

Primary Care Clinician Perspectives on Older Adult Chronic Pain Management and Clinical Decision Support

Isra Hasnain, Erin M. Staab, Ainur Kagarmanova, Marissa Mackiewicz, Mim Ari, Katherine Thompson, Danielle Lazar, Anne Zhao, Glyn Elwyn, Christopher A. Harle, Valerie G. Press, Neda Laiteerapong

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Primary Care Clinician Perspectives on Older Adult Chronic Pain Management and Clinical Decision Support

Isra Hasnain¹ MD; Erin M. Staab² MPH; Ainur Kagarmanova² MS, MA; Marissa Mackiewicz³ PhD; Mim Ari² MD; Katherine Thompson⁴ MD; Danielle Lazar⁵ DrPH; Anne Zhao⁵ MPH; Glyn Elwyn⁶ PhD; Christopher A. Harle⁷ PhD; Valerie G. Press² MD, MPH; Neda Laiteerapong^{2,8} MD, MS

¹Pritzker School of Medicine Biological Sciences Division University of Chicago Chicago US

²Section of General Internal Medicine Biological Sciences Division, Department of Medicine University of Chicago Chicago US

³Section of Hospital Medicine Biological Sciences Division, Department of Medicine University of Chicago Chicago US

⁴Section of Geriatrics and Palliative Medicine Biological Sciences Division, Department of Medicine University of Chicago Chicago US

⁵ Access Community Health Network Chicago US

⁶ The Dartmouth Institute for Health Policy and Clinical Practice Dartmouth College Lebanon US

⁷Department of Health Policy and Management Richard M. Fairbanks School of Public Health Indiana University Indianapolis US

⁸Department of Psychiatry and Behavioral Neuroscience Biological Sciences Division University of Chicago Chicago US

Corresponding Author:

Ainur Kagarmanova MS, MA
Section of General Internal Medicine
Biological Sciences Division, Department of Medicine
University of Chicago
5841 S Maryland Ave
Chicago
US

Abstract

Background: Chronic pain management in older adults can be challenging for primary care clinicians because of comorbidities, side effects, and complicated guideline recommendations. Clinical decision support systems (CDSS) can enhance guideline adherence in chronic pain management by collecting and organizing patient information and aiding clinician decision-making. This study examined clinicians' views on challenges in managing chronic pain and their opinions on a CDSS that gathered patient preferences and provided clinicians with decision support for chronic pain management.

Objective: The objective of this study was to explore primary care clinicians' perspectives on the challenges of managing chronic pain in older adults and evaluate their opinions on a clinical decision support system (CDSS) designed to gather patient preferences and facilitate guideline-based, multimodal pain management.

Methods: We conducted semi-structured interviews with 18 clinicians from two University of Chicago Medicine primary care clinics piloting the CDSS. The interview guide was informed by the Consolidated Framework for Implementation Research.

Results: Participants included 89% physicians and 11% advanced practice nurses. Participants stressed the importance of a comprehensive, patient-centered approach to chronic pain management and favored multimodal and non-pharmacological treatments. Challenges included complex medical histories, competing priorities, insurance limitations, and opioid misuse concerns. Clinicians found the CDSS beneficial for promoting multimodal care discussions and enhancing visit efficiency. However, there were concerns regarding its complexity, workflow compatibility, and older patients' technology navigation difficulties. While tools, such as the pre-visit questionnaire and conversation tool, were valued, clinicians emphasized the need for adaptability and streamlined usability.

Conclusions: The primary care clinicians in this study were aligned with clinical practice guidelines to provide patient-centered pain management using multimodal treatments. However, they had several concerns regarding how complex chronic pain management can be for older adult patients. They expressed interest in using the CDSS but were concerned about its complexity. I-COPE offers a promising approach to support guideline-based chronic pain and opioid management in primary care. By addressing usability and workflow compatibility, CDSS tools like I-COPE can better equip clinicians to provide comprehensive, patient-centered care, ultimately enhancing treatment outcomes for older adults with chronic pain.

