UVM ECHO -- Chronic Pain

Facilitators:

- Mark Pasanen, MD
- Liz Cote

Faculty:

- Patti Fisher, MD
- Amanda Kennedy, PharmD
- Charles MacLean, MD
- Sanchit Maruti, MD
- Rich Pinckney, MD, MPH
- Carlos Pino, MD
- Jill Warrington, MD

Introduction to ZOOM

- Mute microphone when not speaking
  - If using phone for audio, please mute computer
  - If using phone,*6 is used to mute/unmute
- Position webcam effectively (and please enable video)
- Test both audio & video
- Use “chat” function for:
  - Attendance—type name and organization of each participant upon entry to each teleECHO session
  - Technical issues
- We need your input!
  - Use “raise hand” feature; the ECHO team will call on you
  - Please speak clearly

No relevant disclosures

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CME disclosures

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- As an organization accredited by the ACCME to sponsor continuing medical education activities, Northern VT AHEC is required to disclose any real or apparent conflicts of interest (COI) that any speakers may have related to the content of their presentations.

- RECORDING OF SESSION TO BEGIN

UVM ECHO Chronic Pain: Urine Drug Testing

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Assistant Professor, Pathology and Laboratory Medicine,
University of Vermont Medical Center
Chief Medical Officer, Aspenti Health

Objectives

- Provide context for this topic in this Project ECHO
- Review current evidence and guideline recommendations for use of urine drug monitoring
- Identify the “why, who, when, what and how” of urine drug monitoring in chronic pain

Review & Context

Connections from last ECHO session: Richard Pinckney's "Assessing for Misuse"

Aberrant behavior: Use of medicine outside of the agreed upon treatment plan

Risk Mitigation Strategies:

- Treatment agreements
- Frequent office visits
- Vermont Prescription Monitoring System (VPMS)
- Current Opioid Misuse Measure (COMM)
- Pill counts (optional)
- Urine drug screening

Evidence-based Value of Urine Drug Monitoring?

"No study evaluated the effectiveness of risk mitigation strategies … for improving outcomes related to overdose, addiction, abuse, or misuse."

-CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016

Inconsistent use of risk mitigation strategies

- Cumbersome (e.g., use of prescription monitoring programs)
- Testing is difficult to interpret
- Resource allocation: Combined screening and confirmation testing ~$211–$363 per test

Unexpected test findings in chronic pain

Table 2. Incidence of aberrant Urine Drug Testing results.

Study	Patients with chronic pain who are taking opioid medications with aberrant UDT results.
Cook RF, 1995 (36)	50%
Fishbain DA, 1999 (37)	46.5%
Hariharin J, 2007 (38)	38%
Ives TJ, 2006 (39)	32%
Berndt S, 1993 (35)	32%
Katz NP, 2003 (12)	29%
Michna E, 2007 (8)	45%
West R, 2010 (40)	9-33%
Manchikanti L, 2006 (18)	16%

- Self-report of drug use in chronic pain may be an unreliable predictor
- Clinician predictions of testing are not always accurate
- Rate of aberrant testing may be high

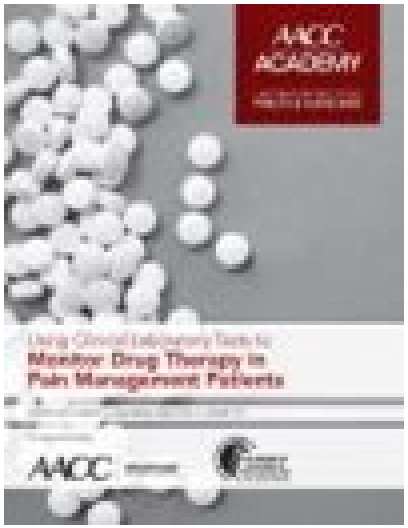
Pain Physician 2012; 15:ES119-ES133

Flurry of recent guidelines on testing in chronic pain

- Prominent guidelines include:

CDC

AACC



APS

The Journal of Pain, Vol 10, No 2 (February), 2009: pp 113-130
Available online at www.sciencedirect.com

ELSEVIER

Opioid Treatment Guidelines

Clinical Guidelines for the Use of Chronic Opioid Therapy in Chronic Noncancer Pain

