

NATIONAL ACADEMY OF MEDICINE

**ACTION COLLABORATIVE
ON COUNTERING THE
U.S. OPIOID EPIDEMIC**

RESEARCH AGENDA



Founded in 1970 as the Institute of Medicine



RESEARCH AGENDA

The National Academy of Medicine’s Action Collaborative on Countering the U.S. Opioid Epidemic is a public-private partnership composed of more than 60 organizations representing federal, state, and local governments; health systems; associations and provider groups; health education and accrediting institutions; pharmacies; payers; industry; nonprofits; and academia. The Action Collaborative is committed to developing, curating, and disseminating multi-sector solutions designed to reduce opioid misuse and improve outcomes for individuals, families, and communities affected by the opioid crisis. The Action Collaborative’s work focuses on four key areas: health professional education and training; pain management guidelines and evidence standards; prevention, treatment, and recovery services; and research, data, and metrics needs. Learn more about the Action Collaborative at: nam.edu/Opioid_Collaborative.

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Acute Pain	Pain that is often sharp, sudden, and caused by something specific. It usually does not last longer than six months and goes away when there is no longer an underlying cause for the pain.
Analgesic	An agent producing diminished sensation to pain without loss of consciousness.
BIPOC	An acronym that stands for Black, Indigenous, and people of color
Buprenorphine	A semisynthetic narcotic analgesic that is administered in the form of its hydrochloride $C_{29}H_{41}NO_4 \cdot HCl$ to control moderate to severe pain and treat opioid dependence.
Chronic Pain	Pain that is ongoing and usually lasts longer than six months. This type of pain can continue even after the injury or illness that caused it has healed or gone away.
Clinical Decision Support (CDS)	Clinical decision support provides clinicians, staff, patients, or other individuals with knowledge and person-specific information, intelligently filtered or presented at appropriate times, to enhance health and health care. CDS encompasses a variety of tools to enhance decision-making in the clinical workflow.
Medication for Opioid Use Disorder (MOUD)	The use of one of three medications (buprenorphine, naltrexone, or methadone) [often] in combination with psychosocial and/or behavioral therapy to treat opioid use disorder.
Methadone	A synthetic narcotic drug, $C_{21}H_{27}NO$, used especially in the form of its hydrochloride for the relief of pain and as a substitute narcotic in the treatment of opioid addiction.
Naltrexone	A synthetic opiate antagonist, $C_{20}H_{23}NO_4$, administered in the form of its hydrochloride.

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Opioid Use Disorder (OUD)	A problematic pattern of opioid use leading to problems or distress, with at least two of eleven criteria, as outlined by the Diagnostic and Statistical Manual of Mental Disorders, occurring within a 12-month period .
Precision Medicine	A form of medicine that uses information about a person’s own genes or proteins to prevent, diagnose, or treat disease.
Prescription Drug Monitoring Program (PDMP)	An electronic database that tracks controlled substance prescriptions in a state. PDMPs can provide health authorities with timely information about prescribing and patient behaviors that contribute to the opioid epidemic and facilitate a nimble and targeted response.
Professional Practice Gap (PPG)	The difference between health care processes or outcomes observed in practice, and those potentially achievable on the basis of current professional knowledge.
Screening, Brief Intervention, and Referral to Treatment (SBIRT)	Screening, Brief Intervention, and Referral to Treatment (SBIRT) is an evidence-based approach to delivering early intervention treatment services for persons with substance use disorders, and those at risk of developing a substance use disorder.
Stigma	In the social work literature, Dudley (2000), working from Goffman’s initial conceptualization, defined stigma as stereotypes or negative views attributed to a person or groups of people when their characteristics or behaviors are viewed as different from or inferior to societal norms.
Substance Use Disorder (SUD)	Occurs when the recurrent use of alcohol and/or drugs causes clinically significant impairment, including health problems, disability, and failure to meet major responsibilities at work, school, or home.
Taper	To diminish gradually.
Telehealth	Health care provided remotely to a patient in a separate location using two-way voice and/or visual communication.

BACKGROUND

In order to help address the persistent devastation of the nationwide opioid crisis, the National Academy of Medicine partnered with the Aspen Institute and over 60 interdisciplinary stakeholders to establish the Action Collaborative on Countering the U.S. Opioid Epidemic. Over the past two years, the Collaborative has sought to accelerate the national response to the opioid epidemic through the creation and dissemination of actionable cross-sectoral solutions. These solutions have centered on four priority areas, which represent among the highest-priority elements of the nation's response to the opioid crisis and are the focus areas of the Action Collaborative's working groups: Health Professional Education and Training; Pain Management Guidelines and Evidence Standards; Prevention, Treatment, and Recovery Services; and Research, Data, and Metrics Needs.