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Original Manuscript

Full Title: Primary Care Clinician Perspectives on Older Adult Chronic Pain Management and Clinical Decision Support

Short Running Title: Clinician Views on Chronic Pain Management and CDSS

Authors: Isra Hasnain, MD¹; Erin M. Staab, MPH²; Ainur Kagarmanova, MS, MA²; Marissa Mackiewicz³; Mim Ari, MD²; Katherine Thompson, MD⁴; Danielle Lazar, DrPH⁵; Anne Zhao, MPH⁵; Glyn Elwyn, PhD⁶; Christopher A. Harle, PhD⁷; Valerie G. Press, MD, MPH²; Neda Laiteerapong, MD, MS^{2,8}

¹ Pritzker School of Medicine, Biological Sciences Division, University of Chicago, Chicago, IL

² Section of General Internal Medicine, Department of Medicine, Biological Sciences Division, University of Chicago, Chicago, IL

³ Section of Hospital Medicine, Department of Medicine, Biological Sciences Division, University of Chicago, Chicago, IL

⁴ Section of Geriatrics and Palliative Medicine, Department of Medicine, Biological Sciences Division, University of Chicago, Chicago, IL

⁵ Access Community Health Network, Chicago, IL

⁶ The Dartmouth Institute for Health Policy and Clinical Practice, Dartmouth College, Lebanon, NH

⁷ Department of Health Policy and Management, Richard M. Fairbanks School of Public Health, Indiana University, Indianapolis, IN

⁸ Department of Psychiatry and Behavioral Neuroscience, Biological Sciences Division, University of Chicago, Chicago, IL

Corresponding Author: Neda Laiteerapong, MD, MS – 5841 S Maryland Avenue, MC 2007B, Chicago, IL 60637, nlaiteer@bsd.uchicago.edu, @nedalai

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Discussion: The primary care clinicians in this study were aligned with clinical practice guidelines to provide patient-centered pain management using multimodal treatments. However, they had several concerns regarding how complex chronic pain management can be for older adult patients. They expressed interest in using the CDSS but were concerned about its complexity.

Conclusions: I-COPE offers a promising approach to support guideline-based chronic pain and opioid management in primary care. By addressing usability and workflow compatibility, CDSS

tools like I-COPE can better equip clinicians to provide comprehensive, patient-centered care, ultimately enhancing treatment outcomes for older adults with chronic pain.

Key Words: chronic pain, older adults, opioid use, primary care, clinical decision support



INTRODUCTION

Clinical guidelines by organizations such as the American Geriatrics Society (AGS) and Centers for Disease Control and Prevention (CDC) offer guidance on how to manage chronic pain, opioid use, and opioid use disorder (OUD) in older adults.^{1,2} These guidelines stress the importance of understanding each patient's medical history, past treatments, social situation, and ability to access treatments, as well as using multimodal interventions to manage pain. However, integrating these clinical factors and treatment options in decision-making can be challenging in clinical practice.

Previous work has focused on barriers to chronic pain and opioid management in older adults, including limited clinician time and resources.^{3,4} One potential solution to addressing the complexity of chronic pain management in older adults is the use of clinical decision support systems. Clinical decision support systems may increase clinician adherence to guidelines by collecting and organizing patient data and presenting conversation aids when necessary. Although clinical decision support systems have been proven effective in various clinical settings, some clinicians have been hesitant to use them due to their complexity.^{5,6} If designed well, clinical decision support systems could help address clinician-identified barriers such as lack of access to resources⁷ and medical complexity of chronic pain in older adults.⁸ Primary care clinicians' (PCCs) perspectives on the use of clinical decision support systems in chronic pain and opioid use management remain understudied, especially for older adults and when assessing patient health outcomes.⁹⁻¹³

I-COPE (Improving Chicago Older Adult Opioid and Pain Management through Patient-centered Clinical Decision Support and Project ECHO®) was designed for older adult patients (≥65 years) with chronic pain diagnoses, chronic opioid use, or opioid use disorder. I-COPE includes a pre-visit patient questionnaire that PCCs can review to enable shared decision making, alongside clinical decision support, to create a comprehensive pain, opioid, and OUD management plan. I-COPE was developed with experts in geriatrics, palliative medicine, primary care, clinical informatics, shared decision-making, medical education, addiction medicine, behavioral medicine,

implementation science, and clinical research. I-COPE was piloted at 2 clinic sites in June 2021 and later implemented at 35 clinics/health centers across metropolitan Chicago. This study focused on primary care clinicians' views on the current state of chronic pain management in older adults and their opinions on the I-COPE clinical decision support system to improve chronic pain, opioid use, and OUD management in this population.

