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# Pain management in trauma: the need for trauma-informed opioid prescribing guidelines

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## ABSTRACT

**Background/objectives** Surgical populations and particularly injury survivors often present with complex trauma that elevates their risk for prolonged opioid use and misuse. Changes in opioid prescribing guidelines during the past several years have yielded mixed results for pain management after trauma, with a limiting factor being the heterogeneity of clinical populations and treatment needs in individuals receiving opioids. The present analysis illuminates this gap between clinical guidelines and clinical practice through qualitative feedback from hospital trauma providers and unit staff members regarding current opioid prescribing guidelines and practices in the setting of traumatic injury.

**Methods** The parent study aimed to implement a pilot screening tool for opioid misuse in four level I and II trauma hospitals throughout Wisconsin. As part of the parent study, focus groups were conducted at each study site to explore the facilitators and barriers of implementing a novel screening tool, as well as to examine the current opioid prescribing guidelines, trainings, and resources available for trauma and acute care providers. Focus group transcripts were independently coded and analyzed using a modified grounded theory approach to identify themes related to the facilitators and barriers of opioid prescribing guidelines in trauma and acute care.

**Results** Three major themes were identified as impactful to opioid-related prescribing and care provided in the setting of traumatic injury; these include (1) acute treatment strategies; (2) patient interactions surrounding pain management; and (3) the multifactorial nature of trauma on pain management approaches.

**Conclusion** Providers and staff at four Wisconsin trauma centers called for trauma-specific opioid prescribing guidelines in the setting of trauma and acute care. The ubiquitous prescription of opioids and challenges in long-term pain management in these settings necessitate additional community-integrated research to inform development of federal guidelines.

**Level of evidence** Therapeutic/care management, level V.

### WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Persistent prescription opioid use is common in the USA, with approximately 3.5 million individuals reporting such use, of whom 10.6% report having had an injury. The Centers for Disease Control and Prevention (CDC) released opioid prescribing guidelines in 2016 that failed to provide specific guidance for trauma and acute care patients. While the updated 2022 CDC guidelines highlight the role that opioids can play in treating both non-traumatic and traumatic injuries, they continue to lack specific and encompassing guidance for opioid prescribing in the setting of trauma and acute care. The complex nature of traumatic injuries and commonness of opioid prescribing in trauma and acute care warrant further research to identify facilitators and barriers to effective pain management among this population, particularly as they relate to prescribing guidelines.

### WHAT THIS STUDY ADDS

⇒ This study examines the effectiveness and pertinence of opioid prescribing guidelines in the setting of trauma and acute care from the perspective of providers and staff at level I and level II trauma centers in Wisconsin. Results from the study emphasize how opioid prescribing guidelines are impacting acute treatment practices and patient interactions surrounding pain management, and the influence of the multifactorial nature of traumatic injury patients on pain management techniques.

### HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The results of this study serve as a call to action to establish clear guidelines surrounding opioid prescribing in the setting of trauma and acute care. Current practice would benefit from revisions in current CDC guidelines to include a subset of trauma-specific considerations for opioid prescribing. Additional research may be warranted to identify how trauma-specific guidelines would best be implemented in real-world practice, as well as their potential impact on patient care.

## BACKGROUND

Approximately 3.5 million individuals report persistent opioid use in the USA, with injured individuals constituting approximately 10.6% of this population.[1] Several populations constitute the individuals at heightened risk for prolonged opioid use and misuse, including surgical populations and traumatic injury survivors.[2–5] Treatment for surgical and traumatic injury patients involves multiple providers from a variety of healthcare resources, resulting in a complex, multidimensional clinical presentation. The complexities embedded within

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traumatic injury necessitate specific, tailored federal guidelines to direct providers in successfully managing their patient's pain and risk for opioid misuse.

Prior research has investigated the effectiveness of federal guidelines for opioid prescription practices; however, the majority of these data have come from chronic pain populations,[6] with limited recommendations for trauma and acute care.[7 8] For instance, one recommendation within these guidelines pertinent to acute pain treatment includes prescribing the lowest effective dose of opioids possible for ≤3 days. However, these guidelines only applied to non-traumatic and non-surgical acute pain, failing to offer any recommendations specific to trauma and acute care populations.[6] In lieu of these shortcomings, healthcare systems and providers have adapted their opioid prescribing practices to address the risk for opioid misuse for patients hospitalized for traumatic injury.

