

Non-pharmacological approaches to chronic musculoskeletal pain management: Recommendations from the State-Of-The-Art Conference

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Overview of presentation



STATE OF THE ART CONFERENCE

**Non-pharmacological Approaches
to Chronic Musculoskeletal
Pain Management**

VA HSR&D

- Provide background and context for the SOTA Conference
- Provide overview of SOTA Conference objectives and processes
- Provide a summary of SOTA findings and next steps
- Q&A

Rationale for this SOTA

- Pain Management is challenge for patients and health systems
- No health system in the US integrates full spectrum of pain management interventions to provide care that is comprehensive, evidence-based and coordinated seamlessly for eligible patients and their providers
- As an integrated health system with loyal patients, VA is ideally suited to develop an integrated approach

SOTA Conference Background and Context

- White House summit on prescription opioid crisis
- National Pain Strategy and CDC Guidelines for Prescribing Opioids for Chronic Pain
- April 2016 Complementary and Integrative Health Approaches to Management of Musculoskeletal Pain Expert Meeting
- Agreement about broader scope and objectives for SOTA Conference
- Comprehensive Addiction and Recovery Act
- Second partnered RFA with VA HSR&D, NIH/NCCIH/NIDA and DOD

Burden of Pain Among Veterans

- 20-30% of US adults report chronic pain
 - Low back pain, neck pain, & other musculoskeletal disorders are 3 of top 5 causes of disability in US
 - Cost to society is ~\$500-\$635 billion annually
- 50-60% of Veterans in VA primary care report chronic pain

Kennedy J, et al., J Pain 2014; Murray CJL, et al., JAMA 2013; Kerns RD et al., J Rehabil Res Dev 2003; Butchart A et al, Clin J Pain 2009.

Burden of Pain Among Veterans

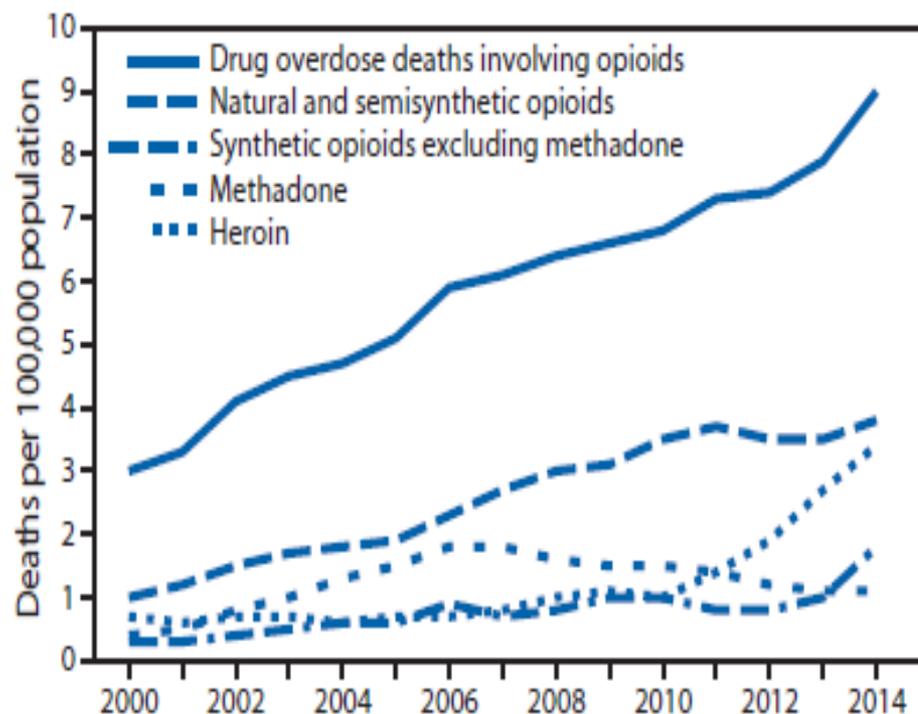
- >5 million Veterans with musculoskeletal diagnoses (2000-2011)
 - Most common: non-traumatic joint disorders, back conditions, osteoarthritis
 - Women more often report moderate-severe pain (51 vs. 43%)
 - High co-prevalence rates of medical, mental health and substance use disorders

Goulet JL et al., Pain 2016

Burden of Opioid Harms

- 28,647 opioid poisoning deaths in 2014
- “Nearly every aspect of the opioid overdose death epidemic worsened in 2014”

FIGURE 2. Drug overdose deaths* involving opioids,^{†,§} by type of opioid[¶] — United States, 2000–2014