METHODS

I-COPE Intervention Development

We conducted qualitative semi-structured interviews with primary care clinicians at two University of Chicago Medicine (UCM) clinics piloting I-COPE, one internal medicine and one geriatrics, starting in June 2021. I-COPE is an EHR-based toolkit designed in Epic to support the management of chronic pain, opioid use, and OUD management in older adults in primary care settings. Details about the intervention and trial design have been previously published.¹⁴ In brief, the I-COPE intervention included four main components (Appendices A-D): 1) a pre-visit questionnaire for patients 65 years or older with a history of chronic pain diagnoses, high pain scores during their most recent clinic visit, recent opioid medications, or OUD; 2) an EHR-embedded order set (SmartSet) that included patient education materials, pre-filled medications, recommended referrals, and community resource lists; 3) a shared decision-making conversation tool for pain management treatment options; and 4) tailored patient education tools. The questionnaire includes validated screeners about current levels of pain (Pain, Enjoyment of Life, General Activity (PEG) scale), depression (PHQ-2), and drug use (single-question drug use screener).¹⁵⁻¹⁷ The I-COPE questionnaire also asks patients to identify functional goals that might be achieved through better pain management and treatment preferences ranging from self-management to surgical intervention.

Interview Guide Development

The interview guide (Appendix E) was developed with experts in internal medicine, geriatrics, and qualitative research. The qualitative interviews had two primary aims. The first aim

was to assess clinicians' beliefs and perspectives on the management of chronic pain, opioid use, and OUD in older adults. We asked about clinicians' current practices, including how they assess pain and OUD, discuss treatment goals, decide on a chronic pain treatment plan, prescribe opioid medications, and provide patient education on chronic pain. We also queried clinicians about challenges and barriers to older adult chronic pain management. The second aim was to gauge clinicians' perspectives on I-COPE. Participants were shown screenshots of the I-COPE questionnaire, I-COPE SmartSet, conversation tool, and a sample of patient education materials developed for I-COPE. They were asked about the anticipated benefits and challenges of using these tools. Clinicians were also asked to reflect on the I-COPE intervention and offer their impressions on how it would fit within their clinical practice. Questions about the I-COPE tools were developed using the intervention and individual characteristics domains of the Consolidated Framework for Implementation Research (CFIR).¹⁸

Conducting Interviews

Interviews were conducted by a trained medical student (IH) with attending physicians and advanced practice nurses (APNs) in July 2021 shortly after the I-COPE pilot implementation started. Primary care clinicians were recruited via email to participate in 45-minute, one-on-one, semi-structured interviews. All interviews were conducted over Zoom videoconferencing, audio-recorded with verbal consent from each participant, and transcribed for analysis. Recruitment continued until theme saturation was reached. IH, AK, ES, and NL determined saturation based on no further accumulation of novel information within any domain for three consecutive interviews. Each transcript was coded independently by at least two researchers using a template approach.¹⁹ Differences were resolved, and themes were developed through discussion. This study was reviewed and approved by the University of Chicago Biological Sciences Division Institutional Review Board (IRB20-1580).

RESULTS

Interviews were conducted with 18 clinicians from the internal medicine practice and one clinician from the geriatric practice. Most interviewees were physicians (89%, n=16); the remainder (11%, n=2) were APNs (**Table 1**). About three-quarters self-identified as White (72%, n=13), with the remaining participants identifying as Asian (17%, n=3), African American (6%, n=1), and multiracial (6%, n=1). Twelve clinicians self-identified as female (67%) and six as male (33%). Half of clinicians had practiced for 10 years or fewer (50%, n=9).