The working groups representing the first three priority areas identified critical evidence gaps, research questions, and data and metrics needs that if unaddressed will hinder the comprehensive response to the opioid crisis that is required to resolve it. The Research, Data, and Metrics Needs working group then validated these research needs and collated them into a comprehensive research agenda, which is presented in this document. Priorities identified in this research agenda build upon national recommendations and the existing state of science to elevate critical research gaps.

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In addition to highlighting pressing needs across the Action Collaborative's priority areas of work, this agenda emphasizes the crosscutting need to better understand the intersection of health disparities and the COVID-19 pandemic with the pain management and opioid use disorder (OUD) care continuums. Many studies conclude that, in comparison to non-Hispanic whites, patients of color consistently have the severity of their pain dismissed and their symptoms undertreated [8,16]. Disparities in access to OUD care persist among Black and Hispanic Americans, who particularly face greater challenges accessing evidence-based treatment [21]. In addition to exacerbating disproportionate levels of morbidity and mortality among Black, Indigenous, and People of Color (BIPOC), the COVID-19 pandemic has notably heightened barriers to OUD care for these patient populations [25]. Thus, addressing the negative impacts of health disparities and the COVID-19 pandemic will be paramount to curb the opioid epidemic and to establish an equitable health care system for all patients suffering from the opioid crisis.

Given the critical nature of the following research, data, and metrics priorities, public, private, and non-profit research institutions and funders should prioritize the execution of this agenda.

HEALTH PROFESSIONAL EDUCATION AND TRAINING

Although approximately two million Americans have an OUD [24] and tens of millions more suffer from chronic pain [1], OUD and pain management education and training is often underemphasized in health professional program curricula [3]. Of the 2016 National Family Medicine Graduate Survey respondents, a mere ten percent felt prepared to provide buprenorphine treatment to patients with OUD [28] and, in 2017, only 28.6 percent of family medicine residency programs reported requiring addiction medicine training in their curricula [27]. Such inadequate education and training is contributing to persisting practice gaps in pain management and the treatment of OUD and other substance use disorders (SUDs) across professions and clinical settings [18]. Addressing the root causes of these practice gaps, unwanted variation across training and practice settings [22], and system-wide infrastructure needs [10], is necessary to comprehensively improve the health professional education and training continuum. In addition, the COVID-19 pandemic has disproportionately harmed Black and Hispanic populations through exacerbation of pre-existing disparities in the treatment of pain and SUDs [25], further underscoring the urgent need to address gaps in training and practice. More than ever, health professional educators and trainers need to prioritize health equity by assessing attitudes and biases across the health workforce to address critical gaps in care and better meet the needs of patients with pain and OUD.

Current research in the health professional education and training field suggests that both pre- and post-licensure clinical training programs continue to inadequately address core pain management and OUD competencies [17]. Barriers to curricula improvement include inconsistent competencies, lack of tools that reliably measure pain, and clinician dissatisfaction with current trainings [9]. Support for clinician education that emphasizes collaborative, interprofessional, and patient-centered care could help address these barriers and known professional practice gaps (PPGs) [17]. Despite this promising approach, more work is required to implement sustainable education programs into community care settings [4], evaluate interventions to reduce clinician-based stigma towards patients with OUD [5], identify unexplored individual and team based pain management PPGs, and establish evidence-based guidelines for clinician education [19]. Understanding and addressing PPGs

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can improve the efficacy of health education. Further research centered on these gaps should drive needed changes in academic curricula and assessment, and facilitate alignment across health profession training requirements. Critical needs include using and improving evidence-based education interventions to address clinician-based factors such as attitudes and biases [19]; developing training efforts that reflect individual profession scopes of practice; determining appropriate profession-specific competencies for pain management and SUD treatment [29], including those for telehealth [7]; and investing in an evidence-informed infrastructure [29]. Research across these areas can facilitate a harmonized, interprofessional health education system.

