargaining, helping deflect patient frustration away from hospitalists, nurses, and other health care team members. As one hospitalist stated, "There was a recent law that was passed in our state that allows us or encourages or prevents us from prescribing more than a week's worth of pain meds on discharge. It really helps us having that active discussion with the patient, especially the ones we know are going to have some trouble and say, hey, according to the new law I can't give you more than a week, and what that means is I need you to come down off it as soon as possible."

# Discussion

In our qualitative study, we observed that clinicians and health care managers agree that achieving a balance between PCC and safety is important. The awareness of the importance of PCC and safety may signal that messages from recent initiatives (e.g., the Patient Protection and Affordable Care Act, statements from professional societies)<sup>16,26</sup> are reaching their intended audience. However, our participants also reported challenges in balancing PCC and safety for certain patients. Several of the strategies we identified could

be considered as more provider-centered than patient-centered or not consistent with a desire to provide PCC. Below, we provide our explanations for these strategies and identify areas for future research.

In line with recent literature,<sup>27,28</sup> we found that our participants reported difficulties balancing PCC and safety for patients with chronic pain, patients on long-term opioid therapy, and patients with an OUD, often labeled as difficult. Labeling a patient as difficult is likely inconsistent with providing PCC and in fact may suggest an interest in avoiding care that fully considers patients' individual values, goals, or preferences. Given recent projections<sup>18,29</sup> indicating an increase in patients within these patient groups (patients with chronic pain, patients on long-term opioid therapy, and patients with an OUD), additional resources (e.g., mechanisms for coordinating care between hospital and outpatient settings, provider education) are needed to help clinicians and managers achieve balance between PCC and safety for these patient populations.

Participants also reported using various strategies to balance PCC and safety in pain care for nonsurgical inpatients. Specifically, they reported offering alternatives to opioids (e.g., nonsteroidal pain medications, repositioning) to address patients' pain care needs while meeting the safety standards. Despite the wide array of nonopioid pain medications available, little evidence exists on their effectiveness in addressing acute pain care needs of difficult patients as perceived by our participants. Nevertheless, recent evidence from the outpatient setting suggests that opioid treatment is not superior to treatment with nonopioid medications for improving pain-related function for patients with chronic musculoskeletal pain.<sup>30</sup> Thus, future research should rigorously analyze the effectiveness of various nonopioid pain alternatives in addressing the pain care needs of nonsurgical inpatients that are perceived as more difficult. Furthermore, given that patients with chronic pain are often skeptical about the efficacy of nonopioid medications to control their pain,<sup>31</sup> future research should adopt existing evidence-based educational approaches or decision support tools that may help clinicians and patients discuss evidence-based treatments and collaboratively identify acceptable, safe, and likely effective treatment plans.<sup>32,33</sup>

Our participants also reported having early discussions with patients in which realistic pain goals and expectations were set in a collaborative process. Such goal setting involves communicating with the patient and respecting patient preferences, both important components of PCC, while at the same time informing patients of treatment limitations due to lack of feasibility or safety. Setting realistic goals early may also help improve the clinician-patient relationship by moderating patient expectations and preventing them from being disappointed by unmet goals.

Noticeably, our participants did not mention patient-clinician or patient-health manager discussions about the role of psychosocial factors in the experience of pain, even though psychosocial factors significantly contribute to pain perceptions and may influence treatment outcomes.<sup>34</sup> A holistic rather than a disease-focused approach to health care is an important part of PCC. Thus, future research should examine the barriers to and facilitators of patient-clinician and patient-health manager discussions of psychosocial factors during inpatient

care. Furthermore, future studies should investigate how to optimally integrate psychosocial principles into inpatient pain care to enhance patient outcomes.

Our participants also described using a team approach, by including pharmacists, psychotherapists, or social workers to balance PCC and patient safety. A team of interdisciplinary professionals may be better able to provide holistic pain care and address psychological, social, and physical needs than one professional alone.<sup>37,38</sup> However, few hospitals are able to consistently employ a comprehensive pain care team, due to limited resources. Thus, additional research is needed to design and assess the efficacy of innovative strategies that will improve availability of a team approach for nonsurgical patients requiring pain care.

