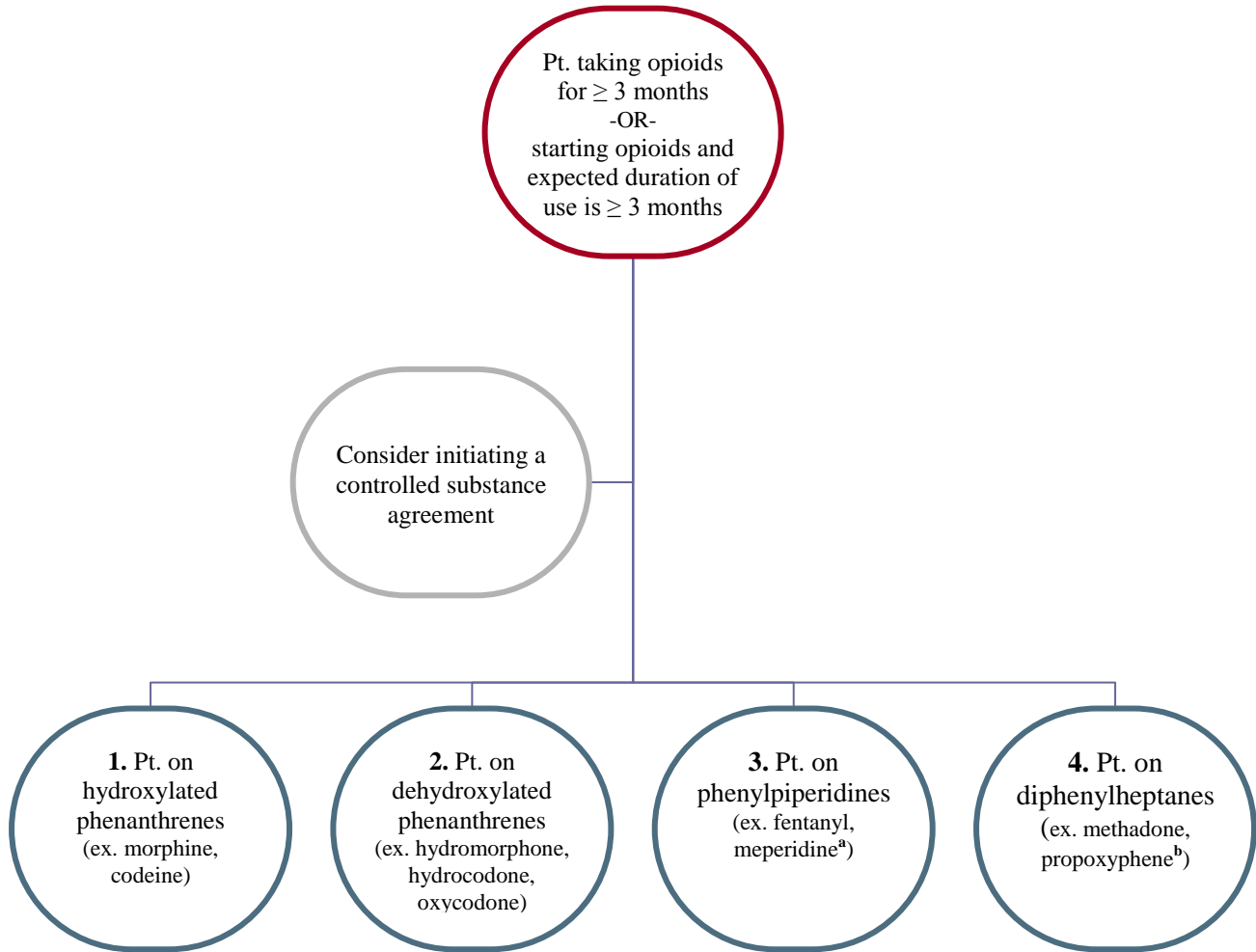


Urine Drug Screen (UDS) Algorithm

Figure 1: Overall Opioid/Opiate Drug Classifications



See Figure 1 for a complete list of each chemical classification.