RESEARCH, DATA, AND METRICS NEEDS

Priority: Support Ongoing Identification of Professional Practice Gaps

- **Explore opportunities to leverage setting-specific care data to support the identification of individual and team-based practice gaps related to pain and SUD.** Data from performance measures and claims information can provide valuable insights into practice environments [23]
- **Develop standards to study and publish root causes and methodological best practices related to PPGs**
- **Conduct research on practice variation that is not well understood and determine strategies for effective dissemination and implementation of best practices**
 - Potential focus areas: differences in prescribing practices between groups (e.g. physicians vs. nurses), for different types of pain (e.g. acute vs. chronic), for patients with different demographic characteristics (race and socio-economic standing (SES)), and for different geographic areas [22]
- **Facilitate the rapid and continuous evolution of health professional education curricula that is reflective of current pain management and SUD practices,** including informing profession- and setting-specific competencies [19]
- **Explore integration of telemedicine competencies into clinician education to help them meet the needs of all patients** [7], especially those who are disadvantaged, marginalized, and/or geographically isolated

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Priority: Foster Educational Research and Scholarship that Advances the Creation, Evaluation and Dissemination of Effective Educational Tools and Interventions

- **Foster scholarship and research among educators and educational stakeholders** to evaluate the effectiveness of educational practices, tools, and resources and Promote dissemination of evidence-informed best-practices through publications and learning communities-of-practice [29]
- **Develop and evaluate educational interventions that address PPGs and assessment approaches that facilitate learning and improvement [19]**
 - Potential focus areas: implementation and reinforcement of best practice guidelines, as well as critical topic-specific content, such as effective educational interventions for reducing stigma against people who use drugs and against medications for opioid use disorder
- **Investigate the dissemination and uptake of evidence-informed tools by clinicians to reinforce best practices**
- **Evaluate interprofessional studies on telemedicine education, administration, and use to determine lessons learned and promising implementation practices to better meet the needs of diverse patients [7]**

Priority: Improve Educational Infrastructure and Data Sharing

- **Implement data sharing to facilitate harmonization of requirements around competencies throughout and across educational/certifying/licensing systems [6]**
- **Collate data on the delivery and impact of education related to pain management and SUD for undergraduate, graduate/trainee, and health professional practice [17]**
- **Determine effective models for collaboration between setting-specific health profession educators and other institutional/system change-management stakeholders that have successfully fostered a learning culture** (e.g. learning health system stakeholders, implementation science, talent development/workforce learning, quality improvement, and practice improvement)

PAIN MANAGEMENT GUIDELINES AND EVIDENCE STANDARDS

The importance of widespread and effective pain management in combating the opioid crisis cannot be overstated. Advances in evidence-based multimodal and multidisciplinary treatment options for patients with pain and/or OUD can reduce unnecessary opioid exposure and improve patient quality of life [19]. Lack of aligned, evidence-based, subpopulation-specific pain management guidelines has likely contributed to suboptimal pain care and undesirable patient outcomes [18]. Thus, a critical component of addressing the opioid epidemic will be increased support for the development and judicious implementation of multimodal, population, and setting-specific pain management guidelines. In addition, inconsistent pain management prescribing practices contribute to persisting challenges in the prevention, management, and treatment of pain, and exacerbate disparities across patient groups [29]. The COVID-19 pandemic has further marginalized access to and disparities in traditional pain care for BIPOC [25], highlighting the critical need to improve prevention and multimodal care models. Such differences in pain treatment and care are not evidence-based, and necessitate research efforts to develop new standards of care grounded in science and health equity.

Several government agencies and health clinician associations have issued clinical pain management guidelines. The 2016 CDC Guideline for Prescribing Opioids for Chronic Pain offers guidance to primary care clinicians who treat adults with chronic non-cancer pain [2]. More recently, HHS released a 2019 pain management report that emphasizes the importance of interdisciplinary, patient-centered care and the use of multimodal approaches, including pharmaceutical, behavioral, restorative, and complementary therapies in the treatment of pain and OUD [29]. Pain management guidelines are increasingly recognizing the need for individualized care and are tailoring their recommendations to diverse patient populations [19]. In addition, current pain management research priorities include development of safer opioids and non-opioid analgesics, nonpharmacologic therapy, and comprehensive evaluation of pain management care models and integration of precision medicine into pain management across the spectrum of care [11].

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Despite the multiple publicly available clinical guidelines and research initiatives, many questions remain unanswered regarding pain management and OUD care. Therefore, research on best practices for pain management, including practices for interdisciplinary coordination and strategies to overcome barriers to care is needed to improve the state of pain care during the COVID-19 pandemic and beyond [32]. Once established, support for the implementation and dissemination of evidence-based approaches for multimodal care and appropriate payment models for the provision of this care will be critical. Highlighting and advancing opportunities to strengthen integral aspects of pain management and the translation of pain guidelines into practice can contribute to sustainable improvements across the pain care continuum and ultimately help curb the opioid epidemic.

