

# Quality Improvement and Implementation Support to Improve use of Guideline Recommended Practices for Chronic Opioid Therapy

Jodie A. Trafton, Ph.D.

Director, Program Evaluation and Resource  
Center, Mental Health Operations

Principal Investigator, SUD QUERI & Ci2i

# Making Clinical Practice Guidelines (CPG) Codeable

- Clinical practice guidelines include written recommendations about how to deliver clinical care
- Not written in terms of standard data elements in medical administrative records or electronic medical record fields
- Here, I will discuss
  - (1) methods used to convert the Clinical Practice Guideline for Opioid Therapy for Chronic pain into codeable elements, and
  - (2) ways in which these definitions have been worked into implementation, decision support and quality improvement tools
  - (3) examples of ways HSR&D funded projects have been incorporated into operations and policy initiatives

# Uses of CPG definitions

- **Clinical decision support systems**
  - Bring personalized guidelines to clinicians reviewing specific patient cases
- **Quality Improvement metrics**
  - Identify, prioritize, address, and evaluate system issues that limit use of guideline recommendations
- **Electronic Medical Record (EMR) specifications**
  - Design EMRs to systematically collect and display information needed for high quality care
- **Panel Management tools**
  - Provide tools for cohort-based management and risk mitigation
  - Target and evaluate clinical education efforts
- **Research and Validation**
  - Identify process/outcome relationships, test intervention strategies, define high-risk populations

# Strategies for Operationalizing CPGs

General strategy combined:

- 1) Analysis of guideline to identify:
  - 1) Key recommendations
  - 2) Concepts that require definitions
- 2) Review of available EMR and administrative data
  - 1) Examine and filter universe of used data codes
  - 2) Annual code updates
- 3) Guidance and definition review from Guideline authors and clinical experts
  - 1) Discussion to refine guideline concepts
  - 2) Iterative review of putative definitions by expert panel
  - 3) Discussion of points of contention
- 4) Field review and feedback by target audience
  - 1) Testing of definitions by comparative chart review by clinicians
  - 2) User validation of patient cases
- 5) Assess associations with expected outcomes

# Clinical Decision Support System

- Intended use
  - Case review and treatment planning for patients with chronic pain considered for opioid therapy
  - Provides reminder and summarized and personalized information to facilitate and guide good care decisions

# Clinical Decision Support System: ATHENA-Opioid Therapy

- Development, usability, and pilot testing funded by SUD QUERI. Updates and expanded pilots funded by National Center for Patient Safety
- Created definitions for filtering EMR data for clinical use
- Created an algorithm for generating individualized recommendations based on a patient's existing EMR data
- Created a system for providing clinicians with summarized information and recommendations to reduce risk and increase effectiveness of opioid therapy around the time of a clinic visit

# ATHENA-OT Features

- Point of care patient-specific guideline –based recommendations and warnings for PC clinicians
- Gathers and provides information commonly needed for opioid prescribing like demographics, diagnosis, prescriptions, labs and adverse events.
- Standardized pain assessment with write-back to medical record
- Checklist of good clinical practices
- Resources include
  - Information about local, non-opioid treatment options (e.g., MH treatment, rehab therapies)
  - Drug conversion calculator
  - Suggested responses to aberrant medication use behaviors
  - Patient education materials

Disclaimer: Complete clinical information may not be available to the Athena Opioid Therapy application herein displayed. Please use all information you have about the patient together with your clinical judgment to decide on the best therapy for this patient's chronic pain.

Recommendations for Chronic Pain Management

**Cautions**  
 Age >=65 years  
 Possible Cancer  
 Sleep Apnea

Cautions

Drug	Daily Dose	Start	End
hydrocodone/ac...	20.0	09/27/2012	09/30/2012
hydrocodone/ac...	2000.0	09/27/2012	09/30/2012

Patient data

- Treatment Checklist**
- Conducted Pain Assessment
  - Ordered a Urine Drug Screen
  - Educated Patient to Call Ahead for Refills (7-10 days Before Running Out)
  - Had Patient sign Opioid Pain Care Agreement(OPCA)
  - Documented Pain Assessment, UDS, Patient Education, Opioid Pain Care Agreement(OPCA)

Treatment Checklist

**Tools as drop down menus**

Opioid Therapy Options

- OPTION: start morphine long acting
- OPTION: start hydrocodone

Alternate Therapy Options

Inform patient about available Alternate Therapy options. Refer to "Alternate Therapy" page under "Education and Agreements" above.

