

# Models of Integrated Pain Care



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HEALTHCARE SYSTEM**



# Disclosures



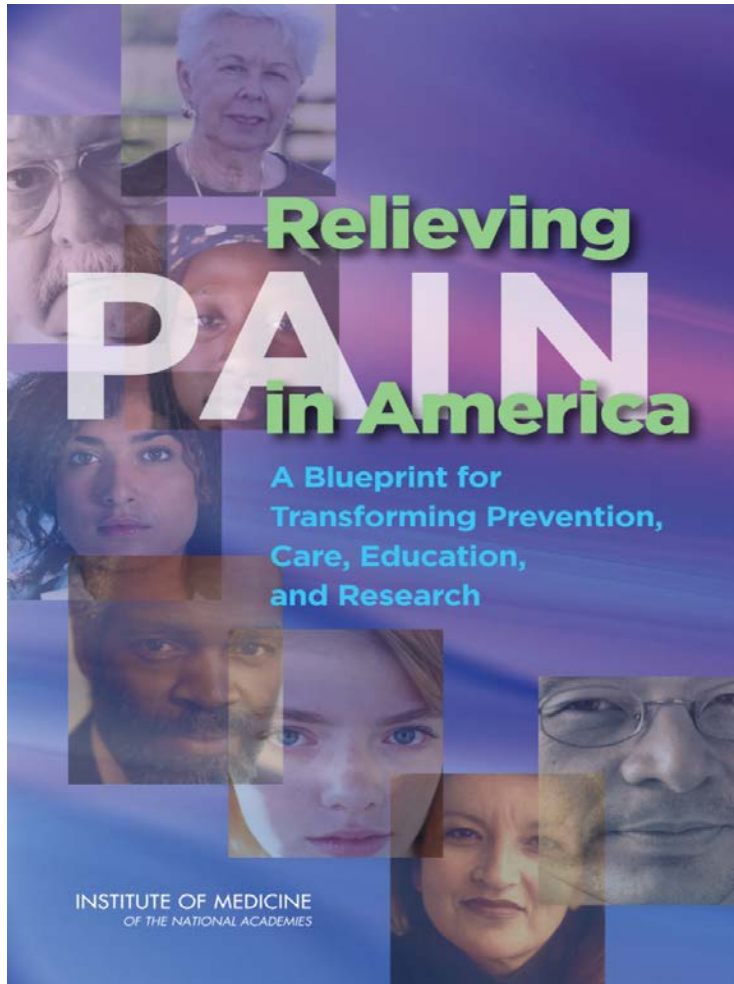
- **Research support**
  - Department of Veterans Affairs
  - National Institutes of Health
  - Patient-Centered Outcomes Research Institute
  - Consortium of Multiple Sclerosis Centers
  - Donaghue Medical Research Foundation
  - The Mayday Fund
- **Otherwise, nothing to disclose**
- **No discussion of unlabeled uses**
- **This presentation does not reflect official policy or positions of the Department of Veterans Affairs**

# Overview



- **Background and framework**
- **Definitions**
- **Evidence for integrated models of care**
  - State Of The Art Conference (SOTA) on “Non-pharmacological approaches for the management of chronic musculoskeletal pain”
- **Veterans Health Administration (VHA) examples**
  - VHA National Pain Management Strategy
    - ✦ Stepped Care Model of Pain Management
  - 2014 Health Analysis and Information Group (HAIG)
  - Project STEP
  - Quality Enhancement Research Initiative (QUERI) – Defining multimodal chronic pain care

# Findings and recommendations



Pain is a biopsychosocial condition that often requires **integrated, patient-centered, evidence-based, multimodal, and interdisciplinary care.**

Efforts should span the continuum from pain prevention, through efforts to mitigate the progression of acute pain to a chronic condition and the development of high-impact chronic pain, to pain at the end-of-life.

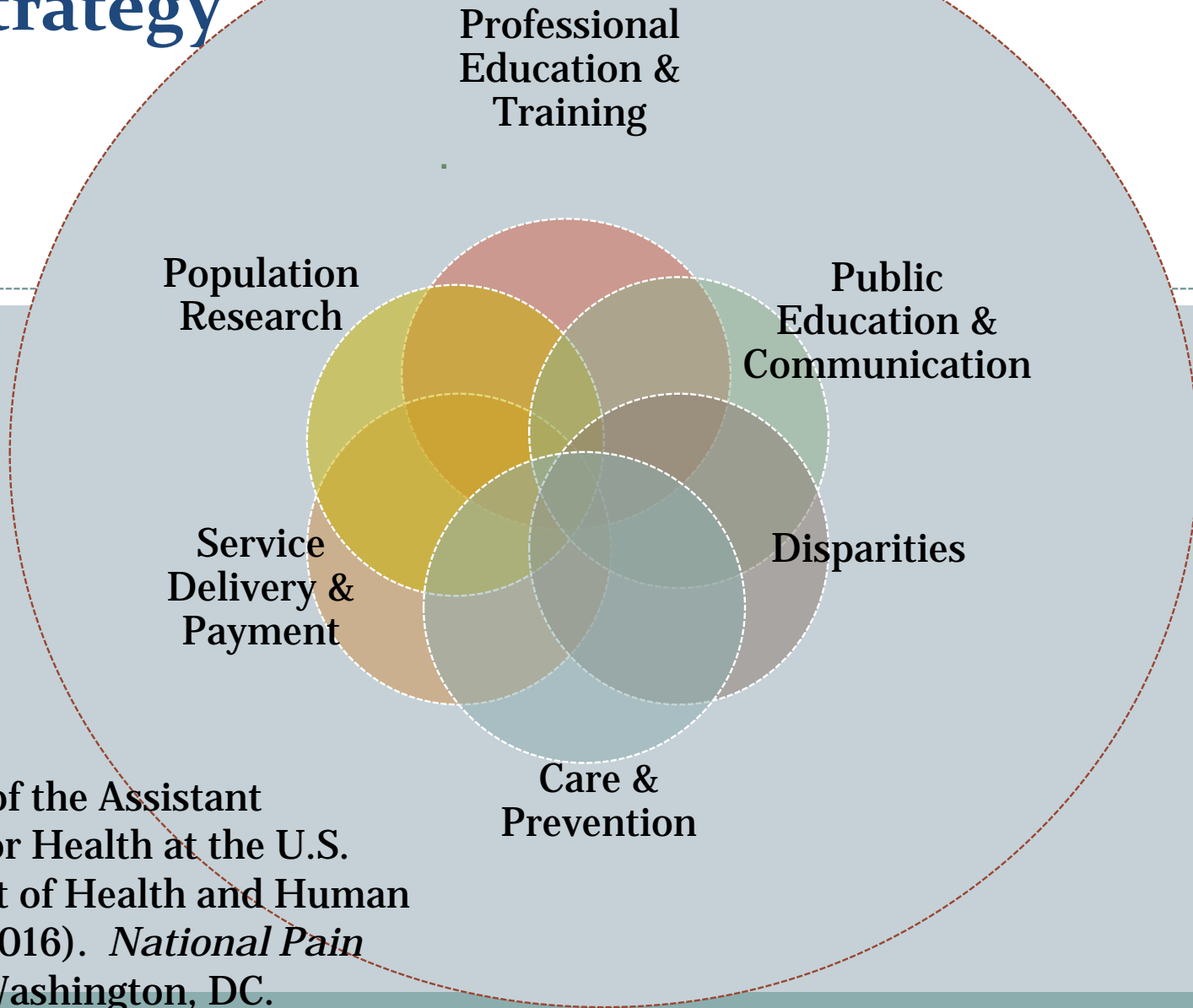
Efforts should address all ages of the life-span.