Roger Chou,[1] Gilbert J. Fanciullo,[2] Perry G. Fine,[3] Jeremy A. Adler,[4] Jane C. Ballantyne,[5] Pamela Davies,[6] Marilee I. Donovan,[7] David A. Fishbain,[8] Kathy M. Foley,[9] Jeffrey Fudin,[10] Aaron M. Gilson,[11] Alexander Kelter,[12] Alexander Mauskop,[13] Patrick G. O'Connor,[14] Steven D. Passik,[15] Gavril W. Pasternak,[16] Russell K. Portenoy,[17] Ben A. Rich,[18] Richard G. Roberts,[19] Knox H. Todd,[20] and Christine Miaskowski,[21] for the American Pain Society–American Academy of Pain Medicine Opioids Guidelines Panel

[1] *Oregon Evidence-based Practice Center, Department of Medicine, Department of Medical Informatics and Clinical Epidemiology, Oregon Health and Science University, Portland, Oregon.*
[2] *Pain Management Center, Department of Anesthesiology, Dartmouth-Hitchcock Medical Center, Lebanon, New Hampshire.*
[3] *Pain Research Center, Department of Anesthesiology, University of Utah, Salt Lake City, Utah.*
[4] *Pacific Pain Medicine Consultants, Encinitas, California.*
[5] *Division of Pain Medicine, Department of Anesthesia and Critical Care, Massachusetts General Hospital, Boston.*
[6] *Seattle Cancer Care Alliance, Seattle, Washington.*
[7] *Pain Management Clinic, Kaiser Permanente Northwest, Portland, Oregon.*
[8] *School of Medicine, Neurological Surgery and Anesthesiology, University of Miami, Miami, Florida.*

- Numerous smaller societies and expert opinion publications

Why, who, when, what and how of testing:

A summation of guidelines and consensus opinions

Why testing?

Perceived value in:

- Risk mitigation strategies
- Occasional disconnect of subjective assessment with objective measure

Indications:

1. Confirm use of prescribed medications
2. Support referral for treatment for substance use disorder
3. Indicate if more frequent re-evaluation is needed
4. Identify other substances that increase risk of opioid use or overdose
   (e.g. benzodiazepines/other CNS depressants, fentanyl)

Secondary indications:

1. To guide offering naloxone (if evidence of risky behavior, use of other opioids)
2. Improve patient safety (e.g., change in pain management strategy)
3. Support tapering or discontinuation of opioids

Who and when of testing?

- Baseline at initiation of any opioid therapy
- At least annually for all patients on opioids
- Higher risk patients will likely require more testing

Risk stratification:

	# Tests/Year	Support
Low	1-2	1, 2, 3
Medium	3-4	2, 3
High	4 or every month, office visit or every drug refill	2, 3
Aberrant behavior	At each visit	3

1. CDC Guideline for Prescribing Opioids for Chronic Pain — United States, 2016

2. Pain Physician 2012; 15:ES119-ES133

3. Urine Drug Testing for Substance Use and Pain Management, BCBS, Washington State— July 2018

What testing?

Opioids	Benzodiazepines	Stimulants	Other
Morphine	Nordiazepam	Amphetamine	Ethanol (EtG)
Codeine	Oxazepam	Methamphetamine	Carisoprodol
Fentanyl	Temazepam	Methylphenidate	THC
Oxycodone	Alprazolam	Cocaine	Phencyclidine
Oxymorphone	Lorazepam	MDMA	Barbiturates
Hydrocodone	Clonazepam		
Hydromorphone			
6-AM (heroin)			
Tramadol			
Tapentadol			
Methadone			
Buprenorphine			
Propoxyphene			
Meperidine			

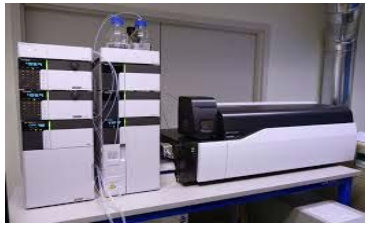
Prevalence argues against routine testing

Pain Physician 2012; 15:ES119-ES133

What testing strategies are available?

Point of Care (POCT)

Lab immunoassays



Confirmation testing

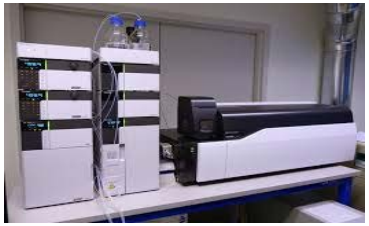
Immunoassays

What testing strategies are available?