RESEARCH, DATA, AND METRICS NEEDS

Priority: Better Understand and Address Gaps in the Prevention and Treatment of Pain and OUD, Including Payment Barriers

- **Produce ancillary frameworks and tools to address key practice- and system-level gaps in chronic pain management [19]**
- **Better understand the unintended consequences of opioid prescribing guidelines, laws, and regulations [2]**
- **Identify and characterize the influence of healthcare disparities and racism on acute and chronic pain management [11]**
- **Identify and characterize the influence of COVID-19 and shelter-in-place orders on chronic pain management [32]**
- **Collect data on co-prescribing of central nervous system depressants including which medications increase the chance of opioid overdose**
- **Determine how long-term use of opioids increases risk of co-occurring conditions (besides kidney and liver disease)**
- **Investigate current payment barriers to pain management and OUD care while considering the future role of alternative payment models [19]**

Priority: Investigate Opioid Tapering Strategies and Best Practices

- **Better understand and quantify the associated benefits and risks of opioid tapering [29], including best practices for specific patient-populations with co-existing conditions**
- **Determine the most effective tapering speed in the context of individual patient factors such as current opioid dose, preexisting OUD and/or behavioral health issues [20]**
- **Determine the best use of opioid agonists in opioid tapering and best practices involving the use of non-opioid pharmacologic and non-pharmacologic treatments as adjunctive therapy in specific patient populations, including those with and without behavioral health disorders [20]**
- **Assess the efficacy and composition of interdisciplinary teams in opioid tapering, including the most appropriate roles for family members and loved ones as part of the caregiving team [20]**
- **Evaluate essential components of shared decision making and tapering agreements [14]**
- **Identify best practices for frequency of follow-up and interaction between clinicians and patients while a taper is ongoing to ensure a safe and well-tolerated taper [20]**
- **Investigate and compare tapering processes and outcomes for different patient populations and evaluate the impact of the COVID-19 pandemic on tapering outcomes**

Priority: Evaluate Opioid, Non-Opioid Pharmacological, and Non-Pharmacological Therapies for Management of Acute and Chronic Pain

- **Investigate the potential relationship between non-pharmacological pain management interventions and the need for opioids to control pain across diverse patient populations [4]**
- **Better understand levels of clinical pain and available methods to optimize recovery [19]**
- **Research how to best select and provide non-pharmacologic therapies for specific acute and chronic pain conditions [11]**
- **Collect data on pain and opioid use trajectories after common surgeries [11] including interventions in the postoperative period to prevent chronic pain and opioid use after surgery**
- **Identify successful models of multimodal pain management for acute, transitional, and chronic pain that could be scaled outside of integrated delivery systems [4]**

PREVENTION, TREATMENT, AND RECOVERY

Improving the availability, accessibility, and quality of prevention, treatment, and recovery services for patients with OUD is integral to combating the opioid epidemic. Access to these services has consistently been inadequate, which continues to perpetuate the epidemic and cause preventable patient morbidity and mortality [22]. To strengthen prevention, treatment, and recovery care, the curation and dissemination of best practices and integrated approaches, with guidance for how to implement, scale, and sustain these practices is needed. Such efforts should apply a health equity approach, particularly as the COVID-19 pandemic has further exacerbated challenges in accessing high quality care and has disproportionately impacted BIPOC [25]. Undeniably, data collection relevant to diverse populations suffering from OUD and SUD needs to be prioritized to better understand and respond to the needs of these patients.

Current work on OUD prevention primarily focuses on reducing opioid supply and demand. Initiatives include developing health system-wide best practices for opioid prescribing, integration of alternative methods for pain management into standards of care, and efforts to reduce adolescent exposure to opioids [19]. Although there is strong evidence that medications such as methadone, buprenorphine, and extended-release naltrexone should be the central component in the treatment of OUD, many patients are unable to access these therapies and high quality individualized care [18]. Thus, recent research has investigated strategies to overcome OUD treatment barriers, including institutional policies, interpersonal stigma, and financial constraints, among others [15], and to develop best practices for treatment of subpopulations in order to maintain long-term recovery [12].

Despite progress, further research is still needed to assess remaining gaps across the continuum of care, as well as to identify critical changes to practice and policy that can address barriers in transitions between levels of care. A better understanding of innovative care platforms, such as telehealth services, is a particular area of need that requires dedicated research [19]. Implementation of identified best practices and dissemination of lessons learned can help improve treatment outcomes and quality of life for diverse patient populations.