# More IOM findings and recommendations



- **Assessment methods**
- **Self-management approaches**
- **Patient-centered care**
- **De-implement ineffective and unsafe treatments**
- **Provider and health team member competencies**
- **Collaboration between primary care and specialty provider teams**
- **Barriers to access**
- **Differences and disparities**
- **Stigma**

# The National Pain Strategy



The Office of the Assistant Secretary for Health at the U.S. Department of Health and Human Services. (2016). *National Pain Strategy*. Washington, DC.

# Framework

## **Service Delivery & Payment**

*Public health  
entities have a  
role in pain care  
and prevention*

- Many challenges exist for access to quality pain care, which is often:
  - not based on best evidence.
  - not team based.
  - limited to pharmacological treatment offered by one primary care practitioner or to procedure-oriented and incentivized specialty care.
- More quality research is needed on the effectiveness of pain interventions, integrated care, models of care delivery, and reimbursement innovations.
- We need more effective methods to disseminate research findings and incentives to incorporate them into clinical practice.
- Current reimbursement practices complicate development of a population-based approach, which would use integrated, interdisciplinary, patient-centered teams.

# Integrated, patient-centered, evidence-based, multimodal, and interdisciplinary care

- From the NPS:

***Integrated care*** is the systematic coordination of medical, psychological and social aspects of health care and includes primary care, mental health care, and, when needed, specialist services.



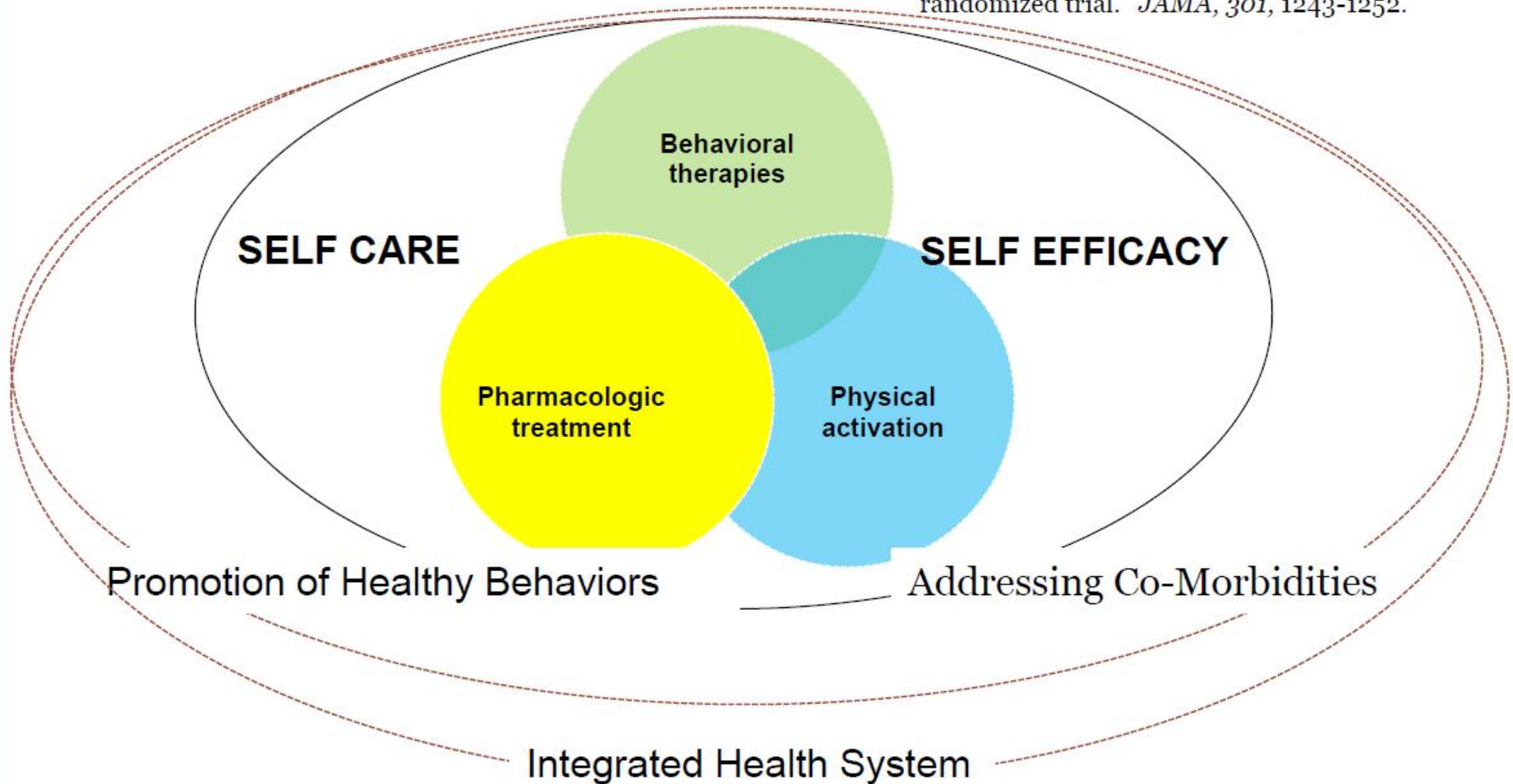
Integrated Pain Clinic team at the VA Connecticut Healthcare System



# Biopsychosocially-informed multimodal treatment plan



Adapted from Dobscha et al. (2009). Collaborative care for chronic pain in primary care: A cluster-randomized trial. *JAMA*, 301, 1243-1252.