Slow, Pricey

Speed, cost

Fast, Cheap



Confirmation testing

Lab immunoassays

POCT

Diagnostic certainty

What testing strategies are available?

Slow, Pricey

Speed, cost

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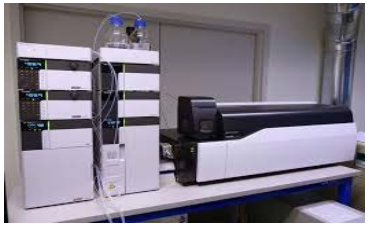
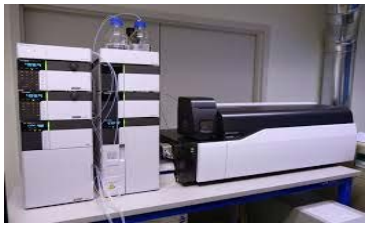


Confirmation testing



LC screening

Lab immunoassays

POCT

Diagnostic certainty

Warning: Highly controversial….

How to test?

First step	Next step	Support for strategy
POCT or EIA	-	Some payors
POCT or EIA	Confirmation testing, as needed	CDC
Direct to confirmation	-	Argoff et al. (consensus panel), AACC, Snyder et al., 2017
LC screening	Confirmation testing, as needed	Too new for evaluation

Warning: Highly controversial….

How to test?

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Other “how” take-aways

- Randomized collections are preferred
- UDT should be part of an informed consent and opioid agreement
- Office policy on testing should be in place
- Interpreting results is challenging and essential

J Pain (2009) 10: 113

Why is interpretation so challenging?

Complicated by:

Tests	False positives and negatives; Technical language; Complex metabolism
Patients	Denied use Tampering; Patient factors
Lack of standardization	Variable cutoffs/methods

Prim Care Companion CNS Disord. 2012; 14(4).

Interpretation Difficulties

- Immunoassays: Challenged by predictable but complicated false positives and false negatives
- Identification of parent drug vs. metabolite
- Unusual metabolic pathways

- When in doubt, ask your laboratory for support

Reference material

Common cross-reactivities by immunoassay

Drugs/drug Class	Select examples of cross-reactivities
Cannabinoids	Efavirenz Naproxen Ibuprofen Riboflavin Tolmetin
Opioids	Diphenhydramine Poppy seeds Dextromethorphan
Amphetamines	Phenylpropanolamine Promethazine Thioridazine Trazodone Trimipramine Methylphenidate Pseudoephedrine, ephedrine Desipramine Buproprion Propanolol, Labetalol Selegline Amantadine Ranitidine Vick's vapor spray
Benzodiazepines	Oxaprozin Quetapine Sertraline