RESEARCH, DATA, AND METRICS NEEDS

Priority: Collect and Assess Data on Demographics, Social Determinants of Health, Special Populations, and Outcomes

- **Collect more granular data on opioid-related deaths to elucidate the causes of opioid overdose** (e.g. SUDs, pain treatment, recreational use of opioids in children) [11]
- **Include information specific to patient sociodemographic factors, such as socio-economic standing, in data related to OUD prevalence and rescue outcomes [19]**
- **Specifically target capturing data for especially high-risk populations with SUDs** (e.g. people of color, rural, incarcerated, homeless, and expectant mothers) to gather insights on barriers to obtaining treatment [11]
 - Potential focus: persisting issues related to accessing treatment and recovery services, disparities and mortality numbers, and other outcomes in the context of the COVID-19 pandemic [32]
- **Evaluate the efficacy of prevention, treatment, and recovery strategies in special populations** (adolescents, incarcerated populations, etc.) [4,11]
 - Potential focus: strategies that involve patient peers and family members
- **Establish data systems to monitor and take steps to prevent a rise in SUDs and overdoses during the COVID-19 pandemic (and afterwards) [32]**

Priority: Review Current Telemedicine Services, Including Access Limitations

- **Conduct studies to address potential bias and limitations of telehealth studies to date**
 - Potential focus: studies must consider rural populations - telemedicine may be a potential fruitful intervention for rural communities [19]
- **Collect data on barriers to telemedicine access for underserved/marginalized populations [13]**
- **Evaluate use of telehealth to support the needs of patient populations with SUDs or chronic pain during COVID-19 and beyond [30]**
- **Further investigate issues of informed consent, guidance, and clarification of uncertainties, best practices, and lessons learned related to telemedicine [7]**

Priority: Better Understand Key Challenges in Care Transitions

- **Evaluate compliance with and use of care plans when persons with OUD are moving between care settings;** map OUD journeys comprehensively, including details about what is happening/not happening during handoffs, and the role of family engagement
- **Implement and evaluate strategies to increase patient engagement and motivation to receive and maintain committed to OUD treatment [15]**
- **Identify obstacles that exist for hospitals to enable streamlined entry into treatment after rescue [19],** including methods used to successfully move patients into treatment, reasons for failure to move patients into treatment, and data stratified by subpopulations
- **Assess barriers across the Screening, Brief Intervention, and Referral to Treatment (SBIRT) continuum.** Follow patients throughout treatment to design targeted interventions to increase treatment effectiveness and prevent escalation of substance abuse and overdose deaths
- **Collect data on the most urgent barriers to effective/efficient care transitions and needs of patients with SUDs and of clinicians who treat SUDs during the COVID-19 pandemic**

Priority: Evaluate Policies/Initiatives that may Facilitate Greater Access to Prevention, Treatment, and Recovery Care

- **Better understand how specific policies can improve implementation or remove barriers to OUD and pain management care [19]**
 - Examples include: suspension rather than termination of Medicaid eligibility when incarcerated, reimbursement for telemedicine or non-pharmacological treatment of pain
- **Evaluate effectiveness of OUD anti-stigma campaigns among clinicians and patients [5]**
- **Determine the impact of clinical decision support (CDS) on opioid screening and prescribing**
- **Assess the benefits and risks of safe syringe programs for those with OUD**
- **Simplify and increase usage of prescription drug monitoring programs (PDMPs), measure outcomes and impact of utilizing PDMPs and determine lessons learned for other data sharing tools [15]**
- **Identify the relationship (or lack thereof) of naloxone availability of over-the-counter and overdose deaths**

Priority: Identify Barriers and Best Practices Relevant to Treatment and Medications for Opioid Use Disorder (MOUD)

- **Assess the gap between evidence-based practice and clinical implementation of MOUD [31]**
 - Potential focus: optimal strategies for promoting evidence-based opioid prescribing, the role of pharmacies, and evaluations of programs that might expedite access to MOUD
- **Investigate federally-funded treatment programs to determine if they follow best practices and provide MOUD**
- **Evaluate innovative models of treatment delivery that address social determinants of health and racial and geographic disparities in access to care***
- **Better understand the barriers federally-funded opioid treatment programs face in providing medical, counseling, vocational, educational, and other assessment and treatment services [15]**
- **Compare the ease of implementing MOUD under different payment structures, including value-based payment arrangements**
- **Determine the impact of current state and federal requirements on access to and provision of MOUD**
 - Potential focus: X-waiver, education requirements, patient limits, team composition, supervision requirements
- **Expand the evidence base around use of integrative therapies regarding opioid reduction in SUD treatment [29]**
 - Potential focus: traditional, complementary, and alternative treatments for multimodal care