# Goals of Pain Treatment



- Identify and treat/manage underlying disease/pathology
- Reduce the incidence and severity of pain
- Optimize individual's functioning/productivity
- Reduce suffering and emotional distress
- Improve overall quality of life
  
- Promote care coordination and consolidation

# Integrated = Coordinated $\neq$ Co – Located



- **Care can be distributed and virtual**
- **Integration/coordination can be facilitated through multiple strategies**
  - Care management
  - Integrated electronic health record
- **Patient-centered models**
  - Prepared and activated patients
  - Activated and informed patient can take responsibility for sharing information and coordinating care

# Multimodal ≠ Multidisciplinary



- **Primary care providers are well positioned to deliver multimodal care**
  - Comprehensive pain assessments and make reliable diagnoses
    - ✦ History and physical examinations
    - ✦ Assessment of functioning
    - ✦ Identification of personally relevant values, goals and preferences
  - Develop patient-centered plans of care
    - ✦ Shared medical decision making
    - ✦ Attention to multi-morbidities and health risk behaviors
    - ✦ Personal goal-setting
    - ✦ Time frame for reassessment
  - Enact the multimodal treatment
    - ✦ Education and reassurance
    - ✦ Promotion of adaptive pain self-management
    - ✦ Medication management
    - ✦ Injections
    - ✦ Acupuncture
  - Conduct pain reassessments

# Defining Integrated Multimodal Pain Care



- For patients, integrated multimodal pain care should:
  - Address their goals & values
  - Incorporate prior trials & contraindications
  - Engage available resources and build self-management skills
  - Be coordinated & aligned with management of comorbid conditions (i.e., diabetes, obesity, depression)
  - Be responsive over time
- For organizations and providers, multimodal pain care should be comparable after adjustment for important patient characteristics



STATE OF THE ART CONFERENCE

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

**VA HSR&D**

## **SOTA Goals**

- To synthesize existing evidence and evidence gaps related to non-pharmacological approaches for chronic musculoskeletal pain management
- To identify approaches ready for implementation
- To identify a research agenda that can lead to increasing use of evidence-based non-pharmacological approaches

## **Four Work Groups**

- Psychological/Behavioral approaches
- Exercise/Movement approaches
- Manual approaches
- Models of Care

# SOTA Conference Planning Committee



- Robert Kerns, PhD (Co-Chair)
- Erin Krebs, MD (Co-Chair)
- Kelli Allen, PhD
- Matthew Bair, MD
- William Becker, MD
- Lynn DeBar, PhD
- Stephen Ezeji-Okoye, MD
- Rollin Gallagher, MD, MPH
- Alicia Heapy, PhD
- Ben Kligler, MD, MPH
- Sarah Krein, PhD
- Anthony Lisi, DC
- Jennifer Murphy, PhD
- Dan Cherkin, PhD

# Models for pain care delivery



- No previously published systematic reviews
- Requested an evidence brief from the VA Evidence-Synthesis Program to include studies of...
  - Models using system-based mechanisms to increase uptake and organization of multimodal pain care
  - Adults with chronic musculoskeletal pain
  - Interventions integrated with primary care, excluding those conducted entirely within specialty settings



STATE OF THE ART CONFERENCE

**Non-pharmacological Approaches  
to Chronic Musculoskeletal  
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**VA HSR&D**



# VA Evidence Synthesis Program



**QUERI**

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

October 2016

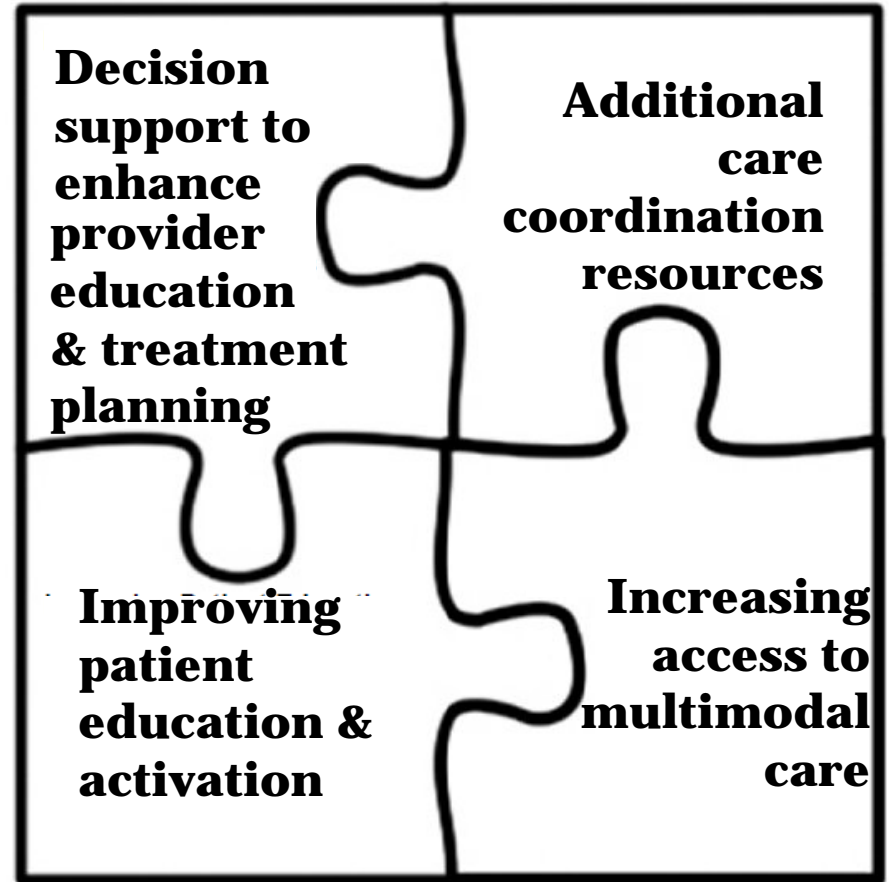
# Models of Care



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

# Models for pain care delivery

- 11 articles (10 studies) included
- Most were RCTS of fair-good quality (3 poor)
- Most had 12 month follow-up (range 6-18)
- Most used usual care control
- Baseline mean pain 5.1-7.7 on 10-point scale
- 9 diverse models of care delivery