Finally, our participants reported using recent opioid management guidelines and state laws limiting opioid prescribing as useful conversational tools, especially with more difficult patients. Our findings are in line with recent literature that shows clinicians use guidelines and state policies to facilitate communication about opioids.<sup>27,28,35</sup> Recent studies<sup>24,34</sup> also highlight clinician concerns over increased regulation of opioid prescribing that may hinder their ability to provide PCC, especially in the area of pain care. On the other hand, such clinician attitudes may be viewed as an attempt to deflect the responsibility for prescribing decisions to something other themselves. Thus, additional research is needed regarding the potential role of educational efforts and decision support tools to help clinicians communicate with their nonsurgical patients without restricting their ability to make patient-centered pain care decisions.

# Limitations

Our study has limitations. Although we reached thematic saturation in our analysis, a more diverse sample of participants might have elicited a more extensive range of perspectives. Also, our study was performed in one health care system in Midwestern United States, and results may not be transferable to other settings. With that said, this region of the country has been particularly affected by opioid misuse and abuse, making it an important area to study. Additionally, O.M. conducted all the interviews and co-led the analysis, thus creating a potential for biasing the study findings. To overcome this issue, other study team members provided in-depth insight into all aspects of the study.

# Conclusions

In response to recent initiatives, clinicians and hospital managers are striving to deliver PCC and safe pain care for hospitalized nonsurgical patients. Furthermore, they deploy various strategies to achieve a balance between PCC and safety. Future studies should examine the effectiveness of these strategies on patient outcomes.

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# Healthcare Administrators Interview Guide

#### Introduction

I am working on a project funded by the Indiana University to better understand existing pain care practices for patients in the hospital. The findings from this study will help clinicians to deliver safe and patient-centered care. As a healthcare administrator who is responsible for improving quality and safety for hospitalized patients, your perspective is very valuable to our study.

The focus of this interview is to gather your thoughts about patient experiences and pain management at your hospital. There are (two/three) parts to the discussion today.

- General information about your hospital and your position (role; tenure; etc.)
- Patients' experiences, satisfaction, and well-being while in the hospital satisfaction
- Pain management

#### Do you have any questions before we begin our conversation?

Before we get started, I wanted to ask if it would be all right if we record this discussion. We only do this because we can't write everything down. The recordings will be treated as confidential and only shared with the research team. If at any point you would like us to turn off the recorder, just let me know.

If you don't have any questions, please review and sign this informed consent form. This informed consent form contains detailed information about this study, as we've discussed above. If you agree to participate, you will be one of 30 individuals subjects who will be participating in this research. During the interview that will last approximately 45 minutes you will share your perceptions on patient satisfaction, pain care, the relationship of pain and satisfaction, and opioid prescribing. You will be free to decline to answer any question and to end your participation at any point. This consent form will indicate that you are willing to participate in the study. You are free to decline to participate after you learn more about the study and to end your participation at any time. There are risks involved in all research studies. This study includes only minimal risks. For example, you may become uncomfortable when answering some questions. You can decline to answer any question at any time without any negative consequences. Your participation in this study cannot guarantee any direct benefits. Your participation may help policymakers, healthcare administrators, and clinicians in their efforts to achieve patient-centered pain care while also curbing the national opioid epidemic.

**General information**—Please describe your role in the hospital (prompts: how long have you been with this hospital; what are your responsibilities; did you work at other IU facilities prior to this role; what is your educational background)

Patients' experiences, satisfaction, and well-being while in the hospital satisfaction—In your opinion, what are the most important things for patients to have positive experiences while there are in the hospital? Why? [Are these factors differ for non-surgical patients? If Yes, Why? If not, why? ]

When thinking about patient satisfaction, what is the connection between patient satisfaction and patient experience? Are they synonyms for you? If not, how they differ? Are the same factors that determine patient experiences important for patient satisfaction? If not, how do these factors differ?

Please describe any initiatives aimed at improving patients' experiences, satisfaction, or well-being while in the hospital taking place at [hospital name] (*prompts: when, who started, what target, how long, what was your role).* 

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Are these initiatives successful in improving patients' experiences, satisfaction, or wellbeing while in the hospital? If yes, how do you measure success? If not, why?

How these initiatives fit in the overall hospital/system mission and vision?