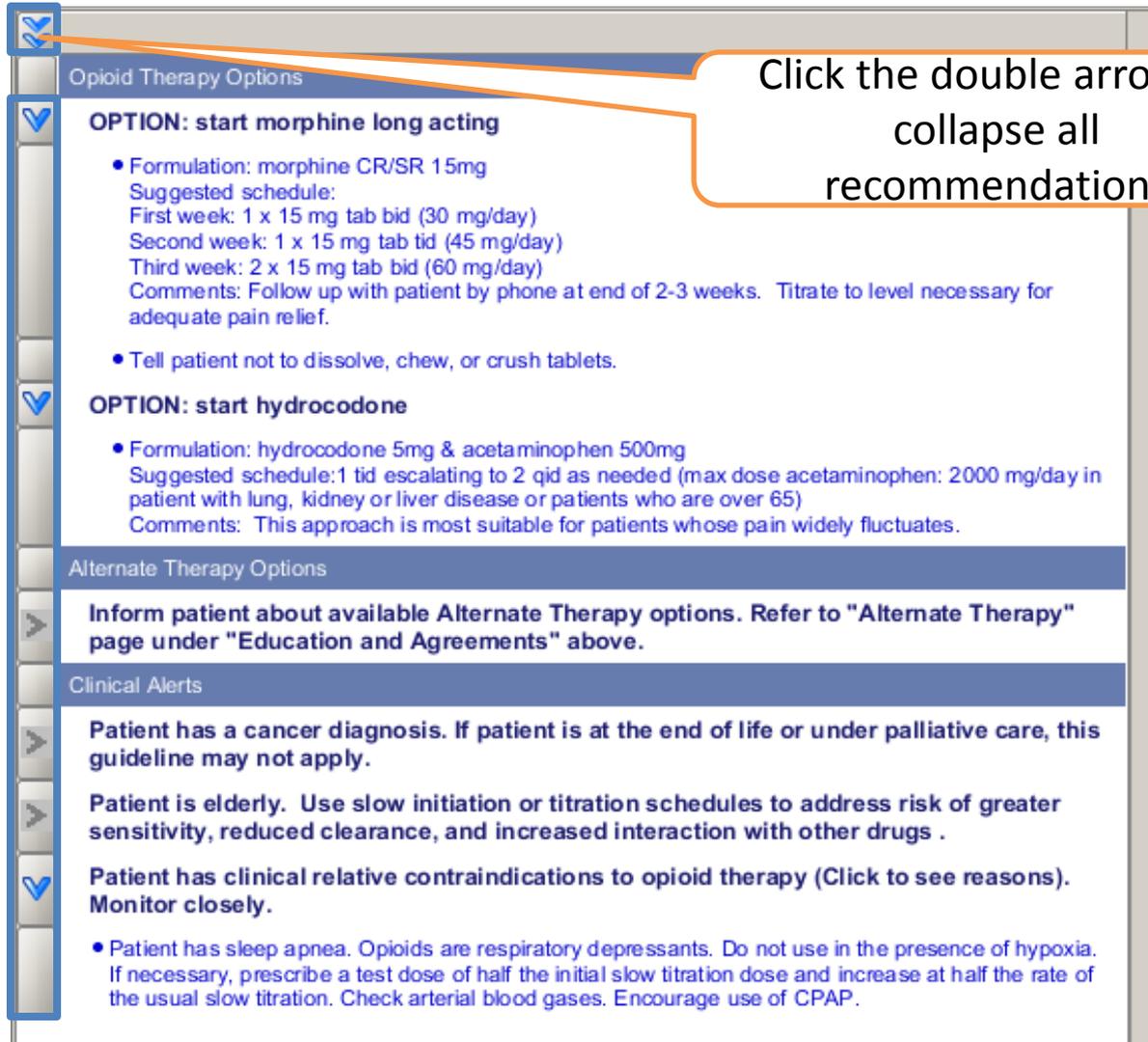
Clinical Alerts

- Patient has a cancer diagnosis. If patient is at the end of life or under palliative care, this guideline may not apply.
- Patient is elderly. Use slow initiation or titration schedules to address risk of greater sensitivity, reduced clearance, and increased interaction with other drugs .
- Patient has clinical relative contraindications to opioid therapy (Click to see reasons). Monitor closely.