# Models for pain care delivery



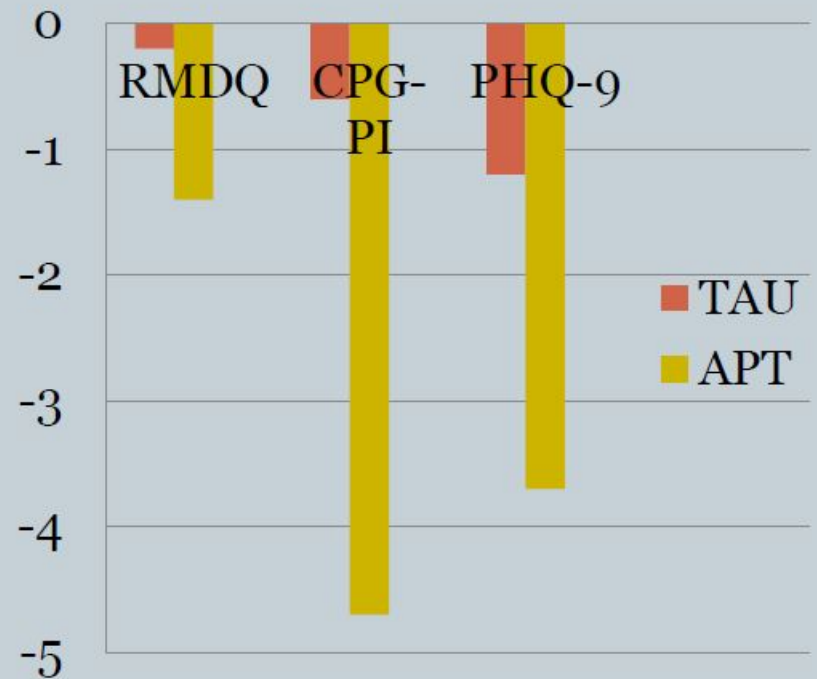
- **Best evidence for 5 models**
  - 4 good-quality VA trials combined decision support with case management: ESCAPE, SEACAP, SCAMP, and SCOPE
  - 1 fair-quality British trial combined risk stratification with risk-matched treatment pathways: STarT Back
  - Clinically relevant improvement in pain intensity & pain-related function over 9-12 months (NNT range 4.1-12.70)
- **Consider implementation of models across multiple VA facilities, with further evidence development**

# SEACAP

Dobscha et al. (2009). Collaborative care for chronic pain in primary care. *JAMA*, 301, 1242-1252.

- Assistance with Pain Treatment (APT) vs Treatment as Usual (TAU)
- 42 primary care clinicians/401 patients
- Measures:
  - Roland Morris Disability Questionnaire
  - Chronic Pain Grade – Pain Intensity
  - Patient Health Questionnaire - 9
- APT:
  - Clinician education
  - Pt assessment, education & activation
  - Symptom monitoring
  - Feedback and recommendations
  - Facilitation of specialty care

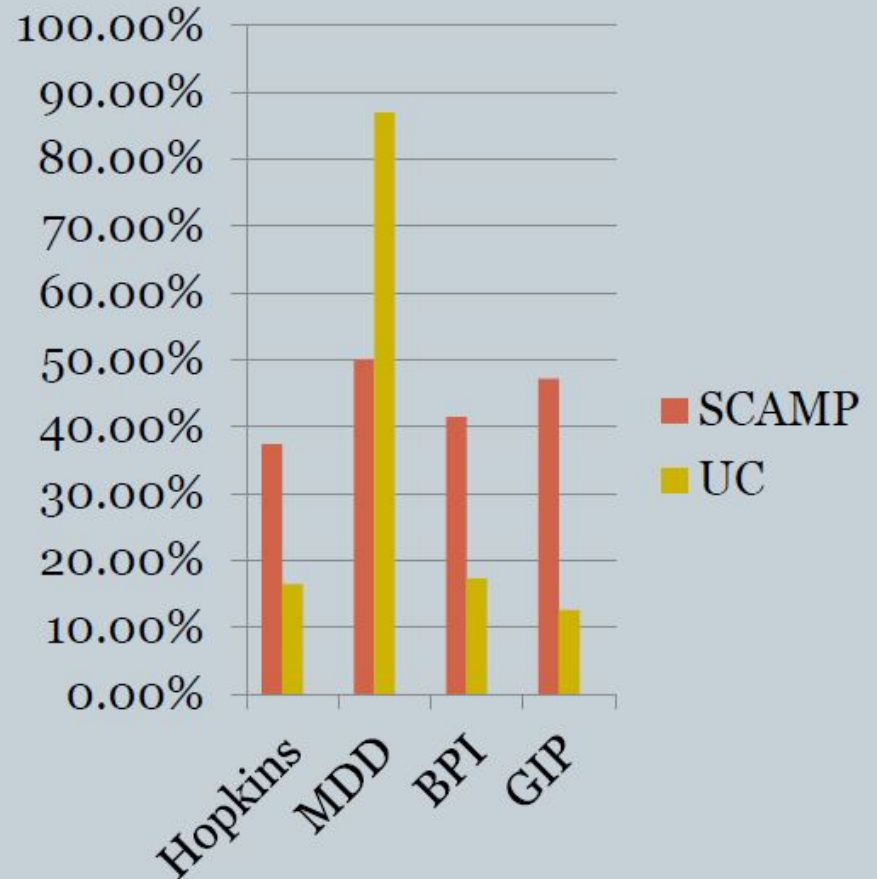
## Change from baseline to 12 mo f.u.



# SCAMP

Kroenke et al. (2009). Optimized antidepressant therapy and pain self-management in primary care patients with depression and musculoskeletal pain: A randomized controlled trial. *JAMA*, 301, 2099-2110.

- **Stepped Care for Affective Disorders and Musculoskeletal Pain (SCAMP) vs. Usual care (UC)**
- **SCAMP**
  - 12 wks optimized antidepressant therapy
  - 6 sessions of pain self-management
  - 6 mos continuation
- **250 patients**
- **Measures**
  - Hopkins Symptom Checklist
  - Brief Pain Inventory
  - Global Improvement in Pain



# Additional Key Question



**What models have addressed pain along with common comorbid conditions, such as mental health and substance use disorders?**

- Collaborative care for pain and depression (Kroenke)
- ACT + education workshop for depression and migraine pilot (Dindo)
- Integrated psychotherapy pilot for chronic pain and PTSD (Otis)
- CBT + ACT principles for pain in SUD treatment setting (Ilgen)

# Additional Key Question




**What are the barriers to expanding clinical use of evidence-based models (patient/provider/facility/system)?**

- **“Silos” — prevent effective communication across teams**
- **Lack of access**
- **Onerous referral requirements**
- **Lack of “pain champion”**
- **Lack of leadership support; needed at all levels**
- **Entrenched beliefs about effectiveness of certain treatments**



# Gap between evidence and practice



- Growing evidence to support integrated, coordinated, multimodal and interdisciplinary models of pain care
- 
- Significant organizational/systems, provider and patient-level barriers to timely and equitable access to these approaches
- 
- Veteran and military health systems are ideally positioned to address this gap