Burden of Opioid Harms in Veterans

- VA patients have ~2x the rate of accidental poisoning deaths as the US general population
 - Opioids are most common drug involved
- Among Veterans with pain, higher prescribed opioid doses are associated with higher risk of accidental poisoning death and suicide death
- Among OEF-OIF Veterans with pain, mental health conditions are associated with...
 - Higher opioid doses, more co-prescribed benzodiazepines
 - Higher rates of opioid harms

Bohnert ASB et al, Med Care 2011 Bohnert ASB et al, JAMA 2011;
Seal KH et al, JAMA 2012; Ilgen MA et al, Pain 2016

SOTA Goals



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- Where is the evidence sufficient to move to implementation?
 - Reach consensus on policy recommendations to improve implementation
- What important questions do not have sufficient evidence to guide practice and clinical policy?
 - Reach consensus on recommendations for research
- What issues or new developments are on the horizon that may need to be considered in research, planning, and policy?
 - Prioritize issues for future consideration

SOTA Process



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- Co-chairs (Krebs and Kerns) convened planning committee
 - refined key questions
 - identified subject matter experts to participate in work groups
 - selected pre-conference readings and work group questions to address SOTA objectives
- Four work groups and leads*
 - Psychological/Behavioral (Alicia Heapy*, Ben Kligler, Jan Murphy)
 - Exercise and Movement (Sarah Krein*, Stephen Ezeji-Okoye, Kelli Allen)
 - Manual Therapies (Tony Lisi*, Dan Cherkin, Mac Gallagher)
 - Models for Delivery (Matt Bair*, Will Becker, Lynn DeBar)

SOTA Meeting Agenda



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- Day 1
 - Presentations by Kurt Kroenke (keynote) and Adam Anicich (Veteran perspective)
 - Work group leads facilitated discussion to address key questions
 - Work groups reached consensus on priority research agenda, policy recommendations and implementation strategies
 - Developed summary of work group deliberations
- Day 2
 - Work group summaries presented to all SOTA participants
 - Opportunity for clarifying questions and discussion of summaries
 - Panel response to work group summaries and full group discussion

Work Group Charge



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Day 1

- Use a collaborative process to mine, align, and refine ideas
 - Use work-group specific questions to guide you
 - Refer to specific evidence to support statements
 - Keep in mind larger context of an integrated framework for pain management in VHA
- Agree on presentation to be delivered to the full SOTA group

Day 2

- Work group leads present summary reports
- Full SOTA group discussion

Focus of workgroup questions



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- Effectiveness of therapies for chronic musculoskeletal pain
- Delivery/dosing strategies
- Patient selection
- Implementation challenges and strategies
- Outcome measures for prospective research



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SOTA Workgroup Reports

Psychological/Behavioral Therapies Work Group Members

- **Alicia Heapy, PhD**
- **Benjamin Kligler, MD, MPH**
- **Lori Bastian, MD, MPH**
- **Jill Bormann, PhD, RN**
- **Diana Higgins, PhD**
- **Mark Ilgen, PhD**
- **David Kearney, MD**
- **Natalia Morone, MD**
- **Jennifer Murphy, PhD**
- **Karen Seal, MD, MPH**
- **Stephanie Taylor, PhD**
- **Kevin Vowles, PhD**

EFFECTIVENESS OF TREATMENTS

All of the treatments discussed were determined to have at least promising evidence of effectiveness. Many of the gaps in knowledge/understanding are common across treatment approaches.

Strong Evidence: need a focus on hybrid effectiveness/implementation trials

- CBT
- Mindfulness meditation (e.g. MBSR)
- ACT

Promising Evidence: need focus on effectiveness

- Meditation
- Biofeedback
- Hypnosis
- Relaxation therapies

EFFECTIVENESS: CHALLENGES

Although a number of well done trials provide evidence for efficacy of these interventions, the real world effectiveness for these interventions on meaningful outcomes are not well known. Important questions include the effectiveness of these approaches in a population with co-morbidities including opioid use and mental health disorders.

GAPS:

- Dose, treatment, frequency, intensity, length of session
- Telehealth vs. in person
- Group vs. individual
- What is the best approach for comorbid pain and opioid use disorder?
- What is the impact of co-existing opioid use disorders on effectiveness?
- What substance use-related outcomes should be included?

EFFECTIVENESS: CHALLENGES (cont)

GAPS (cont):

- Specifically designed trials to recruit populations with comorbidities of interest
- How to evaluate combination treatments for chronic pain? Is it better to have multiple approaches delivered by a single provider or multiple providers?
- How to evaluate sequenced treatment approaches?
- How to evaluate impact of specific providers who are trained in combinations of approaches?
- What type of provider delivers a given treatment more effectively?
- How to evaluate which therapy or combination will work best for a given patient? Does incorporating patient choice in pain care plan lead to better outcomes?