How would you define patient-centered care? What are the most important determinants of patient-centered care? Are these determinants differ for non-surgical patients? If Yes, why? If not, why? ]

Do you see a connection between patient-centeredness, patient experience and patient satisfaction? IF yes, how? If not, why?

**Pain management**—Are you aware of explicit pain care policies, programs, or activities for hospitalized patients in your hospital? If yes, what are they (and when implemented)? [Additional probes: Tell me more about that policy/program/activity; What are the goals of the policy/program/activity? When did it start? How has it been received by staff? By patients? Do you think it's achieving (will achieve it's goals) What are the challenges in implementing this policy/program/activity? How are you trying to overcome these challenges?]

Are these policies, programs, or activities patient group specific, such as surgical verus nonsurgical patients? If yes, how?

If your hospital does not have explicit pain care policies, programs, or activities for hospitalized patients, does your hospital monitor pain care practices of staff? How?

Does [hospital name] have any explicit opioid prescribing policies for hospitalized patients? If yes, what are they (and when implemented)? Are these policies patient group specific, such as surgical verus non-surgical patients? If yes, how?

Do you think that patient satisfaction/experience/well-being and pain care practices are related? Probe: Do you think that clinicians think about satisfaction/experience/ well-being when managing pain? If yes, how? If not, why? Do you think clinicians' approaches differ depending on the patient type, such as surgical versus non-surgical patient? ? If yes, how? If not, why? Can you give an example?

Recent healthcare initiatives, such as Affordable Care Act, Joint Commission statement on pain management etc. call hospitals to provide safe and patient-centered pain care. Specifically, these initiatives encourage hospitals to establish policies/programs/activities regarding pain assessment, pain treatment, and patient safety. These policies/programs/ activities should inform clinicians about ways to balance safe and patient-centered care. Are you aware of these calls? If yes, what exactly do you know? Do you think these calls are feasible? If yes, how? If not, why? What is your personal interpretation of these calls? Are you supportive of these initiatives?

#### Closing

Thank you again for taking the time to speak with us. Your first-hand perspective is very valuable to our research. We have learned a lot from this discussion.

# **Clinicians Interview Guide**

### Introduction

I am working on a project funded by the Indiana University to better understand existing pain care practices for patients in the hospital. The findings from this study will help clinicians to deliver safe and patient-centered care. As a clinician who is taking care of hospitalized patients, your perspective is very valuable to our study.

The focus of this interview is to gather your thoughts about patient experiences and pain care at your hospital. There are three parts to our discussion today.

- General information about your position (role; location of your practice; etc.)
- Concept of patient-centered care, including patients with pain
- Concept of safe care, including patients with pain

#### Do you have any questions before we begin our conversation?

Before we get started, I wanted to ask if it would be all right if we record this discussion. We only do this because we can't write everything down. The recordings will be treated as confidential and only shared with the research team. If at any point you would like us to turn off the recorder, just let me know.

If you don't have any questions, please review and sign this informed consent form. This informed consent form contains detailed information about this study, as we've discussed above. If you agree to be interviewed, you will be one of 30 individuals who will be participating in this research project. During the interview that will last approximately 45 minutes, you will share your perceptions on patient-centered care, patient safety, and the relationship between these two constructs. You are free to decline to answer any question and to end your participation at any point. This consent form indicates that you are willing to participate in the study. There are risks involved in all research studies. This study includes only minimal risks. For example, you may become uncomfortable when answering some questions. You can decline to answer any question at any time without any negative consequences. Your participation in this study cannot guarantee any direct benefits. However, your participation may help policy makers, health care administrators, and clinicians in their efforts to improve care while also curbing the national opioid epidemic.

**General information**—Please describe your role in the hospital (prompts: how long have you been with this hospital; did you work at other IU facilities prior to this role; do you practice in other IU facilities; what type of patients do you mostly see; are you a full-time or part-time employer; are you involved in research)

**Patient-centeredness**—What is your understanding of a concept of patient-centered care? [Probs: Do you think about patient-centeredness when you are treating patients? If yes, how? If not, why?]

How do you think about patients' preferences and values when you are treating them? \*Probs: Do you ask for patient's preference prior to choosing a treatment plan? If yes, what do you ask? If no, why you don't ask?]