Patient specific guideline- based recommendations for opioid therapy, alerts if patient is high risk for misuse and more!

# Summary Screen

# Patient Recommendations



The screenshot shows a software interface for patient recommendations. On the left, a vertical sidebar contains several expandable sections, each with a double arrow icon. The top section, 'Opioid Therapy Options', is expanded, showing two options: 'start morphine long acting' and 'start hydrocodone'. Below this is 'Alternate Therapy Options' with a text instruction, and 'Clinical Alerts' with three bullet points. A callout box with an orange border points to the top double arrow icon, containing the text: 'Click the double arrow to collapse all recommendations'.

**Opioid Therapy Options**

**OPTION: start morphine long acting**

- Formulation: morphine CR/SR 15mg  
Suggested schedule:  
First week: 1 x 15 mg tab bid (30 mg/day)  
Second week: 1 x 15 mg tab tid (45 mg/day)  
Third week: 2 x 15 mg tab bid (60 mg/day)  
Comments: Follow up with patient by phone at end of 2-3 weeks. Titrate to level necessary for adequate pain relief.
- Tell patient not to dissolve, chew, or crush tablets.

**OPTION: start hydrocodone**

- Formulation: hydrocodone 5mg & acetaminophen 500mg  
Suggested schedule: 1 tid escalating to 2 qid as needed (max dose acetaminophen: 2000 mg/day in patient with lung, kidney or liver disease or patients who are over 65)  
Comments: This approach is most suitable for patients whose pain widely fluctuates.

**Alternate Therapy Options**

**Inform patient about available Alternate Therapy options. Refer to "Alternate Therapy" page under "Education and Agreements" above.**

**Clinical Alerts**

- Patient has a cancer diagnosis. If patient is at the end of life or under palliative care, this guideline may not apply.
- Patient is elderly. Use slow initiation or titration schedules to address risk of greater sensitivity, reduced clearance, and increased interaction with other drugs .
- Patient has clinical relative contraindications to opioid therapy (Click to see reasons). Monitor closely.
- Patient has sleep apnea. Opioids are respiratory depressants. Do not use in the presence of hypoxia. If necessary, prescribe a test dose of half the initial slow titration dose and increase at half the rate of the usual slow titration. Check arterial blood gases. Encourage use of CPAP.

Click the double arrow to collapse all recommendations

# Quality Improvement Metrics

- Goal: To identify system-level problems with guideline implementation
  - Focus on issues such as global access to treatments, coordination of care, use of standard protocols
- Get use of good opioid prescribing practices prioritized
  - Provide supervisory or administrative assistance and pressure to motivate clinicians to take the time and effort to use good prescribing practices
- Guide development of quality improvement initiatives and tools to monitor impact of QI efforts over time
  - Identify local weaknesses
  - Identify best practice sites
  - Monitor progress over time
- Encourage
  - Providers to attend to pain and opioid management
  - Administrators to ensure resources and training are available to enable providers to follow guidelines

# Administrative data based metrics to assess adherence to clinical guideline recommended practice

- Metrics development and validation funded by SUD QUERI. Dashboard and maintenance funded by National Center for Patient Safety and Office of Mental Health Operations
- Created measures to look at adherence to key CPG recommendations at the facility level
- Identified practices in key domains that could be identified in “billing” data
- Developed measures of practices or outcomes in these domains
- Creating a data report (updated quarterly) to allow facilities
  - to track their performance over time
  - allow comparison to performance at other facilities and national performance

# Opioid prescribing practices metrics

- Propensity to prescribe
- Side effects management
- Serious adverse effects
- Dangerous drug interactions
- Minimizing misuse risk
- Appropriate follow-up
- Avoidance of sole reliance on opioids
  - Psychosocial treatments
  - Other pharmacotherapies
  - Rehabilitation medicine
  - Complementary and alternative medicine treatments
- Absolutely contra-indicated opioid prescriptions
- Medication management/pharmacy reconciliation
- Appropriate lab tests

# Opioid prescribing practices examined in 4 subgroups

- Hierarchical subgroups based generally on perceived risk of various opioid types
  - 1) Long-acting opioids (e.g. methadone, fentanyl patch, oxycontin)
  - 2) Chronic short-acting opioids (Chronic is defined as greater than 90 days supply in a FY)
  - 3) Acute short-acting opioids
  - 4) Tramadol only
- Allows one to examine practices in areas where there is not clinical consensus regarding whether the practice should be standard for acute, or non-traditional opioids.