RECOMMENDATIONS

- Non-pharmacological pain treatments should be integrated into primary care settings in the VA.
- VA should invest in more effective strategies for tracking utilization of psychological, behavioral and mind-body therapies for pain to ascertain utilization and effectiveness.
- HSRD should convene a small group to develop a (short!) consensus set of outcomes measures that should be used in pain research

RECOMMENDATIONS

- VA should invest resources in infrastructure for collecting outcome data at the point of care without increasing provider burden
- In order to improve access, VA should create a concrete plan for a dedicated group within IT to support and facilitate use of technology for pain treatment delivery
- VA should consider investing in a long term prospective observational study of pain treatment including psychological and behavioral therapies.

Priority research questions

- What is the effectiveness of integrated treatments for pain and common comorbid conditions (OUD, other SUDs, PTSD, depression)?
- What is the appropriate mode of delivery for therapies: Telehealth vs. in person, Group vs. individual, briefer or standard?
- What is the incremental benefit of combined approaches relative to a single approach (especially psychological + exercise or yoga)?
- What is the optimal approach to sequencing treatments?
- Can patient choice or treatment tailoring increase patient engagement and improving treatment outcomes?
- What is the comparative effectiveness of different psychological/behavioral interventions relative to each other and relative to other non-pharmacological approaches?

Exercise and Movement Therapies Work Group Members

- Sarah Krein, PhD, RN*
- Stephen Ezeji-Okoye, MD*
- Kelli Dominick Allen, PhD**
- Joseph Brence, PT, DPT, FAAOMPT,
COMT, DAC
- Diana Burgess, PhD
- Erik Groessl, PhD
- Krista Highland, PhD
- Erin Krebs, MD, MPH***
- Una Makris, MD
- Susan Murphy, ScD, OTR
- Carol Oatis, PT, PhD
- Erica Rose Scioli, PhD
- Karen Lohmann Siegel, PT, MA
- Pradeep Suri, MD
- Chenchen Wang, PhD

*Co-Facilitators **Recorder

***SOTA Co-Chair

Effectiveness of exercise/movement therapies

Sufficient evidence

- Tai Chi
- Yoga
- Exercise
 - Coordination/stabilization
 - Strengthening & resistance
 - Aerobic/cardiorespiratory

Need further study

- Balance/proprioception exercise for OA
- Aquatic exercise
 - Especially for LBP & fibromyalgia (may be sufficient for OA)

Dosing/delivery strategies

- For most therapies, need further study of...
 - Effective dose, frequency, intensity
 - Effective strategies for improving adherence
 - Effective strategies for maintaining benefits
 - Effective delivery approaches
 - Supervised vs. unsupervised
 - Group, individual, telehealth, etc.
 - Background and training of therapists/teachers
 - Benefits of combination therapies (& how to sequence)

Implementation challenges

- Evidence gaps related to...
 - Training and background of those delivering therapy
 - Location of delivery
 - Use of group or individual therapy sessions, potential for telehealth or remote delivery
- Lack of standardized protocols to ensure the therapy is delivered in a way that is safe and effective for the given population

Priority research questions

- What is effectiveness of different delivery strategies (e.g., individual vs. group vs. telehealth)?
 - Less resource-intensive vs. more resource-intensive interventions
- What are effective implementation strategies to ensure adoption of therapies in clinical settings?
- What are effective strategies to engage patients and sustain benefits?
 - Does patient choice in treatment selection affect treatment engagement/outcomes?

Priority research questions

- What is the effect of combining exercise/movement treatments with other therapies?
 - How should they be delivered/sequencing?
 - Are beneficial effects additive?
- What defines an optimal evidence-based intervention package in clinical practice?
 - Yoga & tai chi higher priority for defining elements that must be delivered
- What patient characteristics predict response to a given treatment? To different delivery strategies?
 - Comorbidity, psychological characteristics, physical limitations

Manual Therapies Work Group Members

- **Anthony Lisi, DC**
- **Melissa Braganza, MPH**
- **Daniel Cherkin, PhD**
- **Paul Dougherty, DC**
- **Christine Goertz, DC, PhD**
- **Wayne Jonas, MD**
- **Janet Kahn, PhD, LMT**
- **Karl Lorenz MD, MSHS**
- **Travis Lovejoy, PhD, MPH**
- **Niki Munk, PhD, LMT**
- **Debra Weiner, MD**

Manual therapies

- Effectiveness: Evidence for clinically-relevant benefits (pain intensity, pain-related function, quality of life, other pain-related outcomes)
 - Sufficient evidence
 - Need further study
- Dosing and delivery: Evidence for effective frequency, duration, and intensity of therapies during the initial course of therapy and for ensuring sustained benefit