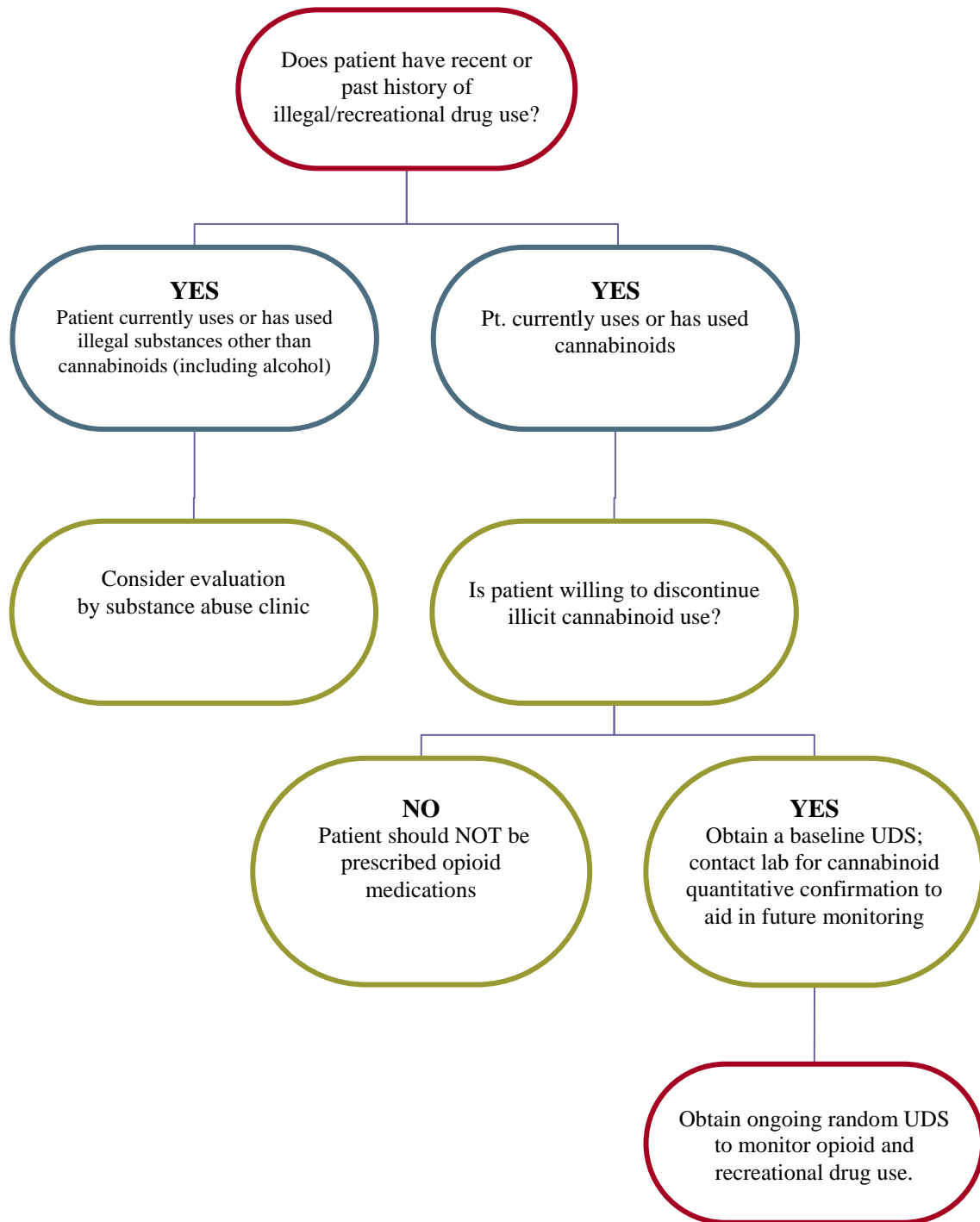
- a. Meperidine should not be used chronically for pain based on toxicity profile.¹
b. Propoxyphene is not available on the U.S. market.²

Urine drug screens are intended to **screen** for patients who may be diverting, supplementing, or abusing prescribed drugs or other illicit substances.
They are not intended to predict or determine dose vs. compliance.