# Pain Management is a priority for VHA



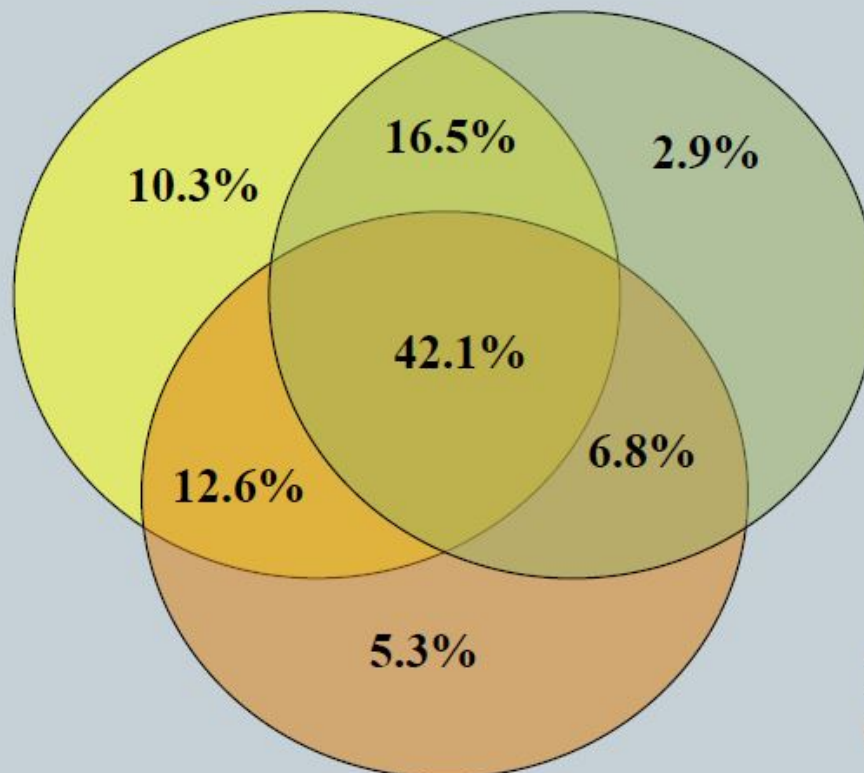
- **Estimates suggest that 50-75% of US military Veterans experience persistent pain** (Kerns et al., 2003; Haskell et al., 2006; Nahin, 2017)
- **Veterans with pain, compared to non-Veterans with pain, report more severe pain** (Nahin, 2017)
- **The proportion of Veterans in care in VHA with painful musculoskeletal conditions is steadily increasing over time** (Goulet et al., 2016)
- **Pain is among the most costly disorders treated in VHA settings; total estimated cost attributable to Veterans with low back pain was \$2.2 billion in FY99** (Yu et al., 2003)



# Co-Prevalence of Chronic Pain, PTSD and TBI

**Chronic Pain**  
N=277  
81.5%

**PTSD**  
N=232  
68.2%



N=340

**TBI**  
N=227  
66.8%

Lew et al., (2009). Prevalence of Chronic Pain, Posttraumatic Stress Disorder and Post-concussive Symptoms in OEF/OIF Veterans: The Polytrauma Clinical Triad. *Journal of Rehabilitation Research and Development*, 46, 697-702.

# VA Stepped Pain Care

RISK

Comorbidities

Treatment Refractory

Complexity

## Tertiary, Interdisciplinary Pain Centers

Advanced pain medicine diagnostics & interventions; CARF accredited pain rehabilitation

STEP 4

## Secondary Consultation

Multidisciplinary Pain Medicine Specialty Teams; Rehabilitation Medicine; Behavioral Pain Management; Mental Health/SUD Programs

STEP 3

## Patient Aligned Care Team (PACT) in Primary Care

Routine screening for presence & severity of pain; Assessment and management of common pain conditions and important comorbidities; Integrated pain teams, including teams addressing high risk opioid therapy; Support from Primary Care – Mental Health Integration teams

STEP 2

## Pain Self-Management

Nutrition/weight management, smoking cessation, exercise/conditioning, & sufficient sleep; engagement in meaningful activities; family & social support; safe environment/surroundings

STEP 1

# 2014 Healthcare Analysis and Information Group (HAIG) Pain Management Survey



- Comprehensive survey regarding implementation of VA policy regarding pain management, including implementation of the Stepped Care Model of Pain Management
- Survey conducted in November 2014
- 100% facility response (n=141)

**VA**  
HEALTH  
CARE

Defining  
**EXCELLENCE**  
in the 21st Century



# To what extent has your Facility/HCS implemented Step One of pain care?



This question refers to the following specific components:

- ✦ *Advanced training in the biopsychosocial model of pain management for all primary care providers,*
- ✦ *Primary care-based behavioral health providers, and PACT team members;*
- ✦ *Full implementation of integrated behavioral health in primary care;*
- ✦ *Dedicated resources (including personnel) to opioid monitoring and safety initiatives in primary care;*
- ✦ *Ongoing pain education/self-management programs available to all patients.*

Full implementation, all components are fully implemented:	31%
Partial implementation, some components well established, others not yet fully implemented:	38%
Early implementation in progress, most components not yet fully implemented:	23%
In planning stage for implementation:	7%
Not at all:	1%

# Top five most frequently available pain management services in Primary Care



- **Medication management:** 91%
- **Patient Education Programs:** 65%
- **Psychological Consultation/Assessment:** 49%
- **Cognitive-Behavioral Therapy:** 30%
- **Supportive Psychotherapy:** 30%

# To what extent has your Facility/HCS implemented Step Two of pain care?



This question refers to the following components:

- *Timely availability of the full range of specialists including pain medicine, rehabilitation medicine, pain psychology, and addiction psychiatry;*
- *Availability of short-term co-management by pain medicine specialty teams and addictionology/mental health for complex or high-risk patients;*
- *Inpatient acute pain and palliative care consultation.*

Full implementation, all components are fully implemented:	28%
Partial implementation, some components well established, others not yet fully implemented:	40%
Early implementation in progress, most components not yet fully implemented:	14%
In planning stage for implementation:	10%
Not at all :	8%



# Specialty and Tertiary Care



## Specialty Pain Clinics (from HAIG survey)

- Multidisciplinary Pain Centers: 17%
- Multidisciplinary Pain Clinics: 55%
- Pain Clinics: 28%

## Specialty Pain Clinics (from Workforce and Workload Report):

- All VISNs and 124/141 (88% have a pain clinic)
- Capacity continues to grow by approximately 8% each year

Complementary and Integrative Health Approaches (from HAIG survey): 88%

## Commission for the Accreditation of Rehabilitation Facilities (CARF):

- All 18 VISNs have at least one CARF accredited pain rehabilitation program

# Project STEP

## Program for Research Leadership

Donaghue Foundation  The Mayday Fund

- Enacted a formative evaluation and implementation study of the VA Stepped Care Model of Pain Management (SCM-PM)
- Employed a partnered approach to develop and deploy an integrated team to improve pain care
- Examined changes in group and organizational processes and evaluation of pain management and organizational outcomes as the SCM-PM was adopted.
- Mixed qualitative and quantitative methods



# Data Sources



- Qualitative data from primary care and specialty providers and nurses regarding barriers and facilitators related to pain management
- Indicators of Pain Care Quality assessed by manual progress note data extraction (e.g., pain assessment, treatment, reassessment, patient education)
- Automated clinical and administrative data extraction (e.g., multidisciplinary pain management, effective use of consultants, guideline concordant care)
- Two cohorts:
  - Pain Cohort (moderate to severe pain)
  - Opioid Cohort (receipt of long term opioid therapy, i.e., >90 days)

# Qualitative Data (PCPs and Nurses)

Lincoln, L.E., et al. (2013). *Journal of Palliative Care and Medicine*, S3, 001. Pellico, L.H., et al. (2014). *The Open Nursing Journal*, 8, 25-33.