How do you think about patients' experiences while there are in the hospital? \*Probs: Are there explicit things that you do to make sure that this patient is having a good experience/is satisfied? If yes, what are these things? If not, why you don't consider patient experiences? Do you feel that it is beyond your job description to take care of patient's experiences/ satisfaction while they are in the hospital?]

**Patient-centeredness & pain care/opioids**—Earlier in our discussion, we talked about a concept of patient-centered care. How do you apply this concept to patients with pain? [Probs: Do you see that patients have different preferences for their pain care? If yes, what are they? If not, why do you think patients are asking for the same pain care?]

Are there differences between non-surgical and surgical patients in terms of preferences for pain care? If yes, what are they? If not, why do you think these patients have similar preferences?

Do you think that concerns about patient experience affects your decisions around pain care? If yes, how? If not, why? Can you give an example? Are there differences between surgical and non-surgical patients? [Additional probs: How do you factor in patient's preferences for a particular pain medication, such as opioids, in your clinical decision-making process? Is it easier accomplished for some patients versus others? Can you give an example?]

**Patient satisfaction surveys**—Tell me please your experiences with patient satisfaction surveys [Probs: Do they affect your decision-making? If yes, how? If not, why?]

Do you see patient satisfaction surveys affecting other clinicians/your clinical team decisionmaking processes? If yes, how? If not, why?

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Several hospitals use satisfaction surveys to assess the quality of care. What is your opinion about this approach [Probs: Are you supportive of this approach? If yes, how? If not, why?]

**Patient Safety**—How do you think about patient safety when you are treating patients? [Probs: Do you consider patient safety when you are choosing a treatment plan for a particular patient? If yes, how? If not, why?]

How do you think about risks/adverse events when you are choosing a treatment plan for a particular patient? [Probs: Are there certain things/events you are trying to avoid? Are these things different for surgical versus non-surgical patients?]

Are you more concerned about certain short-term or long-term risks of treatment while patient is in the hospital? Why? Do you think differently about short versus long-term risks for surgical versus non-surgical patients?

Is it your job to think about patient safety issues? If yes, how? If not, why? [Additional probs: how do you work with your team to address potential patient safety issues?]

**Patient Safety & pain care/opioids**—Please describe your approach to pain care for hospitalized patients. [Probes: How do you decide who will be given opioids? What objective and subjective information do you take into consideration when making a decision to prescribe opioids versus other pain medications? Can you give an example of a patient who would be a good candidate to receive opioids?]

Let's talk about pain care and patient safety. How do you approach patient safety when you manage patient with pain? [Probs: Do you worry about ADEs, such as sedation/OD/SUD when you prescribe opioids? If yes, how? If not, why?]

**HCAHPS/P.S. surveys/pain care**—Existing patient satisfaction surveys ask patients about their satisfaction with pain care provided while they were in the hospital. What is your opinion about these scores? [Probs: Do you feel that these scores are affecting your decision-making process? If yes, how? If not, why?]

**Patient Safety & Pt satisfaction**—Let's talk again about patient satisfaction. How patient safety aligns with patient satisfaction? [Probs: Do you think it is feasible to provide care that is safe and leads to high patient satisfaction? If yes, how? If not, why?]

Is there anything else we should have asked you about patient-centeredness, patient experiences, patient safety and pain care that we did not? Anything else we should know? [Probs: What are the biggest challenges in providing safe and patient-centered care? What is an ideal pain care approach to hospitalized patients?]

### Closing

Thank you again for taking the time to speak with us. Your first-hand perspective is very valuable to our research. We have learned a lot from this discussion.

The COREQ checklist by Tong, Sainsbury and Craig (2007) completed for the study: Balancing patient-centered and safe pain care for non-surgical inpatients: clinical and managerial perspectives.