While the recent 2022 Centers for Disease Control and Prevention (CDC) opioid prescribing guidelines do attempt to define acute pain as having a duration of less than 1 month, additional recommendations included for trauma and acute care patients are minimal.[9] Moreover, Wisconsin requires 2 hours of opioid-related continuing medical education (CME) every 2 years to maintain licensure in the state; however, the opioid-specific CME credits are not necessarily specific to trauma-related care.[10] In addition to complications surrounding acute and chronic pain, patients with traumatic injury often have comorbid mental health and substance use diagnoses that were either pre-existing or emergent after the trauma; such comorbidities may complicate pain management and clinical decision-making.[11–13] Minimal research has elucidated the treatment needs and nuances for individuals suffering from traumatic injuries, as seen from the perspective of providers. To address this dearth in research, the present qualitative study investigated how trauma and acute care providers incorporated the 2016 opioid prescribing guidelines into patient care plans, the facilitators and barriers prescribers encountered when treating traumatic injury survivors, and the implications of study findings on current and future opioid prescribing guidelines.

## METHODS

### Study design

The parent study—Screening in Trauma for Opioid Misuse Prevention—was a mixed-methods study that identified risk factors for opioid misuse in patients with traumatic injury to develop a screening tool assessing risk for opioid misuse after injury.[14] Data were collected at four level I and level II trauma centers throughout Wisconsin. The reader is referred to the parent study's protocol and primary outcomes publications for a full description of methods and results.[14 15]

### Intervention and setting

During phase IV of the parent study, a 4-item screening tool was implemented within four level I and level II trauma centers through a systems consultation approach using Plan, Do, Study, Act cycles.[16] Each of the four trauma centers consisted of an initial clinician at each site, who provided consent to participate in the study. These individuals assembled a change team of hospital staff who would be relevant stakeholders for the project. Change team members were identified by the initial clinician and hospital staff rather than the research team to minimize selection bias and ensure team members were indeed relevant stakeholders. Each change team included at least one trauma care prescriber and several trauma unit staff members (eg, advanced practice providers, nurses).

**Table 1** Focus group sample sizes and associated roles

| Site | Sample size | Roles of change team members present at focus group |
|---|---|---|
| North | 4 | Alcohol and other drug inpatient specialist<br>Director of substance abuse services<br>General surgery resident (PGY-2)<br>Trauma surgeon |
| South | 7 | Performance improvement nurse (n=2)<br>Trauma and acute care clinical nurse specialist<br>Trauma and acute care nurse<br>Trauma and acute care nurse manager<br>Trauma and acute care nurse practitioner (n=2) |
| East* | 7 | Social work educator<br>Social work manager<br>Trauma and acute care nurse<br>Trauma and acute care nurse/pain resource contact<br>Trauma and acute care nurse practitioner and faculty<br>Trauma and acute care pharmacist<br>Trauma and acute care research coordinator |
| West | 4 | Trauma and acute care manager<br>Trauma and acute care nurse practitioner<br>Trauma and acute care physician assistant<br>Trauma surgeon |

*East's change team did include a trauma surgeon, but they were unable to attend the focus group due to scheduling conflicts and, therefore, their recommendations and feedback were not included in this analysis.

At the end of the implementation phase, all four sites participated in semistructured focus groups to elicit feedback on the implementation process, as well as elucidate current opioid prescribing practices in the setting of traumatic injury. Focus groups were led by a member of the research team unknown to the change teams to ensure candid feedback on the implementation process and its potential impact on their practice if a similar screening tool were to be validated.

### Data collection

Data for this analysis were collected between Fall 2019 and Spring 2020. Sixty-minute focus groups were conducted at the conclusion of the 6-month research period with each of the four study sites (coded as North, South, East, and West). Focus group sample sizes and associated roles of change team members can be found in table 1. These focus groups explored an overview of the 2016 CDC and institution prescribing guidelines, the impact of the current guidelines on treatment practices, facilitators and barriers of implementing the pilot screening tool, and recommendations for screening tool and implementation improvement. Focus group discussions were transcribed for analysis. This analysis specifically investigates the current Food and Drug Administration and hospital-specific opioid prescribing guidelines and their role in the treatment of traumatic injury victims.