Table 1. Participant characteristics

Sex	
Male	6 (33%)
Female	12 (67%)
Race	
White	13 (72%)
Asian	3 (17%)
African American	1 (6%)
Multiracial	1 (6%)
Years in practice	
0-9	8 (44%)
10-19	4 (22%)
20-29	3 (17%)
30+	3 (17%)
Clinician Type	
Advanced Practice Nurse	2 (11%)
Primary Care Physician	16 (89%)

Major themes are described below in the following sections: current practices for chronic pain management in older adults, current barriers to chronic pain management in older adults, and anticipated effects of the I-COPE intervention.

Current practices for chronic pain management in older adults.

Participants emphasized a comprehensive approach to chronic pain management, favoring multimodal and non-pharmacological treatments while considering patient-specific factors, but faced challenges with current pain assessment tools and a lack of standardized patient education (**Table 2**).

Table 2. Current Practices for Chronic Pain Management in Older Adults

Theme	Quotes
Chronic pain management is within the scope of primary	“[Pain specialists] tend to offer [patients] a couple of procedures, but no like ongoing counseling and support. So,

care	it falls to the primary care doctor to try to do the best they can, to pull together resources and improve their own knowledge and skills, to take care of their patients with chronic pain,” Participant 3
Prioritizing multimodal and non-pharmacological treatment	“Maximizing non-pharmacologic approaches both first and, if pain is moderate or severe, thinking about it as a component in addition to pharmacologic therapies,” Participant 9 “The opioids I use are really a last step. I think obviously they're good pain medications, but I think you have to target them in the right patients,” Participant 9
Older adult-specific considerations when prescribing medications	“If it's something that's limited to a joint or two, I try topical agents to the extent that I can because I'm not only thinking about helping them to mitigate their pain, but also some of the unintended consequences of using something like a non-steroidal,” Participant 11 “If they're really requiring opioids and they happen to live alone and they're at risk for a fall, are there different ways that we can manage pain or perhaps manage some things at night versus during the day,” Participant 11
Inadequacy of numerical pain scale for pain assessment	“If it's just a one question self-report, there's a lot of subjectivity in it and it's harder to get an accurate sense of the person's pain... what does a five even mean,” Participant 2 “I find the most important question when talking to people about chronic pain is a functional evaluation,” Participant 1
Non-standard approach to patient education	“I've got a great app that I use that gives good information on medication interactions and what available evidence is out there because it's not stuff I would necessarily read,” Participant 9

Chronic pain management is within the scope of primary care. Clinicians described chronic pain management as an appropriate and critical issue for primary care because of their longitudinal relationship with patients, highlighting that “the continuity that we have with patients and being able to see the big picture is really helpful” (Participant 1). Some clinicians indicated that “it falls to the primary care doctor to try to do the best they can, to pull together resources and improve their own knowledge and skills, to take care of their patients with chronic pain” (Participant 3).

Prioritizing multimodal and non-pharmacological treatment. In line with clinical guidelines, clinicians prioritized multimodal strategies and “maximizing non-pharmacologic approaches”

(Participant 9). Clinicians said they often referred patients to physical therapy, which they saw as a valuable component of multimodal treatment. In general, clinicians said that they rarely initiated opioids, but instead mostly continued opioid medications prescribed by a prior clinician and used opioids as a “last step” after failure of several non-opioid options (Participant 9).

Older adult-specific considerations when prescribing medications. When selecting medications, clinicians consider a wide range of factors for older adults. For example, topical analgesics were often reported as the first-line therapy because of their relative safety, especially for patients with comorbidities to avoid “some of the unintended consequences of using something like a non-steroidal [anti-inflammatory drug]” (Participant 11). Clinicians also considered the risk of adverse effects and patient circumstances; one clinician reported using different approaches to “manage some things at night versus during the day” depending on whether the patient lives alone or is at risk for falls (Participant 11).

Inadequacy of numerical pain scale for pain assessment. Some participants were dissatisfied with using a numeric pain scale (e.g., 0 to 10 visual analog scale) because of its oversimplification and did not find it clinically useful due to “a lot of subjectivity” (Participant 2). Participants expressed a desire for a more nuanced pain assessment to better understand the impact of chronic pain on patient’s lives and conduct “a functional evaluation” (Participant 1).