1. Raymo LL, Camejo M, Fudin J. Eradicating analgesic use of meperidine in a hospital. *AJHP*. 2007;1150-1153.

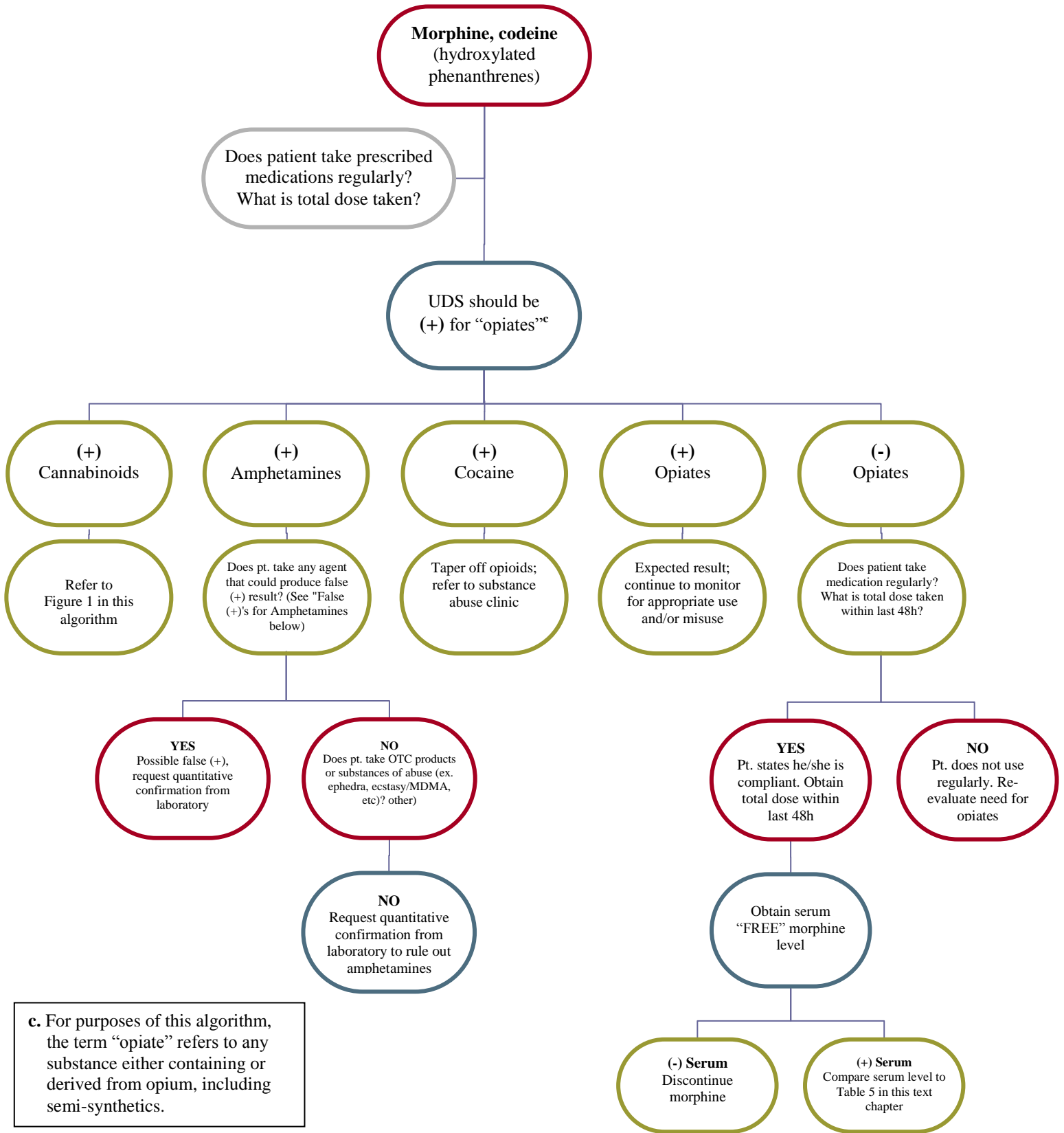
2. Jonasson Ulf, Jonasson B, Saldeen T. Correlation between prescription of various dextropropoxyphene preparations and their involvement in fatal poisonings. *Forensic Science International*. 1999. 103;125-132.

Figure 2: Is your patient a candidate for opioid/opiate medications?



Monitoring Urine Drug Screens

Figure 3: Monitoring UDS for Morphine/Codeine



c. For purposes of this algorithm, the term “opiate” refers to any substance either containing or derived from opium, including semi-synthetics.