### Data analysis

Two independent coders reviewed qualitative data collected during phase IV of the parent study, including transcripts of the focus groups. The two coders independently completed their data review during each round of data analysis to ensure coding reliability. A total of three rounds of coding were completed; after each round of analysis, the coders compared and consolidated findings. The first round of coding included thematic analyses using the Consolidated Framework for Implementation



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Research (CFIR) model.[17] After coder comparison and consolidation, a second round of thematic analyses was conducted to further consolidate the identified subthemes into broader categories, thus producing a set of overarching themes relating the many subthemes identified in round 1. While the study team recognized that the CFIR model was an appropriate model to ground the analysis, a thematic analysis was pursued in the following coding round to better explore the findings that did not readily fit within the predefined CFIR model. Finally, the third round of thematic analyses was completed to further coalesce identified themes.

## RESULTS

Three major thematic categories related to opioid prescribing in the setting of trauma and acute care were identified among the four trauma sites (table 2), including (1) acute treatment strategies; (2) patient interactions surrounding pain management; and (3) the multifactorial nature of trauma. The reported themes represent the perceptions that the trauma and acute care teams have of opioid prescribing guidelines, or lack thereof, in the context of traumatic injury. Additional illustrative quotes beyond those highlighted can be found in table 3.

### Acute treatment strategies

All four study sites reported the need for acute treatment guidelines (duration of <1 month) for treating trauma and acute care patient's injuries and associated pain.[9] Participants expressed a tenuous reliance on contemporaneous opioid prescribing guidelines that lacked a trauma focus. As one participant explained:

> There is a difference [in pain management plans] if someone has had surgery as a result from being in a car accident versus if they've had their gallbladder out. (North)

#### Available resources to guide opioid prescribing

Within this current framework, providers identified a handful of resources they use for inpatient and discharge care planning. Participants occasionally mentioned using federal-level resources available (eg, Prescription Drug Monitoring Program (PDMP), n=1; supplemental handouts from CDC, n=1), while more often citing the use of institution-specific resources, such as patient educational brochures (n=2) and pain resource teams (n=1). While these resources were reported to provide general support for prescribing opioids, they are not trauma specific and fail to account for the multifactorial complexities that all four sites indicated trauma patients present with.

#### Over-reliance on clinical judgment

Three of four sites also expressed concerns surrounding an over-reliance on clinical judgment to determine a patient's risk of opioid misuse. These sites argued that such subjective interpretations could introduce implicit biases and inconsistent, unreliable methods to basic clinical care planning. In lieu of established guidelines for assessing prescription opioid misuse (POM), all four sites indicated approximating resources that have not been validated as POM screeners (eg, mental health and substance screeners).

> There's nothing that we are doing to screen [for opioid misuse risk] really, and it ends up being, quite honestly, personal prejudices … that are based on past history or … past experiences … and, quite honestly, we go on gut feeling… (West)

With regard to these challenges, all four sites agreed that the introduction of improved federal and institutional guidelines in the setting of trauma and acute care would serve as a valuable resource when confirming clinical judgments and navigating care planning.

#### Guidelines for acute care are insufficient

Each study site identified a lack of involvement in long-term patient care as a barrier to determining best practices. Patients most often follow-up with primary care providers for long-term care management, including oversight of pain control prescriptions (n=4). The CDC provided guidelines for managing acute pain, which hospital providers find helpful (n=2); however, the emphasized focus on acute care rather than additional guidance on and oversight of long-term care management in this population limits important treatment plan considerations for patients recovering from traumatic injury.

> Concerns about opioids is just the escalation of use inpatient and then weaning them off for discharge … how to get them off completely over time when you may not see them for a couple of weeks after discharge [is an added complexity in this population]. (East)

Due to this limitation in guidance, discharge prescriptions frequently address acute pain but relinquish subsequent care oversight to primary care teams (n=3). Moreover, trauma clinical care providers reported minimal long-term communication with primary care providers after discharge (n=2). Two sites expressed hesitation to begin tapering opioid medications so early into their treatment course, due to the need for adequate pain control during the often lengthy recovery process and the risk for adverse events related to pain management.[18] To address the lack of trauma-informed guidelines and minimal long-term patient care, trauma providers indicated seeking out published guidance and relying on their own clinical experiences as two common references for pain management. For example, clinicians at one site determined prescriptions at discharge by the amount of opioids administered in the 24 hours before discharge.[19 20] Additionally, based on interactions in brief follow-up appointments prior to the transition to primary care oversight, participants also suspect that many of their patients experienced better outcomes with less opioid medications after hospital discharge, compared with patients with more opioid medications (n=1). Participants cited the utilization of many non-opioid approaches as successful ancillary treatments to opioid prescriptions (n=2).