Non-standard approach to patient education. Several clinicians desired more readily accessible educational materials, especially for patients with lower health literacy. They reported needing a standardized approach to educate patients about pain management. Some provided verbal education; a few drew visuals to explain concepts or provided patient education via handouts or electronically. Some clinicians were concerned that if they did offer education, patients would not remember what was discussed or review the materials they shared.

Barriers to chronic pain management in older adults.

Participants described several challenges to managing chronic pain in older adults, including

medical complexity and competing priorities, insurance restrictions, and concerns about opioid misuse (**Table 3**).

Table 3. Current Barriers to Chronic Pain Management in Older Adults

Theme	Quotes
Medical complexity and competing priorities	“People are not coming in for their pain only, they're coming in with...ten other medical problems. So that's the challenge, what's the priority?” Participant 10 “It's a little easier in a younger, healthier person, who doesn't have like kidney disease, or ulcers, or is confused by multiple meds... It's like the multi-morbid, complex patient that kind of gets overwhelming,” Participant 3 “We just don't have that capability sometimes of having multiple visits with our patients given my patient volume load,” Participant 17 “There are a lot of folks with chronic pain, where they're far more worried about their shortness of breath. Or, you know, quitting smoking or why is the hemoglobin falling? Again, what you're hearing is competing demands on bandwidth for both the patient and the provider,” Participant 12
Restrictive insurance coverage	“I'd love to maximize things like topical diclofenac or topical lidocaine...with patients that have Medicare, there's often difficulty in getting coverage for those medications” Participant 9 “We can offer these things, but they need to be reimbursed. And for a lot of our patients, it's just not practical that they will be able to do these things out-of-pocket. It's just not in their budget to pay for their own acupuncture” Participant 1 “It's hard because I feel like chronic pain at every visit is like the same thing. Like I don't have a lot more to offer, you know, if they tried physical therapy, they tried injections... I'm a little limited in my options of what to do for them,” Participant 17 “A lot of the over-the-counter pain medications, our patients can't afford, and insurance won't pay for. The insurance company will pay to give them [acetaminophen/hydrocodone], but they won't pay for you to give them lidocaine patches,” Participant 1
Concerns about opioid misuse	“I do feel mean, by not increasing their opioids. You're always like, ‘Am I being an uncaring physician? Or am I being a good, responsible steward of opioids?’” Participant 3

	“I think everybody that practices outpatient medicine or inpatient medicine has experiences where you have patients that are struggling with OUD or some other overlay, which complicates chronic pain management,” Participant 5 “You want to give people the benefit of the doubt, but at the same time we know that diversion is happening... at what point does a suspicion actually feel warranted as opposed to questioning myself, ‘Am I discriminating against this patient? Am I being biased?’” Participant 15 “Access to behavioral medicine and substance [use] counseling is very limited. So, if you think someone is overusing, or misusing their opioids, there's not a lot of options,” Participant 3
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Medical complexity and competing priorities. Clinicians commented on having limited options due to comorbidities and potential side effects of Beer’s criteria medications, including non-steroidal anti-inflammatory drugs, and opioids; one clinician shared that “[caring for] multi-morbid, complex patient[s] kind of gets overwhelming” (Participant 3). Clinicians mentioned having insufficient time during visits to address all of patients’ health concerns and how more frequent visits were not always feasible due to “patient volume” (Participant 17). Thus, managing chronic pain amidst other medical concerns and priorities was a challenge due to “competing demands on bandwidth for both the patient and the provider” (Participant 12).

Restrictive insurance coverage. Some clinicians could not prescribe their desired treatment plan due to insurance restrictions, especially for topical analgesics that “patients can't afford” (Participant 1). Access to over-the-counter medications and other options, such as acupuncture, were limited since “it's just not practical that patients will be able to do these things out-of-pocket” (Participant 1).

Concerns about opioid misuse. Participants shared that opioid misuse and OUD “complicate chronic pain management” (Participant 5). Some clinicians were concerned about prescribing opioids amidst the opioid epidemic while also wanting to give their patients “the benefit of the doubt” (Participant 15). Furthermore, clinicians stated that “access to behavioral medicine and substance

[use] counseling is very limited” for patients with OUD (Participant 3).