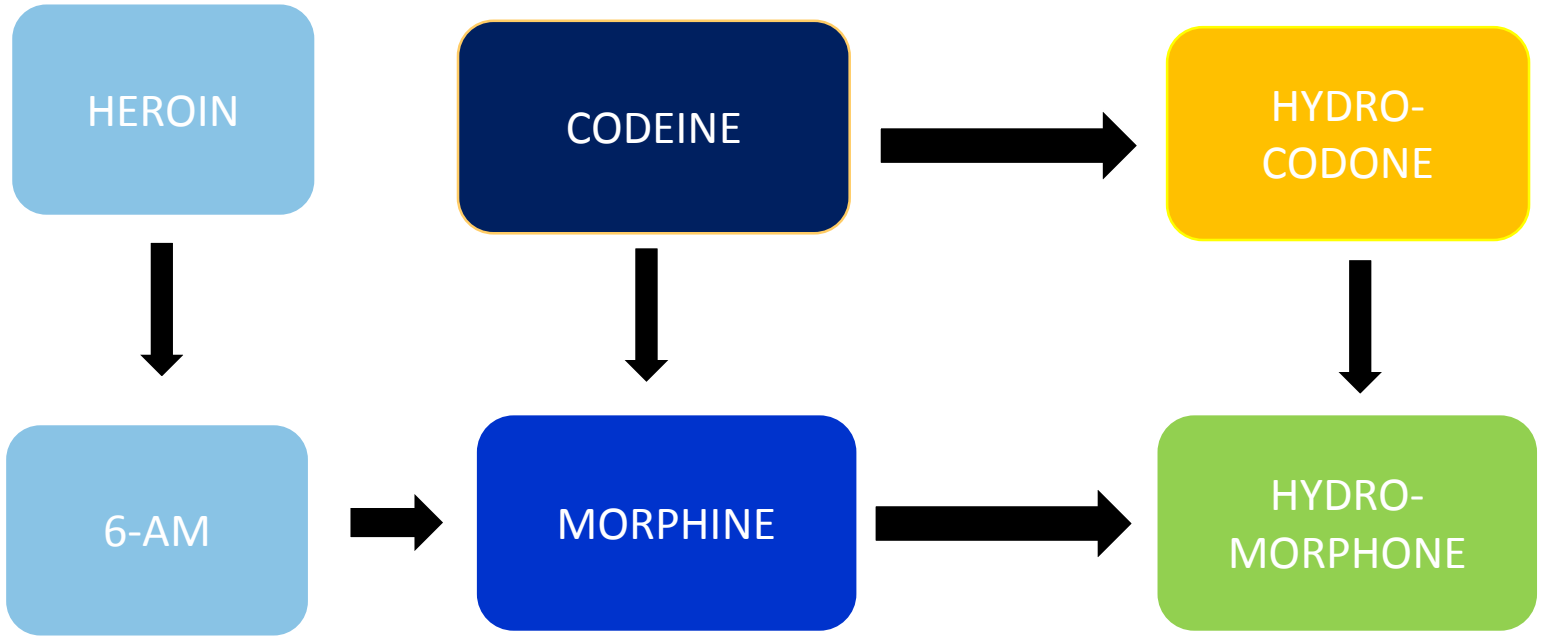
Drugs/drug Class	Select examples of cross-reactivities
Buprenorphine	Sulfamethazole-Trimethoprim Codeine Tramadol Quinine
MDMA (ecstasy)	Buproprion
Fentanyl	Metamphetamine Trazodone Illicit Fentanyls
Tapentadol	Doxepin Imipramine Trimipramine Tramadol