#### Staff trainings for pain management

Findings also indicate a need for enhanced training and education, in addition to revised prescription guidelines in the setting of traumatic injury. Only two focus groups mentioned mandatory opioid education at their site. One site indicated mandatory opioid, acute pain, and multimodal pain management for all prescribers, whereas the second site only indicated education surrounding morphine equivalence in opioid prescribing. In addition, three participating institutions also indicated offering local policy support, such as facility-specific trauma pain guidelines required for all patients on the trauma service and enforced by trauma and acute care clinicians. Three sites also indicated the importance of targeting training toward hospital staff involved in opioid prescribing. For example, pharmacists may be responsible for medication reconciliations on discharge but lack the necessary tools to know what social or environmental barriers patients experience that could impede their medication usage after discharge (n=2). Similarly, education targeting prescribers



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Table 2 Trauma provider's experiences and feedback with opioid prescribing guidelines

| Theme | Subtheme | Supporting evidence | n (total n=4) |
|---|---|---|---|
| Acute treatment strategies | Current practices | Local resources available to assist with pain management decision-making, but not specific to trauma | 4 |
| | | Use of Prescription Drug Monitoring Program (PDMP) by trauma prescribers to inform treatment and discharge prescription planning | 1 |
| | | Using substance use and mental health admission screeners to extrapolate opioid misuse risk and inform care planning | 3 |
| | | Interpretation of pain (eg, scale 0–10) is subjective, making adaptation of potential guidelines difficult | 1 |
| | | Lack of guidance for opioid prescribing at discharge | 4 |
| | Current federal guidelines | Improved guidelines for opioid prescribing outside of trauma | 4 |
| | | Federal guidelines offer additional resources to institution guidance for confirming clinical judgments | 3 |
| | Clinical judgment | Clinician's subjective interpretation of patient risk | 3 |
| | | Clinicians refer to research and guidelines to determine best practice | 4 |
| | Discharge prescribing considerations | Trauma prescribers limit discharge opioid prescriptions to address acute pain | 3 |
| | | Lack of long-term patient follow-up with trauma providers, as often with primary care | 4 |
| Patient interactions surrounding pain management | Patient education and counseling | Opioid misuse screener would facilitate communication between clinicians and patients regarding pain expectations and risk of misuse | 3 |
| | | Opioid misuse screener would increase patient education regarding opioid use, misuse, and excess medications | 2 |
| | | Use of education handouts, flyers, and brochures for in-hospital and postdischarge medication management | 2 |
| | | Setting realistic expectations with patients assists with pain management | 3 |
| | Staff member roles | Interdisciplinary approach to determining discharge prescription decisions | 2 |
| | Postdischarge follow-up | Better standardized language created and implemented in discharge summaries | 1 |
| | | Experience with patients having better pain and function outcomes with less opioid medications, as compared with more opioids | 1 |
| | | Role of primary care in postdischarge pain management and misuse risk reduction | 3 |
| Influence of the multifactorial nature of trauma on pain management | Current practices | Clinician's concerns with opioid prescribing and management have been highlighted in past several years | 4 |
| | | Trauma victims are at acute risk of substance misuse and mental health symptoms | 1 |
| | Federal guidance initiatives | Insufficient guidelines for opioid prescribing in trauma | 4 |
| | | No official guidance for use of national databases (eg, PDMP) or screening tools to inform opioid prescribing | 1 |
| | Need for trauma-specific guidance | Complexities of polytrauma and chronic pain when prescribing to trauma and acute care patients | 3 |
| | | No trauma-specific screenings for opioid misuse currently exist to assist with pain management | 4 |
| | | Need for an individualized approach for discharge opioid prescribing | 3 |