Anticipated effects of I-COPE

Overall intervention. Participants shared that I-COPE tools could “increase the likelihood” of talking about multimodal care (Participant 9) by prompting both clinicians and patients to consider a diverse range of treatment options, fostering a more comprehensive and nuanced approach to pain management. They also thought that the I-COPE tools could “improve efficiency” (Participant 2) of clinic visits by identifying pain-related issues ahead of time and allowing for more focused discussions. Participants said that a standardized approach could “help a lot of people feel more comfortable about managing chronic pain” (Participant 1) and that improved access to tools and resources in the EHR could increase clinicians’ self-efficacy. Clinicians also hoped that being able to show patients that “this is the clinic’s policy, and this is how everybody does it here” (Participant 2) would foster trust by reducing perceived subjectivity and discrimination and promoting a collaborative, non-adversarial approach focused on improving the patient's quality of life.

Participants were worried about the intervention's complexity and the potential “lack of completeness” as some clinicians might only use “bits and pieces” as opposed to the whole intervention (Participant 3). Another concern was raised about the compatibility of I-COPE with existing workflows where multiple health concerns are addressed during one visit, highlighting that the I-COPE intervention seems to be built for “a world where the pain diagnosis is the focus of the visit, and often it is not” (Participant 12).

Patient pre-visit questionnaire. Clinicians appreciated that systematic implementation of this questionnaire would help elicit patient functional goals and preferences and give patients an opportunity to “to talk about pain more than we give them time to talk about it” and “get it down on paper” (Participant 4).

Patient discomfort with technology, particularly among older patients who may “not even know how to use their patient portal” (Participant 13), was a concern, prompting clinicians to

anticipate a preference for traditional paper-based methods. At the same time, clinicians worried about the additional workload for medical assistants if the questionnaire was administered in the clinic and whether the questionnaire could be reliably completed before patient encounters.

Conversation tool. Participants described the conversation tool, the one-page document that lists evidence-based examples of pain management strategies for older adults, as patient-centered and “well-suited” to guide conversations based on patient preferences (Participant 5). Clinicians thought that the conversation tool illustrated the multimodal approach to pain management and could help patients understand all the options for their care and “empower them” (Participant 18).

Participants expressed a desire for greater adaptability and personalization of the conversation tool. They said some visits called for more targeted and selective approaches and would prefer to “just discuss the most likely best fit treatments for the patient” to save time (Participant 6). Some clinicians expressed discomfort with offering certain treatments or presenting treatments that “you’ve already had the discussion about it’s not really indicated for your type of pain” (Participant 18).

Smart order set. Clinicians thought that the SmartSet, “being able to see everything on one screen” (Participant 8), would help them provide better care for their patients. Participants also appreciated having educational materials easily accessible to activate and engage “without having to hand type it each time or start from scratch” (Participant 6).

Participants noted that the SmartSet contains “a lot of text” (Participant 2), which might make it difficult to use in real-world practice. They also mentioned that the electronic format might not accommodate diverse practice styles, as some clinicians prefer using “pen and paper” and avoid “looking at the screen” during visits (Participant 2).

DISCUSSION

Chronic pain in older adults is often undertreated and non-optimally managed. Clinical decision support systems (CDSS) offer a promising technology-based solution to assist primary care

clinicians in chronic pain management. This qualitative study contributes to understanding how CDSS can improve chronic pain management in older adults while highlighting the barriers and unmet needs faced by PCCs.

Our qualitative analysis of clinician interviews yielded several major findings: primary care clinicians 1) tried to prioritize non-pharmacological and multimodal treatment approaches with special considerations for their older adult patients, 2) identified several barriers to effectively managing older adult patients' chronic pain, and 3) were optimistic about potential benefits of implementation and utilization of CDSS but had reservations and concerns about the practicality of regular use.

Principal Results

Our findings underscore the importance of a multimodal and multidisciplinary approach to chronic pain management. Clinicians emphasized the value of non-pharmacological adjunct therapies, aligning with the CDC's Guideline for Prescribing Opioids for Chronic Pain.¹ This guideline advocates for a combination of pharmacologic and non-pharmacologic treatments to manage chronic pain effectively. Clinicians were enthusiastic about integrating topical agents, physical therapy, and high-quality patient education tools into treatment plans and appreciated the CDSS as an effective aid for staying compliant with existing clinical guidelines.