## Barriers/Negative Aspects

- **Inadequate training**
- **Organizational impediments**
- **Clinical quandaries/frustrations**
- **Skepticism among PCPs**
- **Issues related to shared care among PCPs and specialists**
- **Antagonistic aspects of provider-patient interactions**
- **Time**

## Facilitators/Positive Aspects

- **Intellectual satisfaction of solving difficult diagnostic and management problems**
- **Ability to develop keener communication skills**
- **Rewards of healing and building therapeutic alliances with patients**
- **Multidisciplinary care**
- \* **Nurses wanted to work at higher end of their competencies and generally more involvement**

# Integrated Primary Pain Care

Dorflinger, L.M. et al (2014). *Pain Medicine*, 15, 2046-2054.



## Integrated Pain Clinic

- **Core team:**
  - Clinical Health Psychologist
  - Pain Medicine Specialist
  - Physiatrist
  - Physical Therapist
- **Comprehensive interdisciplinary pain assessment**
- **Integrated pain management plan**
- **Feedback and recommendations to primary care team**

## Opioid Reassessment Clinic

- **Core team:**
  - Addiction Psychiatrist
  - Internist with addiction specialty
  - Mental Health Nurse Practitioner
  - Clinical Health Psychologist
- **Interdisciplinary opioid management for high risk patients**
- **Increased intensity and frequency of monitoring**
- **Medication Assisted Treatment, as appropriate**
- **Co-management with primary care up to six months**

# Project STEP

## EHR data – Opioid Cohort

Pain, Opioid Safety, Pain Support Services and Alternative Prescription Outcomes by Project Step Year.*					
	Project Step Year				P value
	2008-09	2009-10	2010-11	2011-12	
<b>Maximum Pain Severity Rating, mean (SD)</b>	6.50 (2.78)	6.54 (2.79)	6.39 (2.87)	6.65 (2.77)	.38
<b>Opioid Safety</b>					
<b>Opioid Agreement, % (n)</b>	27.9% <sup>a</sup> (154)	71.5% <sup>b</sup> (426)	76.5% <sup>c</sup> (442)	81.1% <sup>c</sup> (434)	<.0001
<b>Urine Toxicology Test, % (n)</b>	52.5% <sup>a</sup> (290)	82.4% <sup>b</sup> (491)	78.9% <sup>b</sup> (456)	79.6% <sup>b</sup> (426)	<.0001
<b>Pain Support Services</b>					
<b>Mental Health Referral, % (n)</b>	9.4% (52)	8.6% (51)	8.1% (47)	8.2% (44)	.77
<b>Physical Therapy Referral, % (n)</b>	21.9% <sup>a</sup> (121)	24.5% (146)	26.1% (151)	29.7% <sup>b</sup> (159)	.02
<b>Pain Management Referral, % (n)</b>	13.6% (75)	16.5% <sup>a</sup> (97)	11.7% <sup>b</sup> (66)	11.5% <sup>b</sup> (61)	.04
<b>Chiropractic Referral, % (n)</b>	1.8% <sup>a</sup> (10)	2.5% (15)	2.1% <sup>a</sup> (12)	5.2% <sup>b</sup> (28)	.02
<b>Alternative Prescriptions</b>					
<b>Topical Analgesic, % (n)</b>	3.3% <sup>a</sup> (17)	4.9% (29)	6.9% <sup>b</sup> (41)	5.4% (29)	.02
<b>NSAID, % (n)</b>	20.5% (113)	23.3% (139)	24.4% (141)	21.9% (117)	.10
<b>Antidepressant/neuro, % (n)</b>	17.0% (94)	17.8% (106)	18.0% (104)	20.9% (112)	.45
<b>Anticonvulsant, % (n)</b>	27.4% (151)	29.4% (175)	28.0% (162)	31.4% (168)	.13

Dorflinger, L., et al. 2014). *Journal of General Internal Medicine, 29, S870-S876.*



Triple Aim QUERI  
Optimizing Health Outcomes

- Objective: Develop measures of ***multimodal chronic pain care*** quality and identify nationally high- and low-performing sites for multimodal chronic pain care
- Deliverables:
  - Summary of multimodal pain care metrics
  - Maps of variation in multimodal chronic pain care
  - Summaries of multimodal chronic pain care at the VISN and site levels

# Study team



- **Denver team**

- Michael Ho, MD, PhD
- Joe Frank, MD, MPH
- Evan Carey, BS
- Charlotte Nolan, MPA

- **National Co-I's**

- Bob Kerns, PhD (West Haven)
- Ali Mchaourab, MD (Cleveland)

- **Operational partners**

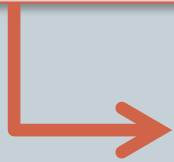
- VHA National Pain Management Program
- VHA Office of Specialty Care
- Denver Veteran Research Engagement Board