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**Table 3** Experiences with opioid prescribing guidelines in trauma and acute care

| Theme | Subtheme | Illustrative participant quote(s) | | |
|---|---|---|---|---|
| Acute treatment strategies | Current practices | 'There's like an opioid crisis task force, but none of it is specifically directed towards trauma. It's just as a system as a whole.' (North) | 'Because it went from … 'pain … is what [patients] say it is' and 'whatever [patients] say' … completely to 'wait a minute,' maybe we need a little bit more objective information. It can't purely be subjective.' (South) | 'We look at histories and if they come in with a blood alcohol level on admission, they're higher risk [for opioid misuse] in my mind, yeah. We do their AUDIT-C score and I think that helps you, not just with alcohol but with any substance use.' (South) |
| | Current federal guidelines | 'There are guidelines out there at the national level and there are some best practice statements, but there are lots of logistic and operational barriers to implementing them.' (East) | | |
| | Clinical judgment | 'There are even studies that have come out that say that the best predictor of how much someone needs is what they've used in the 24 hours prior to discharge. So I use that as a guide, too, to help [determine discharge prescriptions].' (South) | 'Well outside of [this study], there's nothing that we are doing to screen [for opioid misuse] really, and it ends up being, quite honestly, personal prejudices … that are based on past history of or past experiences … and, quite honestly, we go on gut feeling, which is kind of the whole purpose of [the study team] developing the screening tool in the first place.' (West) | |
| | Discharge prescribing considerations | 'We're kind of on our own. When you discharge somebody, you figure out what you think they need and you do it by yourself [without other guidelines or resources].' (South) | 'So, when you're discharging someone, you're discharging them with treatment for acute pain, but none of the traumatic injuries can be called chronic pain until it truly becomes chronic. So, we only prescribe enough pain medication to get through the acute phase.' (South) | |
| Patient interactions surrounding pain management | Patient education and counseling | 'If we have a validated tool that was effective in identifying at-risk patients, certainly there'd be value in using that screen universally. … And if I knew who the at-risk populations were, then [prescribers] would be able to target more education and proactive interventions during hospitalization and at discharge in terms of counseling.' (East) | 'Quite early on, I figured out that if I kept them on … what they used as an inpatient and then [set] up the expectation that, '… you will have pain. I can't take away all of that. … Your pain is controlled based on these criteria. … We're not changing anything when you leave the door and … when you come back for your clinic appointment … we're going to talk about [the opioid prescription.] In the meantime, if there's anything different, then, you know, talk to us.' But I've found that setting up that expectation has really gone a long way.' (West) | |
| | Staff member roles | 'From a pharmacist's perspective, I agree with [provider]. We don't really get to know these patients nearly as well as the providers do, so we don't usually have a good understanding of what their social variables are, and what sort of environment they're going back to after discharge. And we have zero contact with them after discharge; there's no mechanism whatsoever for us to follow-up with them longitudinally. … So it's always a little disconcerting to prescribe anything and not have a mechanism of follow-up or even have a mechanism to get feedback that what we're doing is right.' (East) | | |
| | Postdischarge follow-up | 'And I think a lot of times what happens is our patients tend to follow-up with their primary care physicians for a lot of their pain control. So, I feel like we don't get those calls on the trauma service that often – to give them refills to their prescriptions.' (North) | | |
| Influence of the multifactorial nature of trauma on pain management | Current practices | '…and so again, for length of the prescription, you know after a period of time, is it a matter that people use them because, you know, they're in physical pain? Is it psychological pain? And so… for the trauma population… there truly is that behavioral health, mental health piece to be addressed as the person recovers.' (North) | | |
| | Federal guidance initiatives | 'I'm actually a part of research for general surgery, as well, for opioid use and prescription guidelines. And there has been a lot of my research done in terms of general surgery cases, like with appendectomies, gall bladder, and bread and butter stuff. And, traumas, since it's such a multifactorial… um, it's kind of hard to assess what the right amount [of opioids to prescribe] might be. … And there isn't a lot of research done out there, regardless, to kind of be, like, 'this is what you need,' 'this is the kind of trauma you've had,' etc.' (North) | | |
| | Need for trauma-specific guidance | 'There has been a lot of research done in terms of general surgery cases, like with appendectomies, gall bladder, and bread and butter stuff. And trauma, since it's such a multifactorial [practice], um, it's kind of hard to assess what the right amount might be … and there isn't a lot of research done out there, regardless, to kind of be like, this is what [prescription] you need, this is the kind of trauma you've had, etc.' (North) | 'I don't think it's a, like, one-size-fits-all type of thing for every trauma patient.' (North | 'I think, in general, our trauma patients fall out of the purview of any particular guidance or policy … within the hospital other than … the daily morphine equivalent that is enforced by insurance and pharmacy.' (West) |



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and/or tracking prescription volumes at an institution level could help inform the importance of appropriate prescribing patterns (n=2).