Effectiveness of manual therapies

Sufficient evidence

- Manipulation for LBP, neck pain
- Massage for LBP, neck pain
- Acupuncture for LBP, neck pain, mild-mod knee OA

Need further study

- Manipulation for extremity conditions, thoracic pain, cervicogenic headache
- Massage for extremity conditions, fibromyalgia
- Acupuncture for extremity conditions other than mild-mod knee OA

Dosing/delivery strategies

- Sufficient evidence
 - For all therapies, starting with initial trial of up to 6 visits within 6 weeks to assess initial response
 - For massage (neck): 60 minute duration of sessions
 - For all therapies, combining with active therapies and self-management approaches
 - For manipulation, combining with exercise (neck); behavioral therapy (LBP)

Dosing/delivery strategies

- For most therapies, need further study of...
 - Minimum effective dosage
 - Duration of beneficial effects and how to maximize
 - Optimal delivery for chronic pain management
 - Effects of booster sessions
 - Within visit (one provider) treatment combinations
 - Combined care pathways, sequencing
 - Combining manual with self-management strategies

Implementation challenges

- Knowledge of the value and effectiveness of manual therapies
- Variation in availability of services at different VA facilities
- Burden for referring clinicians
- Patient-level: limited access, cost, travel burden

Priority research questions

- What are optimal care pathways to guide the timing of referral for manual therapies at the primary care level?
- What is the optimal dosage of manual therapies, with respect to both initial and booster treatments?
- Are outcomes improved by combining manual therapies with patient self-management approaches?
- Are outcomes improved by combining manual therapies with other non-pharmacological therapies?
- What are optimal sequencing strategies for delivering manual therapies, other non-pharmacological therapies, and pharmacological therapies?

Models for Delivering Multi-Modal Pain Care

Work Group Members

- **Matthew Bair, MD, MS**
- **Ranjana Banerjea, PhD, MBA**
- **William Becker, MD**
- **Amy Bohnert, PhD, MHS**
- **Barbara Bokhour, PhD**
- **Chester "Trip" Buckenmaier, III, MD**
- **Lynn DeBar, PhD**
- **Steven Dobscha, MD, FAPM**
- **Joseph Frank, MD**
- **Tracy Gaudet, MD**
- **Robert Kerns, PhD**
- **Kurt Kroenke, MD**
- **Marianne Matthias, PhD**
- **Benjamin Morasco, PhD**
- **Hilary Mosher, MD**
- **Henri Roca, MD**
- **Friedhelm Sandbrink, MD**

Models of Care

- Stepped care
- Collaborative care
- Care management
- Integrated care/co-located care
- Telecare
- Technology-facilitated
- Peer-delivered/informal caregivers
- “Whole-health” care

Effectiveness of different models of care

- 10 articles included
- 5 diverse models of multi-modal chronic pain care
- Generally good-quality RCTs
- Mean duration of pain: 9 - 15 yrs
- Clinically significant improvement
 - Pain intensity and Pain-related function over 9 to 12 months
 - NNT range, 4.1 to 12.70
 - Four models showed improvements on other important outcomes: QOL, depression, anxiety, sleep
- VA Trials: ESCAPE, SEACAP, SCAMP, and SCOPE

QUERI

Evidence Brief on the Effectiveness of Models Used to Deliver Multi-Modal Care for Chronic Musculoskeletal Pain: Interim Summary of Findings

October 2016

Policy Recommendations: Stepped-care/collaborative care

- Invest in care coordinators/“coaches”
 - Especially for “high impact” Veterans
 - Leverage current telehealth resources
 - TIDES model for pain
- Reduce variability taking into account differences in facility leadership, staff, structure, and patients
- Build collection of PEG-3 into CPRS (clinical care) and include in data systems (CDW) to facilitate research with VA data
- Coordinate measurement standards used across VA and DOD

Priority Research Questions

- How do we optimize treatment effects?
 - Target the “right” patient
 - Should we be targeting “high impact” patients
- Are tailored interventions based on patient complexity more effective?
- Does sequencing vs. combining interventions improve treatment effects more?
- Which patients are most likely to benefit from these models of pain care based on key patient characteristics?
 - Pain duration
 - Opioid use at baseline
 - Concomitant medical and psychological comorbidity

SOTA Products



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- Policy recommendations
 - Provided to stakeholders as requested
- Non-pharmacological approaches to pain management research agenda
 - Developed by HSR&D, based on findings of work groups
- JGIM journal supplement
- Additional workgroup (chair: Kurt Kroenke) to develop consensus recommendations for measurement in prospective research

Questions?