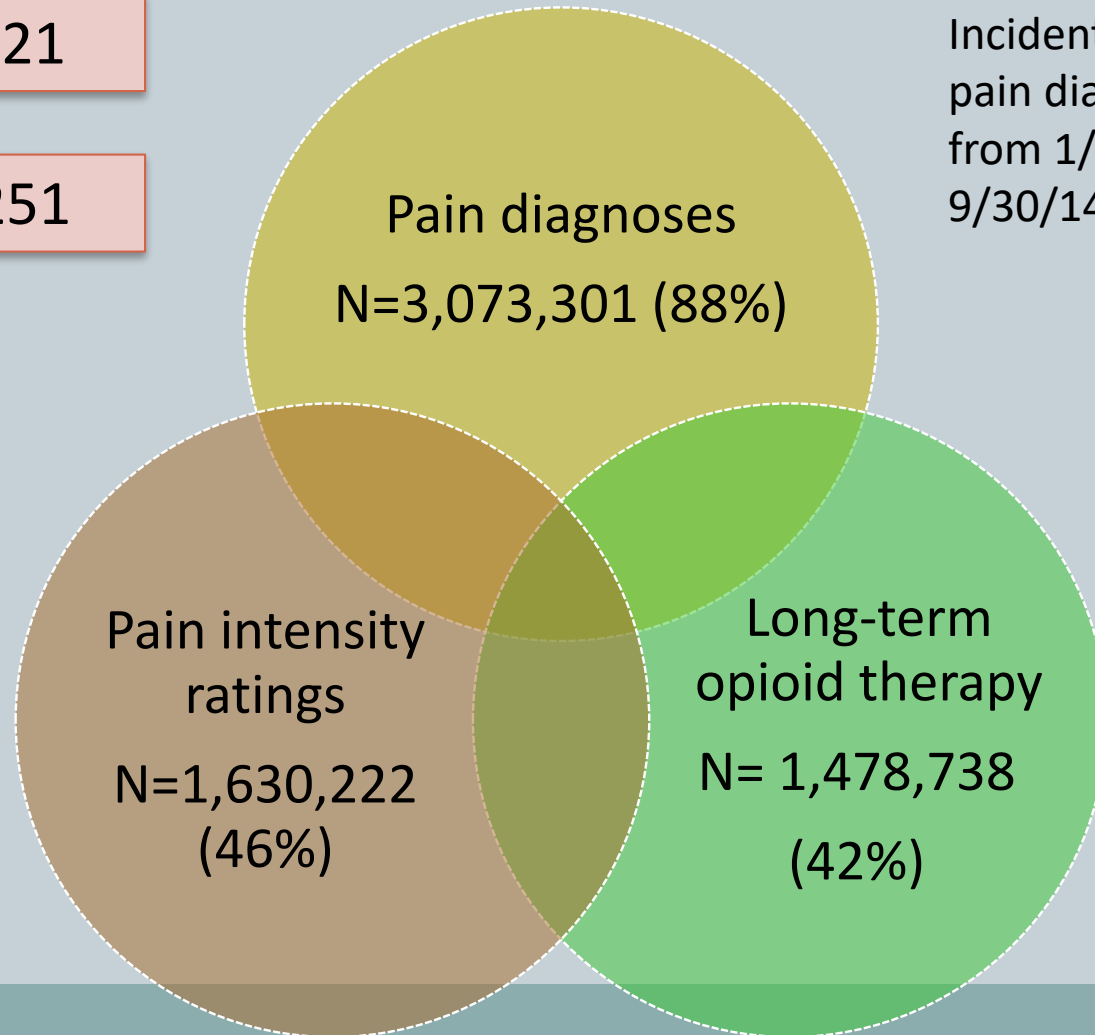
# Results – Sample characteristics

Total = 3,512,321

Incident = 1,641,251



Incident chronic  
pain diagnosis  
from 1/1/2010-  
9/30/14



# Methods – Outcome definitions



- **Components of multimodal pain treatment<sup>1</sup>**

1. Psychosocial treatments
2. Physical Therapy/Occupational Therapy
3. Pain Clinic
4. Physical Medicine & Rehabilitation clinic
5. Other rehabilitation medicine
6. Complementary & integrative medicine
7. Anticonvulsant medications
8. Non-steroidal anti-inflammatory drugs
9. Topical medications
10. Antidepressant medications (SNRI, TCA)
11. Opioid medications

Non-opioid medications

- **Multimodal pain treatment**

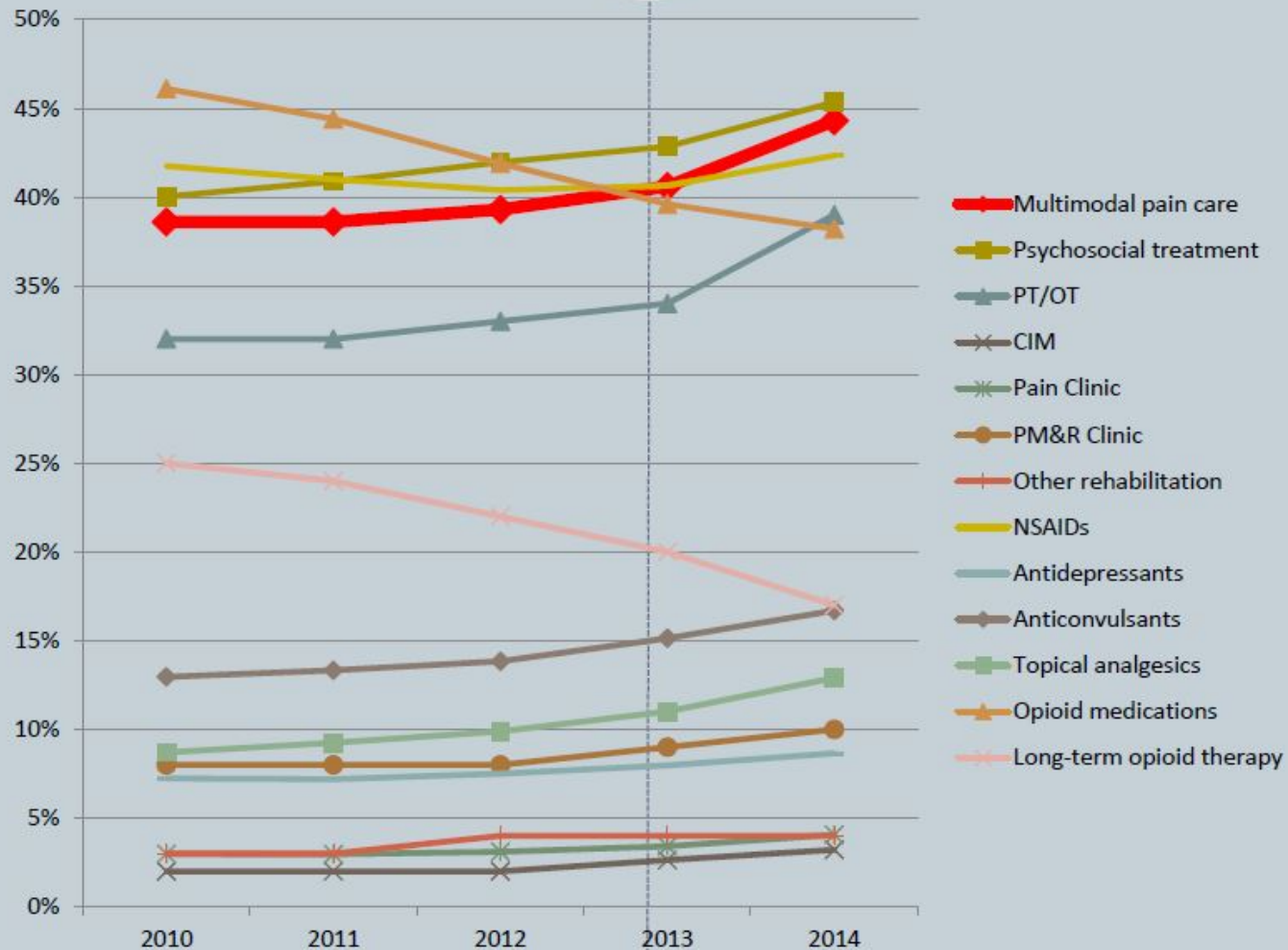
- $\geq 1$  non-opioid medications AND  $\geq 1$  non-pharmacologic modalities

