Legacy LabAdvisor



Quarterly laboratory and pathology update from Legacy Laboratory Services in collaboration with Cascade Pathology

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Specialized test for pain medication compliance

By David K. Roberts, Ph.D. — Legacy Laboratory–Toxicology

Opioid drugs are being increasingly prescribed for treatment of chronic pain. Meanwhile, the use of prescription drugs for non-medical purposes has emerged as a significant issue.

These two patterns pose a new challenge for many physicians: how to effectively manage pain while guarding against drug addiction and diversion of prescription drugs for profit.

Legacy Laboratory Services has developed a solution for managing the use of drugs for chronic pain, MedManager, a comprehensive pain-medication testing program to help physicians manage compliance cost-effectively, therefore protecting their practice from liability.

Scope of the pain medication problem

Chronic pain affects one third of the U.S. population and is a leading cause of physician visits. However, according to the National Survey on Drug Use and Health, 6.2 million Americans ages 12 and older are current users of prescription drugs for non-medical purposes. Of this population, an estimated 4.4 million use pain relievers specifically. Correspondingly, long-term use of opioid drugs has been characterized as a public health epidemic. Consider the following summary from the Centers for Disease Control Grand Rounds, Feb. 17, 2011 (Reference 1):

- Deaths from prescription medication in 2007: more than 27,000 a year.
- A death from prescription medication occurs every 19 minutes.

- Opioid medication utilization in the U.S. increased approximately seven-fold between 1997 and 2007.
- Doses above 100 mg/day morphine equivalent dose [MED] are associated with significant increased risk of death.
 Increasing opioid use is also a problem in Oregon (References 2-3):
- Retail sales of oxycodone in Oregon increased nine-fold between 1997 and 2006.
- Deaths from methadone overdose increased 18-fold between 1999 and 2008.
- Deaths attributed to prescription medication overdose in the 25–54 age group now exceed motor vehicle deaths.
- Oregon ranks fifth in prescription abuse in the U.S. and first in the age group of 18–25 years.

Why test for compliance?

The reality is that many patients are not taking their medications as prescribed. Instead, they are using them to feed a drug addiction or diverting them for financial profit.

This situation leaves physicians to face a dual imperative: ensuring these pain medications are available to patients with legitimate medical needs while minimizing the potential for misuse. Finding the right balance between treating pain and preventing medication abuse can be a challenge.



Knowing the facts and initiating routine pain medication compliance testing on all pain-management patients can protect you and your practice from liability.

A specialized test

To help physicians manage compliance cost-effectively, Legacy Laboratory Services offers Med-Manager. Available exclusively through Legacy Laboratory, MedManager allows you to:

- Monitor patients' compliance with prescribed medications
- Detect unauthorized medications
- Detect illicit drugs of abuse
- Review expert toxicology analyses and interpretations

MedManager is a specialized urine drug test based on modern technologies that have been optimized for detection of low concentrations of the drugs used to treat chronic pain. Those technologies:

- Enzyme immunoassay (EIA)
- Gas chromatography/mass spectrometry (GC/MS)
- Liquid chromatography/tandem mass spectrometry (LC/MS/MS)

MedManager offers:

- Extensive testing panel that detects illicit drugs and commonly prescribed pain relief drugs, including fentanyl, tramadol and buprenorphine
- Lower EIA screenings cutoffs and LC/MS screens for the highest sensitivity
- Concise interpretative reports
- Access to board-certified toxicologists

New patient service center Legacy Laboratory Sherwood 20015 S.W. Pacific Highway, Suite 221 Sherwood, OR 97140

Hours: M–F, 7:30 a.m.–5 p.m. Phone: 503-414-8550 Fax: 503-414-8549

A complete list of our patient service centers, conveniently located across the Portland-Vancouver area, Eugene and the Oregon Coast, may be found on our website at www.legacyhealth.org/labservices.

Also available is our MedManager Point of Collection (POC) rapid test, which allows physicians to conduct an initial screening on new patients in the office and receive instant results, similar to the way a home pregnancy test works.

Experience in toxicology

To assist in our quality testing services, Legacy Laboratory offers two Ph.D. board-certified toxicologists, who between them have a combined 50 years of experience in toxicology and clinical chemistry.