Domain 1: Research team and reflexivity		
Personal characteristics		
1. It is reported that the first author conducted the interviews.		
2. The authors' degrees are not reported in the main body of the manuscript. The first author holds an MD and PhD degrees. The second author holds a JD and PhD degrees. The third and fourth authors hold an MD degree. The fifth author holds a PhD degree.		
3. The authors' occupations are not reported in the manuscript. When conducting this project and writing the paper the first and second authors were assistant professors with research being their predominant responsibility. The third and the fourth authors are active practicing clinicians. The fifth author is an associate professor and a researcher.		
4. The authors' gender is not reported in the manuscript. The first, second, and fourth authors are females. The third and fifth authors are males.		
5. All authors have extensive training and experience in performing qualitative research. It is mentioned that the interviewer, i.e. the first author had extensive experience of interviewing at the time of data collection. The first, second, and fifth authors have an in-depth knowledge of health services research. The third and fourth authors have an in-depth knowledge of clinical practice.		
Relationship with participants		
6. The study participants had no prior contact with the interviewer and other authors.		
7. All study participants were informed at all interviews about the purpose of the research.		
8. Interviewer characteristics were not reported to study participants.		
Domain 2: Study design		
Theoretical framework		
9. It is reported that data were analyzed with a modified version of the thematic analysis approach.		
Participant selection		
10. It is reported that participants were recruited using purposive sampling approach.		
11. It is reported that potential participants were approached through e-mail communications and referrals. It is also reported that interested participants contacted the first author via e-mail to schedule an interview. All interviews were conducted in-person (see description of data collection on pp. 4–5).		
12. It is reported that the sample consists of 30 individuals.		
13. The number of eligible participants, the number who agreed to participate and the attrition rate is reported.		
Setting		
14. The interviews took place either at the first author's office located on the University campus or at the participant's offices located in the hospitals. These aspects are not mentioned in the manuscript.		
15. Nobody besides the interviewer and a study participant was present during the interviews.		

16. Important characteristics of the sample are reported both in the Results section and in the Table 1.
Data collection
17. It is reported that interview questions were pilot-tested and that the interviewer was supportive and asked follow up questions in order to help the respondent to elucidate his/her answers.
18. We did not carry out repeat interviews with our study participants.
19. It is reported that the interviews were audio-recorded.
20. Field notes were not taken during or after the interviews. This is not mentioned.
21. It is reported that the interviews lasted approximately 45 minutes.
22. It is reported that we ensured data saturation in our analysis, such that no new themes were emerging from the nterviews.
23. Transcripts were not returned to participants. This is not mentioned.
Domain 3: Analysis and findings
Data analysis
24. It is reported that the first and second author coded the data.
25. The steps by which interview data were coded, is reported.
26. It is reported that the themes were derived from data.
27. It is reported that Dedoose qualitative analysis software was used throughout the analysis process.
28. Participants did not provide feedback on findings. This is not mentioned.
Reporting
29. Participants' quotations are presented to illustrate categories and for each quotation the respondent's number is reported.
30. There is consistency between the data presented and the findings.
31. The major themes are clearly presented in the Results and Discussion sections.
32. The minor themes and description of diverse cases are not presented due to the space limitations.

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#### Table 1.

### Participant Characteristics

	Physicians (n=10)	Registered nurses (n=10)	Health care managers (n=10)	Total
Gender				
Male	8	0	5	13
Female	2	10	5	17
Race				
White	6	9	9	24
African-American	0	1	1	2
Asian	4	0	0	4
Work experience (years)*				
Mean	12	9.7	16	n/a
Median	9	10	15	n/a
Range	2-18	1–32	2-30	n/a
Years with organization				
Mean	6.3	7.5	9	n/a
Median	5	5.5	6	n/a
Range	1-18	1–14	1–30	n/a

\*Work experience excludes time in training, such as residency.