Clinicians' frustrations with current practices—such as time constraints and inadequate pain screening tools—highlight the potential of CDSS to address these issues. Previous studies have demonstrated similar practical challenges.¹³ CDSS can integrate up-to-date knowledge and robust clinical evidence into practice, helping prevent misapplication of guidelines, under-treatment of pain, and overreliance on opioids.²⁰ Additionally, by presenting patient-specific information to clinicians, CDSS can assist in managing polypharmacy, highlighting more and less safe medication options and facilitating individualized patient care. To address limited time, one potential strategy is to have clinic visits specifically focused on pain management, rather than appending pain management to

preventive and chronic care management visits. These visits could leverage the full CDSS, including the pre-visit questionnaire, so patients and clinicians are prepared to discuss chronic pain.

Clinicians viewed I-COPE as a valuable tool for improving pain management in older adults through its structured approach to assessment and treatment. This is in line with previous research suggesting that standardized, multimodal interventions can improve clinical efficiency, clinician confidence, and patient outcomes by facilitating more consistent and collaborative care.^{21,22} The benefits anticipated by clinicians reflect the broader evidence that well-implemented chronic care models can significantly enhance the quality of chronic pain management. Our findings suggest that the utility of pain-focused CDSS, like I-COPE, could be enhanced by integrating mechanisms to identify patients' desire to prioritize pain management ahead of their visits, such as through pre-visit questionnaires or scheduling prompts.

However, clinicians also expressed concerns about the challenges of integrating I-COPE into routine practice, particularly regarding workflow disruption, increased workload, and data completeness. These challenges are well-documented in the literature on CDSS systems, where multi-component interventions often face resistance due to their complexity.²³ Future innovations in CDSS, such as through the use of artificial intelligence, may help synthesize complex patient information and deliver more pointed recommendations to clinician while preserving clinicians' decision-making autonomy.²⁴ Additionally, issues related to technology accessibility among older adults highlight the need for careful planning to ensure equitable implementation, as older populations often encounter barriers to using electronic health tools.²⁵ Addressing these challenges is crucial for I-COPE, or any CDSS system, to achieve its full potential. Technologies that read questionnaires aloud to patients and allow them to respond verbally are increasingly usable and may help reduce this barrier in the future.²⁶

While the results of this study provide a valuable contribution to the literature around CDSS and pain management in older adults in particular, future work is needed. Follow-up studies should

explore how clinicians are using the CDSS after being fully integrated into the primary care setting. Additionally, studies should track patient outcomes, including satisfaction with pain management, functional changes, and impact on other health conditions.

Limitations

Our study includes several limitations. As is the nature of qualitative analysis, our results are influenced by the researchers' perceptions. In addition, our sample is limited to a single health system and geographic location; PCCs self-selected to participate in the study. The small sample size and specificity of the content also make our findings difficult to generalize.

Conclusion

The findings underscore clinician perspectives on current pain management in older adults and the potential of the I-COPE intervention to address existing barriers. Successful implementation will hinge upon addressing challenges related to workflow integration, clinician and patient adaptation, and accessibility. These insights are crucial for optimizing the delivery of comprehensive pain care and enhancing patient outcomes within primary care settings for older adults.

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Conflict of Interest

VG Press reports receiving funding from NIH and AHRQ and receiving consulting fees from Humana.

Author Contributions

IH, EMS, AK, MA, KT, DL, and NL made substantial contributions to the conception or design of the work. IH acquired the data for the work. IH, EMS, and AK analyzed the data and drafted the work. MM, MA, KT, DL, AZ, GE, CH, VGP, and NL reviewed the work critically for important intellectual content. All authors interpreted data for the work; gave final approval of the version to be published; and agreed to the accuracy of the work.

Sponsor's Role

AHRQ provided funding but was not involved in any component of the design, methods, subject recruitment, data collections, analysis, or preparation of paper.



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Supplementary Files