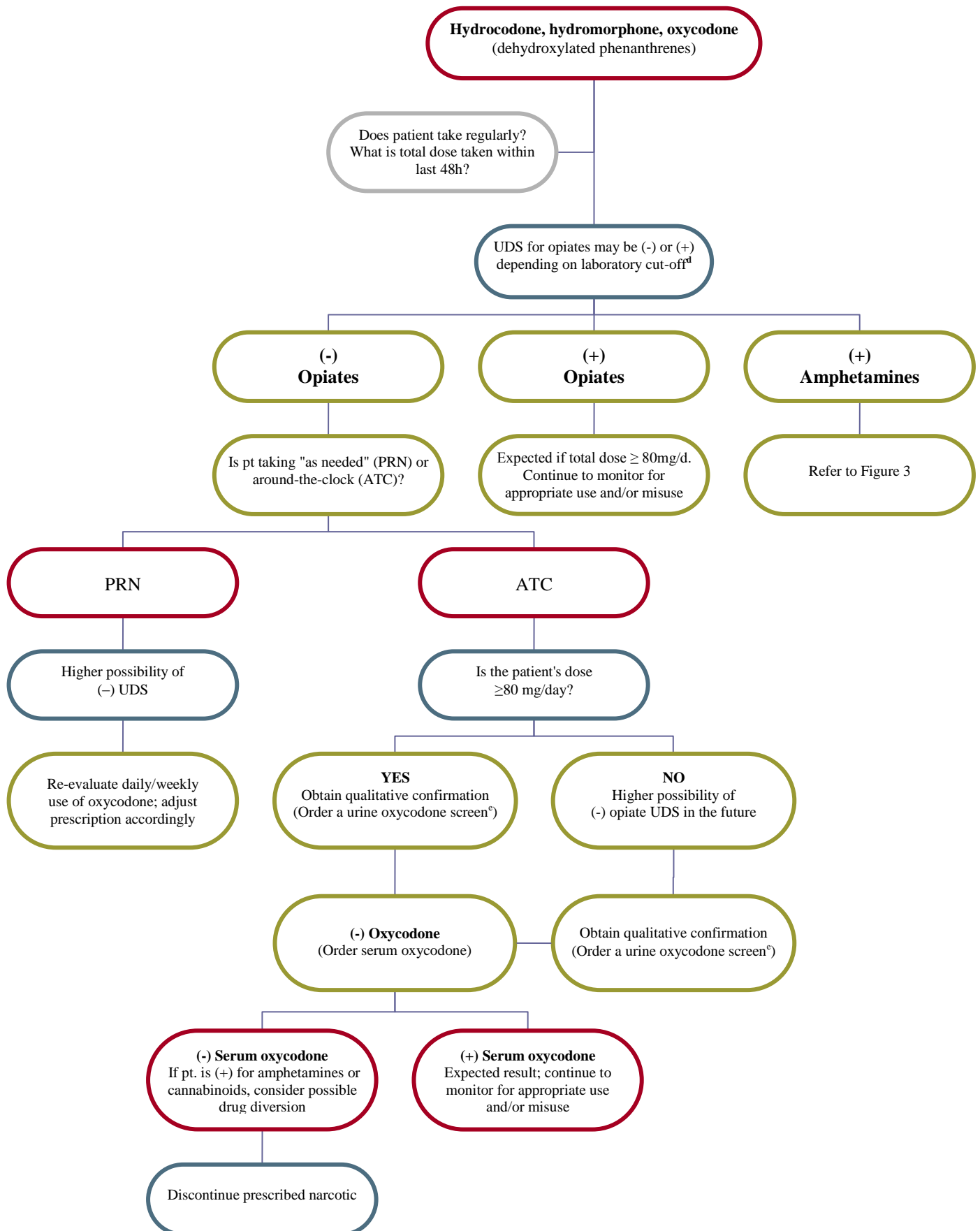
Examples of Drugs that may Cause False Positives for Amphetamines
(Note: This table is not all inclusive)

Any drug with a catecholamine nucleus:

- β -blockers (including propranolol, atenolol, timolol ophthalmic)
- β -agonists
- Dopamine congeners (ex. levadopa, carbidopa, bupropion)
- α -agonist catecholamines [including chronic use of eye drops (Visine®), nasal decongestants (Afrin®)]
- Pseudoephedrine, phenylephrine, ephedra
- Adrenergic ophthalmic (ex. dipivefrin, timolol, levobunolol)

NOTE: Methylphenidate will NOT show (+) for amphetamines

Figure 4: Monitoring UDS for Oxycodone/Hydrocodone/Hydromorphone



d. opiate cut-off's vary by laboratory and institution. This algorithm is based on a **morphine 300 ng/ml**. Laboratory detection thresholds may range from 300 to 2000 ng/mL for morphine). Screens are calibrated for morphine only, but other phenanthrenes are included by default. The urine **opiate screen** will detect other opiates at the following concentrations where a 300ng/mL cut-off is based on morphine. These may vary by laboratory.