CONCLUSION

The Action Collaborative's Research, Data, and Metrics Needs Working Group has identified critical evidence gaps, research questions, and data and metrics needs to focus the response to the U.S. opioid epidemic moving forward. The research agenda builds upon the existing state of evidence to collate and elevate cross-cutting needs that, if addressed, can facilitate a comprehensive response to the opioid crisis. Given the scope and urgency of this work, it should be widely disseminated and prioritized for funding by multiple stakeholders to promote a coordinated research effort. The COVID-19 pandemic's exacerbation of pre-existing health disparities and the opioid crisis underscores the need for multidisciplinary actors (e.g. government agencies, academic research centers, health systems) to address these priorities according to the expertise and capabilities of their organizations utilizing a health equity lens. Furthermore, although greater understanding and development of potential solutions are vital steps in an effective national response to the crisis, implementation of these solutions into practice will be required to see improved patient outcomes. Promising translation models include the CIHR Model of Knowledge Translation, the Understanding-User-Context Framework and the Ottawa Model of Research Use [26]. Research priorities should be accompanied by knowledge translation guidance and should be supported by continued coordination across the public and private sectors for long-term, sustainable resolution of the opioid crisis.

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APPENDIX: FULL LIST OF RESEARCH NEEDS

This appendix contains the complete list of research needs as identified by Action Collaborative members and its Network Organizations. The highest priority research needs have been included in the main text of the research agenda.

Health Professional Education and Training

- Investment in educational research, particularly among continuing education, to promote research and scholarship that informs best approaches to elaborate the determination of PPG, development of effective educational interventions to address those gaps, and assessment approaches that facilitate learning and improvement
- Effectiveness research on the dissemination and uptake of evidence-informed tools to educate clinicians on best practices in treating and managing pain and OUD
- Research on effectiveness of interventions designed to facilitate education and fill PPG
- Possible recommendations to journal editors that Medical Subject Headings [MeSH] include frameworks of education-focused research terms such as professional practice gaps, educational assessment, and measures of educational outcomes
- Utilize pragmatic studies/implementation science to better understand current practice gaps
- Research on the effectiveness of strategies to reduce stigma against people who use drugs and against MOUD among health care professionals
- Education on SUD as a chronic brain disorder
- Research into practice variation that is not well understood, such as differences in prescribing practices between groups (physicians vs. nurses), for different types of pain (acute vs. chronic), and for patients with different demographic factors without explanation
- Better understanding of why clinicians do not utilize or know of existing best practices
- Describe the necessary time and resource allocations in the practice setting to fill PPG
- Research on how to best implement and reinforce practice guidelines
- Research on what clinicians need to feel safe (lack of fear of losing their jobs) when treating patients with pain
- Research on the best communication strategies among clinicians and between clinicians and patients/families

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- Develop and roll out targeted education efforts for patients on the benefits and uses of telemedicine and for clinicians on how to safely and effectively administer telehealth services for patients with SUDs or who experience chronic pain
- Prepare the health care workforce for a longer-term pivot towards providing virtual health services by integrating telemedicine into education and allowing clinicians in training to gain the skills necessary to meet the needs of all patients, especially those who are disadvantaged, marginalized, and/or geographically isolated
- Research into if and how the medical education curriculum is changing in the pain management sphere
- Data sharing to facilitate harmonization of requirements around competencies
- Greater investment in data infrastructure to facilitate the simplification and harmonization of disparate educational/certifying/licensing systems to promote interoperability
- Fostering greater scholarship/publications about the use of the tools for educators
- Better data sharing between prescription drug monitoring programs and electronic health records
- Data on the incorporation of education related to pain management, substance use and opioid use disorders for undergraduates, medical students, and across medical professions

Pain Management Guidelines and Evidence Standards

- Research and recommendations needed on tapering speed versus factors including current opioid dose, preexisting OUD and/or behavioral health issues
- How to determine optimal non-opioid pharmacologic and non-pharmacologic treatments to use as adjuncts in opioid tapering
- The efficacy and composition of interdisciplinary teams in opioid tapering
- Research on the most appropriate roles for family members and loved ones as part of the caregiving team
- How to determine the best use of opioid agonists in opioid tapering in patients with OUD as well the use of methadone and buprenorphine in tapering patients on long-term therapy
- Identification of best practices for tapering polypharmacy patients
- Identification of optimal treatments for patients with coexisting behavioral health disorders undergoing opioid tapering
- More clearly identify better the associated benefits and risks of opioid tapering.
- Identification of optimal patient follow-up intervals during and after a taper