For a more complete list,
work with your laboratory

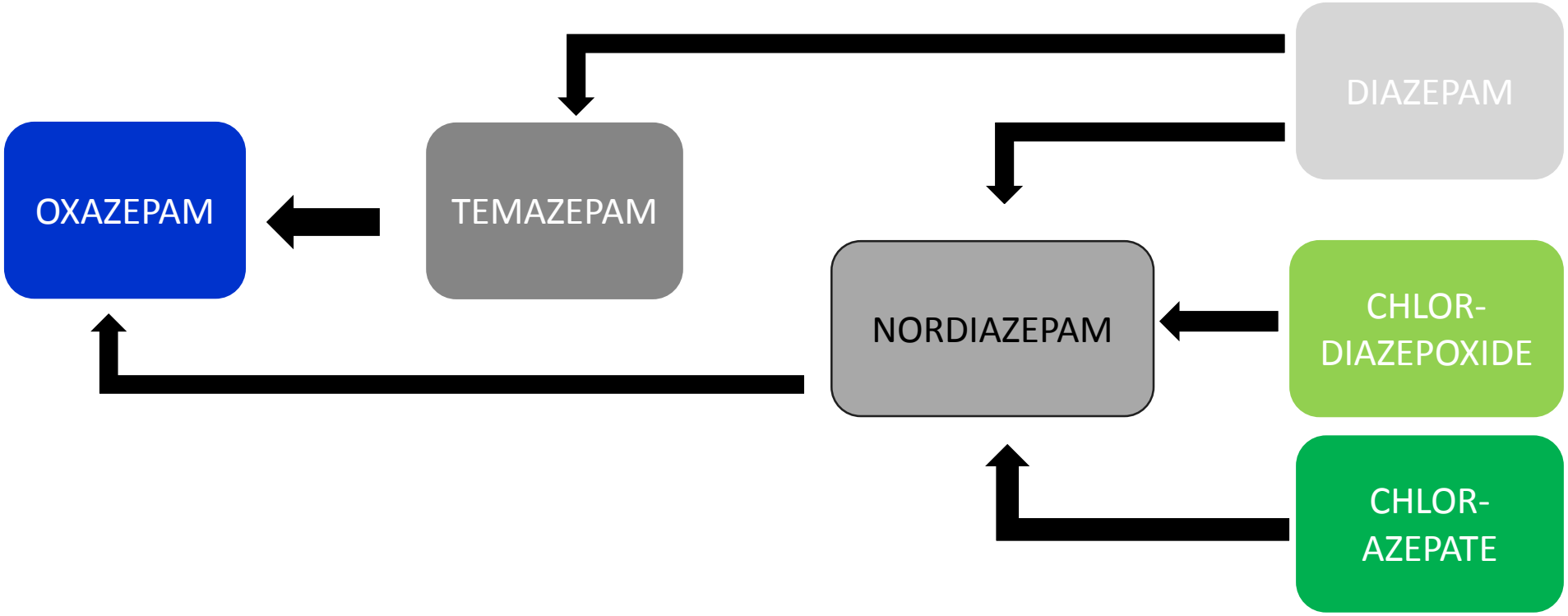
Select parent-drug combinations

Parent Drug	Metabolite
Heroin	6-AM
Buprenorphine	Norbuprenorphine
Methadone	EDDP
Ethanol	EtG/EtS
Cocaine	Benzoylecgonine
Methylphenidate	Ritalinic acid

Simplified metabolic pathways: Opioids



Common metabolic pathways: Benzodiazepines



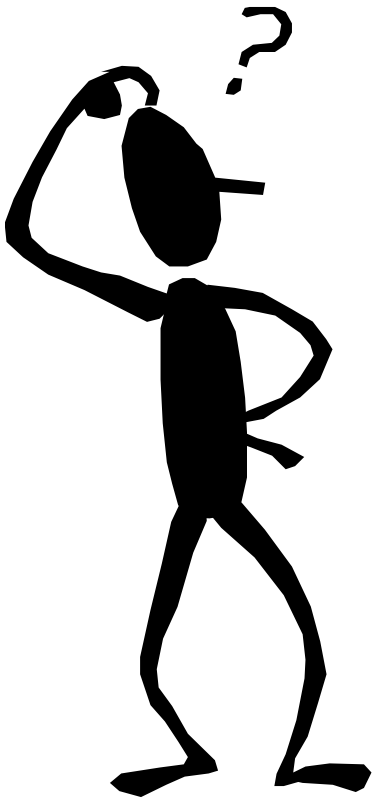
Opioid metabolites – a more comprehensive list

Opioids	Metabolites
Hydrocodone	Hydromorphone Dihydrocodeine Normorphine Norhydrocodone Hydrocodol Hydromorphol
Oxycodone	Oxymorphone Noroxycodone Oxycodols and their oxides
Morphine	Hydromorphone (minor) Morphine-3-glucuronide Morphine-6-glucuronide Normorphine
Methadone	2-ethylidene-1,5-dimethyl-3,3-diphenylpyrrolidine 2-ethyl-5-methyl-3,3-diphenylpyrrolidine
Hydromorphone	Dihydromorphine Hydromorphone-3-glucuronide
Oxymorphone	Oxymorphone-3-glucuronide Oxymorphol
Codeine	Hydrocodone (minor) Norcodeine Morphine

Opioids	Metabolites
Propoxyphene	Norpropoxyphene
Fentanyl	Norfentanyl
Tramadol	O-desmethyl-tramadol Nortramadol
Butorphanol	Hydroxybutorphanol Norbutorphanol
Buprenorphine	Norbuprenorphine Norbuprenorphine-3-glucuronide Buprenorphine 3-glucuronide
Heroin	Morphine Codeine (contaminant) 6-monoacetylmorphine (6-AM)

Pain Physician 2011; 14:123-14

Questions



- RECORDING TO BE STOPPED

Case Presentation

The discussion and materials included in this conference are confidential and privileged pursuant to 26VSA Section 1441-1443. This material is intended for use in improving patient care. It is privileged and strictly confidential and is to be used only for the evaluation and improvement of patient care.

ECHO Reminders

- Volunteers to present cases
  - Use the case presentation form template
- Please complete evaluation forms for each session
  - CME will be processed once session evaluation form is received at UVM
- UVM Project ECHO materials available at www.vtahec.org
- Please contact us with any questions/suggestions
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