### Patient interactions surrounding pain management

Complexities surrounding opioid prescribing in trauma are reportedly accompanied by many challenging aspects of patient care as well, including proper patient education and counseling (n=4) and the patient's perceptions of postdischarge follow-up (eg, pain expectations, care follow-up; n=3). Sites indicated that transparent communication between providers and patients assists in counseling patients around expected pain and the potential risk of misuse (n=4).

Each site reportedly takes an interdisciplinary approach when treating traumatic injury patients, in which non-prescribing staff members (eg, social workers, pharmacists) may also inform discharge prescribing and patient education. Similarly, two of the four sites noted that education materials, such as paper handouts, brochures, and flyers targeting proper opioid use and medication management, were helpful tools to facilitate communication with patients.

> I've also made it part of my practice, I want to say within the last few months, as far as talking to [patients] about how to appropriately discard unused medications and give them available resources for that, so that it doesn't end up back in our community or in the hands of someone who it is not prescribed for. (West)

Furthermore, one site expressed a need to create and/or improve standardized language used for opioid prescription counseling in discharge summaries to improve patient education. Notably, this site reported that patients often did not read discharge summaries, and that improving or consolidating language may improve provider-administered education and minimize the burden for patients to review the materials. This importance of provider–patient communication reportedly extends to converting care from trauma providers to primary care providers, as transitioning patients from inpatient services to long-term outpatient management may coincide with barriers to effective and accurate care communication. Trauma providers reportedly anticipate that there is potential for primary care providers to be involved in discharge planning and long-term care of these patients (n=3), thereby improving transition of care and patient outcomes.

### Influence of the multifactorial nature of trauma on pain management

A common theme among provider recommendations for approaching opioid prescribing in the trauma and acute care setting is the need for trauma-specific initiatives (n=4). The multifactorial nature of traumatic injuries (eg, acute and chronic pain, polytrauma, psychosomatic factors) reportedly adds layers of complexity to the already multifaceted patient care planning (n=3). Providers at all four study sites have noted that there remains minimal evidence or guidance for supporting trauma and acute care patients. Outside of general guidance surrounding PDMP use for monitoring current narcotic use and prescription history, participating sites (n=1) were reportedly unaware of any official guidance for incorporating national databases or screening tools into care plans for traumatic injury victims.

Additionally, trauma and acute care patients are at an acute risk for substance misuse and mental health symptoms related to their injuries and hospitalization.[21] Thus, these characteristics and risk factors should be considered when prescribing opioids and creating care plans. With these factors in mind, increased federal guidance for opioid prescribing in the setting of trauma and acute care would benefit from individualized approaches to patient care to account for the many complexities (eg, multifactorial nature of care, polytrauma injuries) of this patient population.

#### Screening tools for pain and relevant factors

> I mean, if we [had] a validated tool that was effective in identifying at-risk patients [for opioid misuse], certainly there'd be value in using that screen universally. (East)

Each site noted that implementing an opioid misuse screening tool in the setting of trauma would help facilitate communication between clinicians and patients. While not validated in this setting, sites (n=3) explicitly stated that mental health and substance use diagnoses or symptoms are also relevant to trauma patients. Hence, all four sites indicated using brief screeners for relevant psychological and substance sequelae (eg, depression/anxiety, post-traumatic stress disorder (PTSD), and alcohol screens) to extrapolate potential risk factors for opioid misuse. The use of these screening tools reportedly helps clinicians create individualized care plans for patients and prescribe medications based on the risk stratification estimated by clinician judgment (n=3). Notably, there may be potential iatrogenic harms in extrapolating the results from measures beyond their validated purpose to approximate risk for opioid misuse, further highlighting the need for guidelines and validated screening measures in this population.

#### Non-opioid pain management

All four sites indicated offering psychological services for patients scoring within high-risk ranges at admission screening tools for mental health and/or substance use provided by psychologists (n=2), social workers (n=1), or unspecified (n=1). Clinicians also noted that behavioral health consultations may particularly be beneficial in the setting of patients who are high risk for opioid misuse (n=1). Furthermore, three sites also mentioned use of considering non-narcotic medication modalities in patient care plans. Clinicians also think that there is increased emphasis on better pain management with non-opioid medications, with two sites mentioning an increase in multimodal approaches in trauma as compared with other populations.