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- Strategies and protocols for successfully tapering opioids after surgery in a procedure-specific fashion
- The efficacy of tapering agreements and what components they should contain
- Observational studies are needed to focus on pain and opioid use trajectories after common surgeries, as well as interventions in the postoperative period to prevent chronic pain and opioid use after surgery
- Identify successful models of multimodal chronic pain management programs that can be scaled outside of integrated delivery systems, with specific focus on:
 - Recommended pain management modalities in patients with past history of substance abuse;
 - Optimal screening strategies to better detect behavioral health and substance use issues among acute pain patients being treated in primary care settings
- Data on co-prescribing of central nervous system depressants, including which medications increase the chance of opioid overdose
- Research on how long-term use of opioids increases risk of co-occurring conditions (besides kidney and liver disease)
- Research and strategies for benzodiazepine tapering standards
- Better understanding of the levels of clinical pain and associated technology support to optimize recovery, including how alternative payment models can be integrated
- Research on alternatives to opioids for patients in acute pain
- Additional evidence on how to best deliver nonpharmacologic therapies while satisfying chronic pain patients by the impact level of their conditions, as existing research shows different interventions are needed for high-impact vs. low-impact chronic pain
- Population-specific data is needed on how and if non-pharmacological pain management interventions can decrease or eliminate need for opioids in select populations
- Additional evidence is needed to identify pain control best practices for the increasing number of patients electing for hospice benefit with co-morbid OUD
- Identify and improve key clinician communication points during transitions of care, especially from palliative care/chronic pain service to hospice
- Produce ancillary frameworks and/or tools to address key practice- and system-level gaps in chronic pain management

Prevention, Treatment, and Recovery

- Prevention strategies that target adolescents, including strategies that involve the individual's peers and family members.
- Efficacy of MOUD in some special populations (e.g. adolescents, incarcerated populations)
- Optimal models for drug courts

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- Need for more granular data on opioid-related deaths. Data will help elucidate the cause of opioid overdose (SUD vs. pain treatment, vs. recreational use of opioids in children).
- More research is needed on whether offspring of parents with OUD are more or less likely to use opioids than their peers
- Interventions that have shown reductions in prescription opioid misuse and use of other opioids in 12-18 year olds must be identified and verified, as well as strategies for parents of adult children who are refusing treatment
- Demographic and SES data on rescues and rates of success and failures
- Interrogate sociodemographic disparities in opioid use disorder prevalence, incidence, outcomes and the reasons why
- Develop a deeper understanding of why people with different demographic backgrounds and who reside in different communities present or do not present for treatment
- Establish data systems to monitor and take steps to prevent a rise in SUDs and overdoses during the COVID-19 pandemic (and afterwards)
- Collect more data on and address inequitable access to OUD care based on patient race and socioeconomic status
- Specifically target capturing data for especially high-risk populations with SUDs (i.e. people of color, rural, incarcerated, homeless, and expectant mothers) to gather insights on persisting issues, challenges to accessing treatment and recovery services, up-to-date mortality numbers, and other outcomes in the context of the COVID-19 pandemic
- To better understand outcomes and impact of PDMP usage and determine lessons learned for other data sharing tools
- Collecting data on access to, prevalence of retention, and drop out from MOUD, as well as reasons for drop out, demographic data, potential predictors, and average time frames
- Gap between evidence-based practice and clinical implementation of MOUD, including optimal strategies for promoting evidence-based opioid prescribing, the role of pharmacies, and evaluations of programs that might expedite access to MOUD
- Impact of changes in acute pain prescribing on long-term patient-centered outcomes
- Comparison of effectiveness of available screening tools for determining the risk for opioid misuse
- Percent of patients offered take-home naloxone and this relationship to reduced occurrence of overdose
- Percent of patients offered buprenorphine (after rescue? at what point?) and data on why it is accepted or why it is refused
- Data is needed on how employers evaluate hiring individuals who are on MOUD, especially if there is discrimination against this population
- Data is needed on how current state and federal requirements associated with providing MOUD (x-waiver, education requirements, patient limits, composition of care team, and clinician supervision requirements) impact access to and provision of MOUD