:

Oxycodone	23000 ng/mL
Hydrocodone	1700 ng/mL
Hydromorphone	1700 ng/mL
Oxymorphone	41000 ng/mL

e. Urine **oxycodone screen** detection threshold is **100 ng/ml**. This screen offers greater sensitivity versus the standard urine opiate screen (above) for the detection of oxycodone.

The urine oxycodone screen will detect other opiates at the following concentrations:

Hydrocodone	1562 ng/mL
Hydromorphone	12500 ng/mL
Oxymorphone	1562 ng/mL

Figure 5: Monitoring UDS for Fentanyl

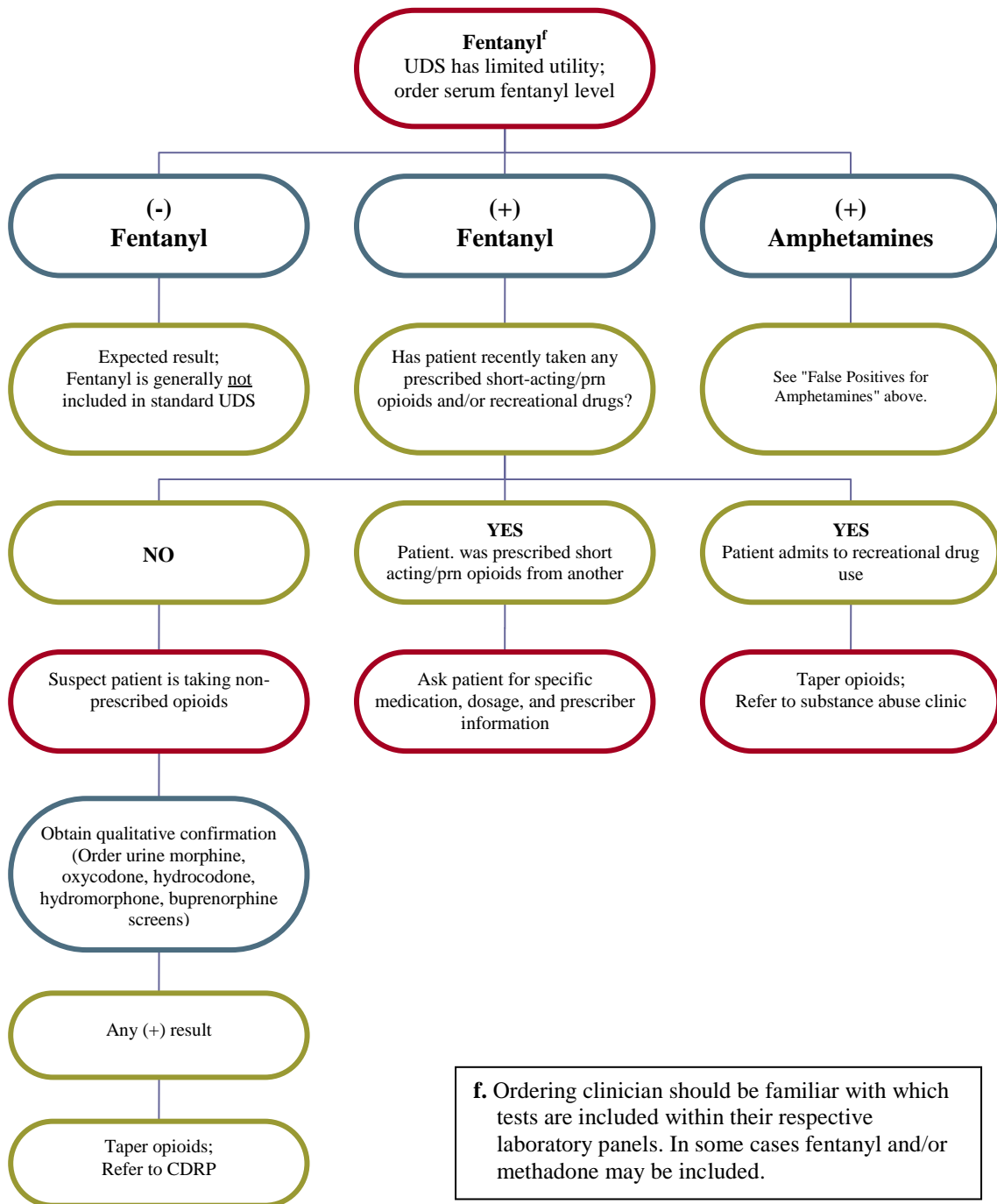
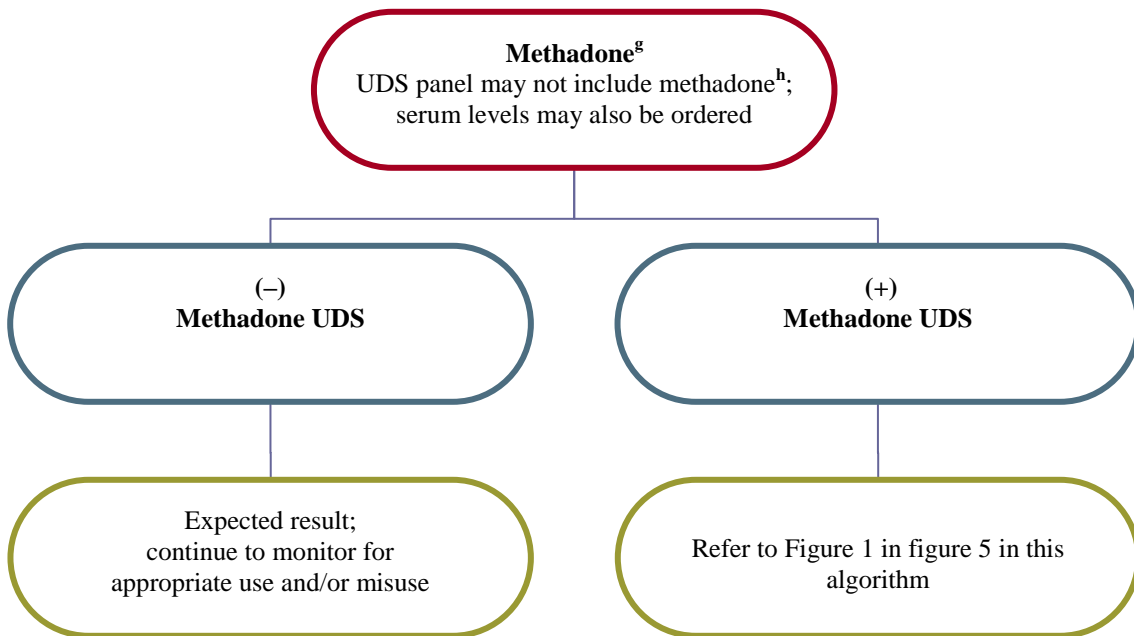