# Dashboard

- Intended use
  - Identification of problem areas
  - Design and evaluation of local quality improvement efforts
  - Identify model programs
  - Share best practices

Available at:

<https://securereports3.vssc.med.va.gov/Reports/Pages/Report.aspx?ItemPath=%2fMentalHealth%2fMHOpioid%2fOpioidMatrixReport>


**Department of Veterans Affairs Veterans Health Administration**  
**National Center for Patient Safety &**  
**Office of Mental Health Operations 10NC5**  
**OPIOID THERAPY GUIDELINE ADHERENCE REPORT**


[Data Definitions](#)  
[Feedback](#)

Click on (+) signs to expand content and view data				FY2012			FY2013		
				Qtr4 (4 Qtrs ending in Qtr 4)			Qtr4 (4 Qtrs ending in Qtr 4)		
CATEGORY	MEASURE		NUMERATOR	DENOMINATOR	SCORE	NUMERATOR	DENOMINATOR	SCORE	
Acetaminophen over-prescription	<input checked="" type="checkbox"/> Acetaminophen over-prescription (3g)								
	<input checked="" type="checkbox"/> Acetaminophen over-prescription (4g)								
Adjunctive pharmacotherapy	<input checked="" type="checkbox"/> Adjunctive Pharmacotherapy								
	<input checked="" type="checkbox"/> Adjunctive Pharmacotherapy - Non-opioid analgesics								
	<input checked="" type="checkbox"/> Adjunctive Pharmacotherapy - SNRIs								
	<input checked="" type="checkbox"/> Adjunctive Pharmacotherapy - Anticonvulsants								
	<input checked="" type="checkbox"/> Adjunctive Pharmacotherapy - TCAs								
	<input checked="" type="checkbox"/> Adjunctive Pharmacotherapy - Topical								
Bowel Regimen	<input checked="" type="checkbox"/> Bowel Regimen								
CAM treatments for pain	<input checked="" type="checkbox"/> CAM Treatments for Pain								
Drug Screens	<input type="checkbox"/> UDS Any (all patients receive UDS)	All outpatient opioid patients	National	316,845	1,359,446	23.31%	356,214	1,363,830	26.12%
		Acute short-acting tier	National	87,656	536,633	16.33%	94,419	526,293	17.94%
		Chronic short-acting tier	National	144,726	433,136	33.41%	169,773	434,365	39.09%
		Long-acting tier	National	47,277	92,297	51.22%	49,294	88,001	56.02%
		Tramadol tier	National	37,186	297,380	12.50%	42,728	315,171	13.56%
	<input checked="" type="checkbox"/> UDS for non-opioid abusable substances								
<input checked="" type="checkbox"/> UDS for heroin/morphine									
<input checked="" type="checkbox"/> UDS for non-morphine opioid compounds									
Follow-up	<input checked="" type="checkbox"/> Medical Follow-up after opioid initiation - Any follow-up								
	<input checked="" type="checkbox"/> Medical Follow-up -In person								
	<input checked="" type="checkbox"/> Medical Follow-up -By Phone								
Medication management	<input checked="" type="checkbox"/> Medication Management/Pharmacy Reconciliation								

# Electronic Medical Record specifications

- Optimizing design of a electronic medical record requires understanding what information needs to be collected and presented to best document care needs and plan and monitor treatment.

# Example

- CMS develops “Meaningful Use Criteria” that outline the standard types of information that an EMR must collect and make available to clinicians to meaningfully support care delivery.
- Data elements for the quality improvement metrics and decision support system were used to guide recommendations for CMS Meaningful Use Criteria to promote development of EMR software that supports good opioid prescribing practice.

# Meaningful Use Criteria Recommendations

- Experience and measures from encoding the Opioid Therapy guideline was used to:
- 1) identify important guideline concepts that currently are not captured in EMRs
  - Recommendations propose addition of structured data collection elements for these items as a standard component of EMRs
- 2) Propose standard alerts and the data rules that would drive them for EMRs
- 3) Propose standard quality metrics to guide facilities in identifying care gaps
- These were used as a basis for a solicited proposal to CMS for Meaningful Use Criteria from a federal interagency workgroup on adverse event prevention