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- Data is needed on the most effective ways to encourage clinicians to pursue obtaining an x-waiver
- Data is needed on what value-based payment arrangements sustainably align outcomes and payment for MOUD
- The evidence base around use of integrative therapies regarding opioid reduction is limited; Can traditional, complimentary, and alternative integrative treatments replace opioids and/or can they interfere with OUD treatment, given that the evidence base for such treatments is limited?
- Evaluation of OUD stigma reduction campaigns among healthcare clinicians and patients
- Evaluation of addiction treatment programs that receive federal funding to determine if they provide evidence-based care like MOUD
- Evaluation of programs that expedite access to MOUD
- Fund and evaluate innovative models of treatment delivery that address social determinants of health and racial and geographic disparities in access to care
- Establish clear metrics in settings where clinicians are likely to encounter patients with OUD, including screening for SUDs and provision of MOUD
- Provision of technical assistance for clinicians treating patient with MOUD
- Further research on the barriers federally funded opioid treatment programs face in providing medical, counseling, vocational, educational, and other assessment and treatment services
- Research on emerging systems to alert clinicians that a patient may be at high risk for addiction
- Further research and implementation of targeted interventions to improve prevention and treatment outcomes in high-risk populations
- Collect data on the most urgent needs of patients with SUDs and of health clinicians who treat SUDs during the COVID-19 pandemic
- More data is needed on care transitions, and specifically on compliance and use of care plans when patients with OUD are moving between care settings, comprehensively mapping the journey of seeking care for OUD (including details on what is happening or not happening during handoffs), and the role of family engagement
- Additional data is needed on care that occurs in the emergency department, including screening and severity measures, effectiveness of training in naloxone, use of MOUD, and overdose rate
- Data is needed on whether Good Samaritan laws or other factors calling emergency services when encountering someone who has experienced an overdose
- What obstacles exist for hospitals to enable streamlined entry into treatment after rescue, including methods used to successfully move patients into treatment, reasons for failure to move patients into treatment, and data stratified by subpopulations

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- Impact of clinical decision support (CDS) on opioid screening and prescribing
- Screening, Brief Intervention, and Referral to Treatment (SBIRT) data are needed on patients who are referred
- Data is needed as patients move through treatment that can be utilized to design targeted interventions to increase treatment effectiveness
- Data is needed on Barriers to SBIRT implementation and expansion and implications on being able to reimburse clinicians who conduct SBIRT
- Research on strategies to increase patient engagement and motivation to receive OUD treatment
- Conduct studies to address potential bias and limitations of telehealth studies to date. Studies must consider rural populations - telemedicine may be a potential fruitful intervention for rural communities
- Data on issues of access for underserved/marginalized populations
- More data is need on implementation of telehealth, including issues of informed consent, and lessons learned
- Evaluate use of telehealth to support the needs of patient populations with SUDs or chronic pain during COVID-19 and beyond
- Expand access to telehealth SUD treatment options for expectant mothers by integrating treatment early into remote obstetric care
- Data is needed on how clinical care informs guidelines. Data is needed on how the implementation of metrics, especially unintended consequences from collecting this data, can help or harm patients. Data (or the sharing of existing data) is needed on how payers leverage guidelines and metrics to reduce the cost of care
- Research is needed into local and state policy levers that have the greatest ROI for prevention and treatment
- Data is needed to better understand how policy can improve implementation or remove barriers to accessing treatment (e.g., suspension rather than termination of Medicaid eligibility when incarcerated, reimbursement of telemedicine or non-pharmacological treatment of pain)
- Research is needed on the current level of adoption and enforcement that currently exist for MHPEA among health insurance commissioners and state leaders
- Research is needed to identify which data sharing innovations are working to protect patient data while enabling whole-team care, and how can data be shared across state data "silos" for medical examiners, PDMPs, substance use treatment clinicians, hospital admissions and discharges, Departments of Correction, and Medicaid/all payer databases
- Data is needed to better understand barriers to patient engagement in treatment and identification of strategies to improve interest in treatment
- Data is needed on whether the expansion of over-the-counter naloxone would help decrease overdose deaths, and any related implications of such an expansion

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- Research is needed to understand the benefits and risks of expanding access to safe syringe programs for those with OUD
- Data on non-fatal ODs, in addition to data on role of non-emergency medical transportation (Medicaid or otherwise) in better treating behavioral health conditions by addressing treatment barriers, raising treatment adherence, and ameliorating behavioral health clinician shortages is needed
- Examine the role of community and the primary factors involved in creating and sustaining recovery-oriented environments, especially in resource-poor settings, as well as the impact of recovery coaches across various stages of recovery, and the role of community networks as a protective factor for supporting recovery-oriented environments, particularly in minority communities
- Research on the impact of PDMPs and other data sharing tools on overdose mortality and other related health outcomes
- Best practices on decreasing barriers to data sharing among substance use treatment programs to improve care coordination
- Increased feedback from people with lived experience of OUD about their experiences in the treatment system

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