## DISCUSSION

A qualitative analysis of interviews was conducted with focus groups at four hospitals across the state of Wisconsin to determine the translation of opioid prescribing guidelines into clinical practice. Three major themes emerged from this analysis, including current acute treatment strategies during hospitalization, the importance of patient–provider communication surrounding pain management, and the often overlooked importance of the multifactorial nature of trauma when determining best practices for opioid prescribing.

### A call to action

Together, the data serve as a call to action to establish clear guidelines surrounding opioid prescribing in the setting of trauma and acute care. Across all four sites, providers expressed concern that, while contemporaneous opioid prescribing guidelines were helpful for informing overall pain management practices, these guidelines fall short in the setting of traumatic injury. Specifically, the focus on the treatment of acute pain (duration of <1 month) during hospitalization fails to account for the chronic nature of many traumatic injuries, as well as the frequent co-occurrence of



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mental health and substance use sequelae or precursors to traumatic injury.[9] In recent years, research has begun highlighting the unique challenges to opioid prescribing in trauma.[1 8 13] Yet, little work has been done to identify how these research findings can be translated into clinical practice to ensure patients are satisfied with their pain management while also mitigating risk for opioid misuse.

## Current practices

Current strategies to account for this gap in research and guidelines were identified. Predominantly, providers indicated that discussing expectations with patients regarding the pain they would experience, the relief they can anticipate from treatment, and anticipated discharge prescription quantities is an excellent strategy to facilitate transparency between patients and providers, as well as enhance patient satisfaction with pain management. In an effort to address the complex multifactorial presentations in traumatic injury, all four sites included screening tools to detect mental health and/or substance use concerns, with interventions reported at most sites to respond to individuals identified as high risk for these co-occurring conditions. However, none of the sites employed any combined screening-intervention approach to specifically assess risk for opioid misuse. Reliance on currently unvalidated screening methods for opioid misuse poses a risk for effective pain management and may lead to iatrogenic harm for traumatic injury patients. Thus, there is an imperative need to establish evidence-based guidelines for robustly screening and mitigating risk for opioid misuse in the setting of traumatic injury.

## Updated opioid prescribing guidelines

Since this study was completed, new opioid prescribing guidelines have emerged, which have begun to address the need for unique guidelines in the setting of traumatic injury, including the potential need for longer duration opioid therapy for individuals for whom prolonged severe pain is anticipated.[9] For these individuals, the updated guidelines have addressed the extension of opioid prescriptions, including a suggested protocol for evaluation of the transition from acute (duration of <1 month) to chronic pain (duration of >3 months) after traumatic injury.[9] Moreover, these new guidelines underscore the importance of evaluating mental health and substance use conditions that may increase likelihood of opioid misuse, as well as provision of alternative treatments focused on these conditions rather than focusing treatment solely on patient-reported pain. However, these guidelines fail to provide any clear path to evaluating nor intervening for these potential risk factors of opioid misuse.

Results of the present study are in line with the recommendations proposed in the 2022 guidelines, such as the need for consideration of confounding mental health symptoms in opioid prescribing and the multifactorial decision-making process of prolonged opioid prescribing. Study findings suggest that trauma and acute care providers may benefit from using the current guidelines as a foundation on which to build inpatient and discharge prescribing plans from. Implementing these guidelines for defining acute versus chronic pain, the ancillary use of non-opioid pain treatments, and assessing risk for opioid harms and misuse may prove beneficial in the setting of trauma, as supported by the presented findings.[9]

Findings from the present study suggest that these new guidelines are a starting point for improving patient care and pain management in the setting of traumatic injury. Moreover, data suggesting providers prescribe based on 'gut feeling' echo concerns of provider biases when prescribing opioids.[22 23] However, at the time of writing this article, the authors are unaware of any validated and implemented methods for screening for risk of opioid misuse in the setting of traumatic injury; the lack of evidence-based methods for detecting opioid misuse risk poses a serious threat to effective pain management and perpetuates the risk for discriminatory prescribing practices. Moreover, while current guidelines address the benefits of monitoring for signs and symptoms of opioid misuse, as well as the treatment needs for opioid use disorder, they fail to offer guidance for proactively intervening to prevent opioid misuse. In the present qualitative analysis, all four sites indicated that an evidence-based method of screening and intervening for opioid misuse risk would be a welcomed addition to ensuring patient safety and well-being both during hospitalization and, especially, after discharge.