# Panel Management Tools

- Goal: To identify higher-risk patient cohorts for case review and treatment augmentation or modification when appropriate
- Here, clinician specific patient cohorts, or high-risk cohorts that might require similar follow-up are identified.
- Used by clinicians to review and address target risk factors or guideline non-adherence
- Used by administration to identify providers, clinics, or patient clusters where training, reorganization or process improvement is warranted

# Examples

- Opioid therapy definitions and metrics were shared with the Academic Detailing Program and the Opioid Safety Initiative to facilitate their development of panel management tools.
- Academic detailing:
  - Developed facility tool with provider-level metrics with patient drill-down
  - Set facility goals for improvement
  - Worked with individual clinicians to train them on the tool and educate them on evidence-based practice change
- Opioid Safety Initiative
  - Developed provider-level lists of high risk cohorts
  - Asked VISNs to review and develop strategies to address high-risk prescribing

# Measure Validation

- Examine whether defined concepts have expected relationships to outcomes and other concepts
- Guideline outlines why key concepts should be examined and what they should predict
  - E.g. risk of adverse outcome, better patient outcome, need for clinical intervention to prevent adverse outcomes
  -

# Multivariate model predicting suicide attempts in the chronic short-acting opioid prescribed population

- **Patient Predictors** (Odds Ratio)
  - Age (0.74)
  - Gender (0.89)
  - Married (0.87)
  - Frail (1.22)
  - Drug use disorder (2.42)
  - Alcohol use disorder (1.99)
  - Mood disorder (3.55)
  - Traumatic Brain Injury (1.31)
- **Facility Predictors** (Odds Ratio)
  - Urine Drug Screen (0.17)
- **Treatment receipt** (odds ratio)
  - Mental health assessment (2.37)
  - Sedative co-prescription (1.11)
  - Urine drug screen (2.67)
  - Medication Management (1.55)
  - Rehabilitative treatments (1.36)
  - Anti-inflammatory (1.07)
  - Tricyclics (1.09)
  - SNRIs (1.08)
  - Anticonvulsants (1.25)

# Multivariate model predicting suicide attempts in the Long-acting opioid prescribed population

- **Patient Predictors** (Odds Ratio)

Age (0.77)

Married (0.85)

Frail (1.17)

Drug use disorder (2.83)

Alcohol use disorder (1.87)

Mood disorder (3.87)

TBI (1.50)

- **Treatment receipt** (odds ratio)

Mental health assessment (2.45)

Sedative co-prescription (1.20)

Urine drug screen (2.29)

Medication Management (1.61)

Rehabilitative treatments (1.30)

SNRIs (1.15)

Anticonvulsants (1.20)

- **Facility Predictors** (Odds Ratio)

Follow Up (0.18)

Urine Drug Screen (0.34)

Sedative co-prescription (20.32)

# Multivariate model predicting overdose in the chronic short-acting opioid prescribed population

- Patient Predictors (Odds Ratio)

Age (.92)

Married (1.17)

Frail (1.77)

Drug use disorder (4.41)

Traumatic Brain Injury (1.37)

- Treatment receipt

(odds ratio)

Mental health assessment (1.32)

Sedative co-prescriptions (1.10)

Urine drug screen (1.99)

Medication Management (1.52)

Rehabilitative treatments (1.92)

Anticonvulsants (1.27)

- Facility Predictors (Odds Ratio)

Urine Drug Screen (0.15)

# Multivariate model predicting overdose in the Long-acting opioid prescribed population

- **Patient Predictors** (Odds Ratio)

Gender (1.58)

Frail (1.82)

Drug use disorder (3.90)

Mood disorder (1.19)

- **Treatment receipt** (odds ratio)

Mental health assessment or psychotherapy (1.23)

Sedative co-rx (1.18)

Urine drug screen (2.20)

Medication Management (1.68)

Rehabilitative treatments (2.10)

Anticonvulsants (1.32)

- **Facility Predictors** (Odds Ratio)

Urine Drug Screen (0.21)

# Key take homes

- Encoding guidelines provides numerous opportunities to expand guideline recommendations into quality improvement or implementation tools and strategies
  - Can we develop standardized and efficient ways of incorporating this into the guideline development process?
- Variable and measure development, which is part of most research projects, has operational value to VA and other health care organizations
  - Developing ways of sharing research developed data definitions and databases with operations may increase the clinical impact of HSR&D research
- Existing VA platforms provide opportunity for relatively flexible development of tools to facilitate quality improvement and good clinical practice
  - Little research has been done on the impact of these tools and factors that moderate their effect on clinical practice