Figure 6: Monitoring UDS for Methadone



g. Methadone is CYP 3A4 substrate and is therefore prone to many drug interactions.

h. Some laboratory panels include methadone, but not fentanyl. Methadone UDS may be ordered as a separate test. In some cases fentanyl and/or methadone may be included in the UDS panel. If pt. on $\geq 20\text{mg/d}$ of methadone, urine should remain (+) for 3 days.

Disclaimer: These flow charts are not comprehensive, are not all inclusive, and may not include every possible permutation presented by the patient. These flow charts are intended as a simple guide and ordering clinician MUST know which drugs are included in the urine drug screen panel.

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1. Chronic Pain Treatment Guidelines. URL available online at: <http://www.painmed.org/pdf/medical_treatment_utilization_schedule_guidelines.pdf> August 2007 (P: 35-41).
2. Florate Jr, Orlando G. Urinary Drug Testing In Pain Management. Practical Pain Management. PPM Communications, Inc., Glen Mills, PA. April 2005 (P: 38-42).
3. PainEDU.org. Screener and Opioid Assessment for Patients with Pain (SOAPP)®Version 1.0. ©2008 Inflectxion, Inc. URL available online at: http://painedu.org/soapp/SOAPP_24.pdf.
4. Probes, Laerence M. Opioid Blood Levels in Chronic Management. Practical Pain Management. PPM Communications, Inc., Glen Mills, PA. April 2005 (P: 12-18).
5. Veterans Health Administration, Department of Defense. VA/DoD Clinical Practice Guideline for the Management of Opioid Therapy for Chronic Pain. Washington (DC): Veterans Health Administration, Department of Defense; March 2003.
6. Virami, Adil; Mailis, Angela; Shapiro, Lori E; Shear, Neil H. Drug Interactions in Human Neuropathic Pain Pharmacology. © 1997 International Association for the Study of Pain. Pain 73 (1997) 3-13.

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