## Implications for clinical practice

Study findings suggest that clinicians may benefit from increased guidance to setting patient expectations, incorporating non-opioid pain management techniques, and potentially screening for co-occurring substance use disorders (SUD) and other mental health factors that may increase risk for misuse. Similarly, clarifications around tapering plans for opioid prescriptions would provide expectations around the long-term utilization of opioids for acute pain. Importantly, available data are still too limited to draw robust conclusions regarding the risk factors for opioid misuse after traumatic injury; therefore, clinicians are instructed to exercise caution when interpreting findings around substance use or psychological history to determine risk for misuse. Pain is a frequent motivation for opioid misuse, and clinicians should ensure that any efforts to mitigate risk for misuse do not lead to suboptimal pain management and subsequent opioid misuse.[24]

## Recommendations for future research

Present research demonstrates an immediate need for intensive remodeling of opioid prescribing guidelines for patients with traumatic injury. Participating trauma centers repeatedly emphasized that traumatic injury is a multifactorial problem that requires solutions beyond the scope of generalized pain management approaches. Thus, future research should build on previous work to identify unique contributors and risk factors for pain severity and opioid misuse after traumatic injury, as well as develop treatment approaches to effectively intervene for this population. Moreover, traumatic injuries may instantiate a seminal event for opioid misuse, with elevated risk factors for psychosocial distress, insufficient pain management, and emergent opioid misuse that surpass other populations.[1] Therefore, individuals suffering traumatic injury may particularly benefit from an adaptive treatment approach that aims to enhance psychosocial outcomes while mitigating risk for opioid misuse.

The multifactorial nature of traumatic injuries also warrants further exploration through a diversity and equity lens. As research continues to develop in this field and validated measures are created, researchers should contextualize these within specific populations, such as with racial, ethnic, and linguistic minorities, and consider issues of accessibility and acceptability for screening and treatment across populations suffering from traumatic injury. To that end, future clinical trials should incorporate stakeholder advisory panels, such as those included in this analysis, to evaluate the validity and accessibility of screeners and interventions across all demographics.



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## Limitations

This analysis had several limitations. First, each focus group comprised a rather small sample size of four to seven focus group members, thereby limiting the quantity and diversity of feedback provided. Additionally, all four study sites were located in Wisconsin, which may result in provider opinions and practices that are not representative of other regions. The present project provides preliminary qualitative evidence of a gap in research literature and clinical guidelines; given the early stages of this research, the questions included in the present study focused on issues regarding distinctions between traumatic injury and other populations receiving opioids. Issues of race and ethnicity were not considered when selecting questions, which may have impacted responses from patients. Additionally, while risk for sample selection bias was mitigated by asking hospital staff to assemble the change teams, this approach could speculatively have led to selection bias on the part of hospital staff members. Future research should build on these preliminary findings by investigating the unique risk factors for opioid misuse, as well as discriminatory opioid prescription practices, across clinical patient demographics.

Another source of limitations was the COVID-19 precautions implemented toward the end of data collection, resulting in an expedited focus group for one of the study sites (ie, 1 month prematurely). One study site also cited the pandemic as reason for halting the implementation of CDC discharge opioid prescribing educational materials as they were deemed not medically necessary for patient care. This analysis focuses specifically on opioid prescribing guidelines in the setting of trauma and acute care, limiting the generalizability of results to other patient populations.

## CONCLUSION

Overall, findings underscored the marginal benefit from existing federal guidelines when prescribing opioids in the setting of traumatic injury. Across all four study sites, clinicians agreed that current opioid prescribing guidelines are insufficient and that new guidance specific to the setting of traumatic injury is necessary to improve treatment outcomes and mitigate risk for opioid misuse. Participants identified several procedures through which they sought to improve current practice, including additional screening for PTSD and/or SUD, non-opioid pain management strategies, and setting patient expectations regarding pain management. Inconsistent, ineffective, and potentially discriminatory opioid prescription practices will persist until clear and effective guidelines are established and disseminated across clinical sites.

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