# Results – Trends in multimodal care



- All modalities increased during study period *except* opioid medications
- Baseline use and magnitude of increase varied across modalities
- Multimodal pain care increased from 38.7% in 2010 to 44.3% in 2014
  - 5.6% absolute increase
  - 14.5% relative increase

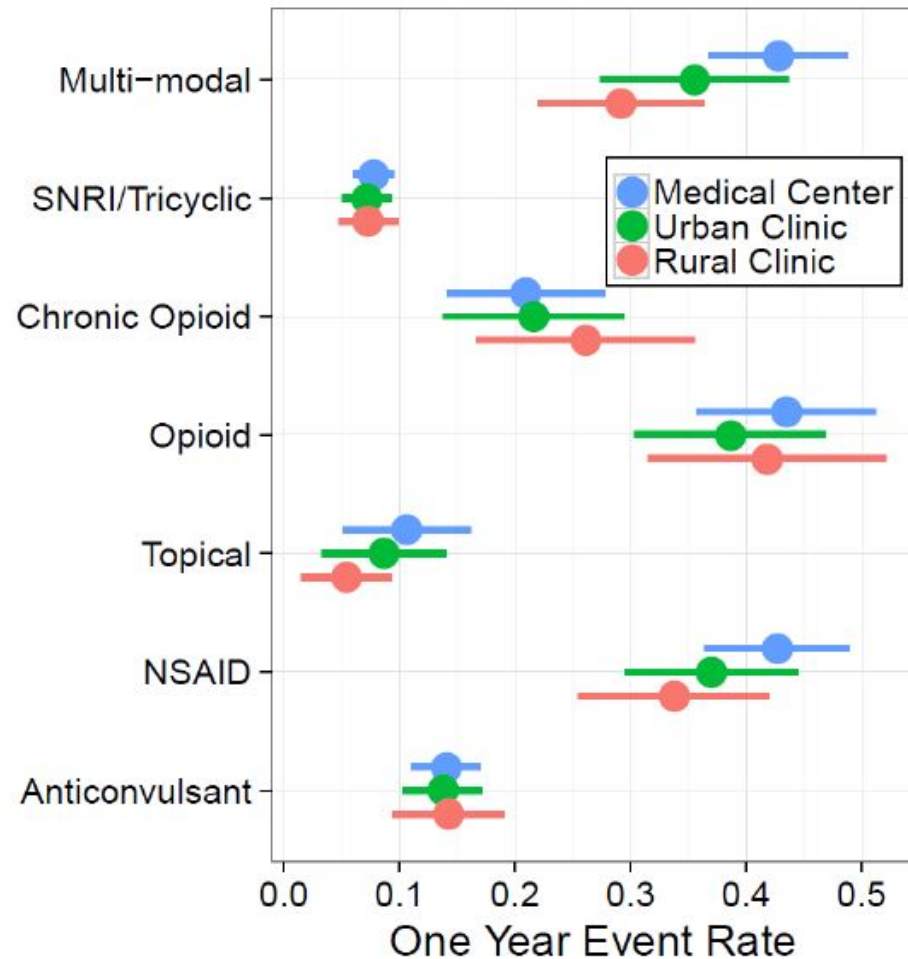
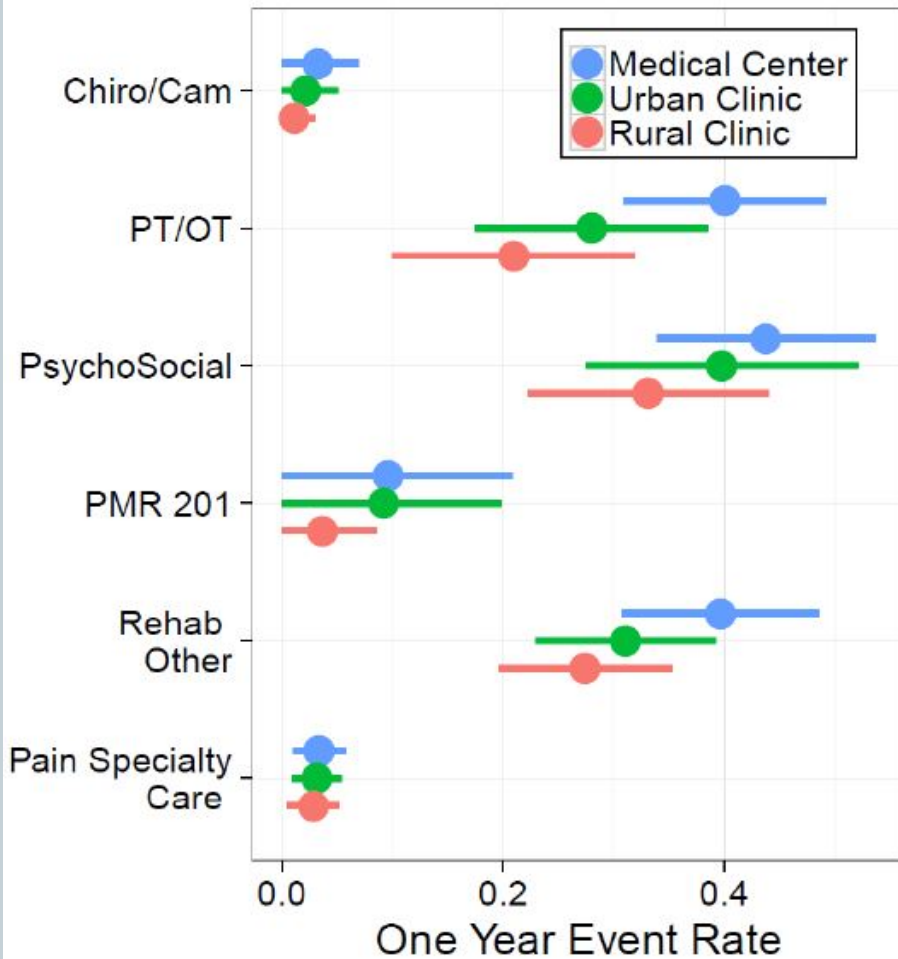
# Results – Trends in multimodal care



# Results – Trends in multimodal care



# Results – Variation in multimodal care



# Summary



- Pain is a biopsychosocial condition that often requires **integrated, patient-centered, evidence-based, multimodal, and interdisciplinary care.**
- Evidence supports integrated treatment incorporating pharmacologic, psychological/ behavioral, exercise/movement, manual (and other) modalities.
- Key components of effective integrated approaches are being identified
- There is a need to address organizational, provider and patient barriers to full implementation of this model
- Integrated healthcare systems such as the VHA, functioning as learning healthcare systems, can serve key roles in percolating and studying innovations in pain care

Thanks!  
Robert.kerns@yale.edu



**Jonah Robert Kerns Schwartz**  
Born April 28, 2017