#### Table 2.

# Emergent Themes with Illustrative Quotes

Theme	Illustrative Quote		
Balancing patient- centeredness and safety in pain care			
	I think it is a fine wire, but it can be done (Nurse, Female; White; Participant 13).		
	Patient-centered and safe care should go hand in hand (Inpatient unit manager; Male; White; Participant 15)		
	I think that is exactly what we try and do every day. Provide care that is patient-centered, safe, and effective (System-level healthcare manager; Male; White; Participant 10).		
Balancing is a continuum	It is easier when somebody has a brief sickness. You tell them, this is the plan and then they will be: "ok that's fine." I say it's a challenge for patients who have regular chronic readmissions (Hospitalist; Female Asian; Participant 25).		
• Easier patients	I think that if anybody breaks a bone, they definitely deserve to feel comfortable and are good candidates f opioids (Hospitalist; Male; Asian; Participant 1).		
<ul> <li>Difficult patients</li> </ul>			
Younger patients	Oftentimes I see young patients of unknown etiology that have had extensive diagnostic workup and no etiology has been determined as a cause of their pain. They are young women in their 20s that have this chronic abdominal pain with no etiology, despite this vast workup. I feel like sometimes they are part of tha patient population that is very insistent about particular pain medication, such as opioids (Nurse; Female; White; Participant 4).		
Patients with chronic illness	Patients who have chronic pain outside the hospital pop to mind as being particularly difficult (System healthcare manager; Male; White; Participant 31).		
Patients who are on chronic opioids or have an opioid use disorder	c It is harder with people who are on opioids chronically. There is only so much dose escalation that you can be fore there is contraindication to giving more. There are really impressive quantities of narcotics that people can get tolerant to. I calculated a dose equivalent for one patient and it was 3 grams of morphine. This person was walking around functioning. For most people you wouldn't even need to get close to that and it would kill them (Hospitalist, Male; White; Participant 5).		
Patients for whom it is impossible to balance PCC and safety	The ones that are very seldom happy with their care, you have what we call "regulars" that come in and the are always unhappy no matter what you do for them (Inpatient unit manager; Male; White; Participant 15).		
Strategies in balancing patient-centeredness and safety in pain care			
• Offering alternatives to opioids (e.g., nonsteroidal pain medications, repositioning)	We offer alternatives, like, let's do this instead, let's try a Lidoderm patch instead, or let's try nonsteroid medication instead (Nurse, Female; White; Participant 4).		
• Setting realistic pain goals and expectations (having tolerable pain as opposed to being pain-free)	We usually talk how patients are still going to have some pain and we are not taking their pain all the way down to 0 (Hospitalist, White; Male; Participant 6).		
	One of the things that we started trying to do is during admission, asking the patient, where is your tolerable pain level? Because we are not going to get you to being pain free. Even in the hospital, we are not going to get you pain free all the time, so what is your tolerable level and see if we can get you to that (Inpatient unit manager, Male; African-American; Participant 21).		
	So when I walk in to the patient's room, I will be like, what do you normally run at? They'll be like 4. Wher are you at currently? They'll be like 8. I'll be like, listen, I know your baseline is 4, you are at 8. This is expected. You have a flare up and you are expected to be around 8. So if reasonably I can get you at 6 or 7, think that would be the expectation that you should have and then eventually, by the time you are ready to be discharged, we can get you to 4 or 5. That's what I tell them and it's been working great (Hospitalist, Female; Asian; Participant 25).		
	I will try to establish a pain goal, what it is it that you can tolerate. What is okay for you where you wouldn need medication. So depending, oh a 3 or a 5, and say okay, well let's try and keep you or get you there (Nurse; Female; African-American; Participant 23).		
• Educating about potential short- and long-term side effects of opioids.	We talk about why pain meds were ordered, and why we would give one versus the other. We would talk about the side effects that would come with those (Nurse; Female; White; Participant 8).		

Theme	Illustrative Quote
<ul> <li>Negotiating and bargaining</li> </ul>	If I have someone that I have never seen before and they want a very aggressive pain management regimen, I often will bargain with them. Like, that is a lot of pain medicine. I'm not comfortable. Let's just kind of start here, and we will titrate it as we need to (Nurse, Female; White; Participant 4).
• Using a team approach	If the explanation is not accepted well we will try to focus on bringing the physician and the nurse in there to all talk about it at the same time (Inpatient unit manager; Male; White; Participant 20).
• Referencing a state law limiting opioid prescribing and "pain treatment agreements"	There was a recent law that was passed in our state that allows us or encourages or prevents us from prescribing more than a week's worth of pain meds on discharge. It really helps us having that active discussion with thepatient, according to the new law I can't give you more than a week, and what that means is I need you to come down off it as soon as possible (Hospitalist; Male; White; Participant 31).
	That was the new state law that came into effect. So the seven days, but there are also some of the other prescribing, so you can quote those to folks, but you know I think it is trying to figure out also why the acute pain versus the chronic opioid abusers. I think that pile is going to be difficult to fix in a small acute three to five window, but you have to be not contributing to that problem. Look, I am not giving you 60 tablets of whatever, you know. You have been using this, this is what we are giving you. In educating them, look, do not drive, do not drink, do not operate heavy machinery, do not do anything on these narcotics. So you just have to consistently reducate folks (Hospitalist, Male; White; Participant 2).

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