Both David Roberts, Ph.D., and Greg Grinstead, Ph.D., have extensive training in pharmacology and a working understanding of how drugs are metabolized, which makes them uniquely qualified to provide assistance in interpreting results of questionable patients.

To learn more about MedManager, please call Client Services at 503-413-1234 or toll-free 877-270-5566.

Alcohol	Cocaine	Meperidine	Propoxyphene
Amphetamine	Fentanyl	Methadone and EDDP	Tramadol
Barbiturates	Heroin	Opiates	Complete Specimen Validity Testing including synthetic urine detection
Benzodiazepines	MDMA (Ecstasy)	Oxycodone	
Buprenorphine	Marijuana (THC)	Phencyclidine (PCP)	

MedManager testing panel

¹ CDC: Grand Rounds; Prescription Drug Overdose: An American Epidemic; Feb. 17, 2011.

² Office of Disease Prevention and Epidemiology, Oregon Public Health Division.

³ The Oregonian, Oregon Ranks Fifth in Prescription Painkiller Abuse in the United States, Berstein, M., 11/22/10.

Molecular assay tests for pertussis infection

By Mary Perkins, Manager, Molecular Diagnostics Laboratory

Pertussis is a highly contagious acute bacterial infection of the respiratory tract caused by Bordetella pertussis. The disease, commonly referred to as whooping cough, is more severe in infants and young children. Although the infection is milder or even asymptomatic in adults, they may transmit the disease to other susceptible persons.

The incidence of confirmed B. pertussis infections has increased in recent years. Oregon saw a six-fold increase in reported cases in the mid-2000s. Data are not available for 2010; however, Legacy Laboratory Services saw an increase in testing for B. pertussis last year and reported 73 positive cases.

Legacy Laboratory Services offers the standard of care in testing. In 2003, Legacy Lab pioneered a molecular assay for B. pertussis with development of a method using polymerase chain reaction (PCR) technology, a form of nucleic acid amplification (NAAT) or "molecular" testing. We continue to offer this test.

New testing developments at Legacy Laboratory

Introducing "PAP Plus": Single vial testing for cervical cancer, chlamydia and gonorrhoeae.

The pairing of highly specific FDA-approved nucleic acid amplification tests for CT and GC, with *both* SurePath and ThinPrep liquid PAP tests, is a welcome development in women's health care.

Molecular diagnostics: Real time PCR (RT-PCR) BK virus testing for plasma is now available from Legacy Laboratory Services.

Special coagulation testing: As part of our comprehensive menu of coagulation testing, heparin Xa testing for Lovenox and Fragmin has resumed at Legacy Laboratory Services.

Questions and Answers

By Danelle Beaudoin, Ph.D., Scientific Director of Chemistry, Legacy Laboratory Services

1.) What is the recommended algorithm for diagnosing hypothyroidism or hyperthyroidism?

Answer: For ambulatory patients, current recommendations are to measure thyroid stimulating hormone (TSH) with an assay that has a functional sensitivity of ≤0.02 mIU/L. If TSH is outside the reference range, then free thyroxine (FT4) should be measured. If diagnosis is still uncertain, other thyroid testing should be ordered.

2.) What is a better measure of hypothyroidism or hyperthyroidism state, total thyroxine (TT4) (CPT code 84436) or free thyroxine (FT4) (CPT code 84439)?

Answer: Most thyroxine (T4) is bound to specific plasma proteins. Free T4 is considered the biologically active form. Therefore, in addition to TSH, free T4 is usually recommended over total T4. Abnormal total T4 concentrations are more commonly a result of binding protein abnormalities than actual thyroid dysfunction.

3.) If free thyroxine is measured, is it appropriate to measure total thyroxine as well?

Answer: In most situations, free T4 is the recommended test. However, thyroid function should be assessed with TSH and total T4 when the binding of T4 to the proteins is altered or to evaluate discordant free T4 results.

4.) When should the thyroxine binding globulin (TBG) be ordered?

Answer: The most common indication of TBG testing is diagnosing hereditary deficiency of TBG (prevalence 1:5000). In addition, TBG is measured to evaluate discordant thyroid hormone results.

References:

Laboratory Medicine Practice Guidelines. Laboratory Support for the Diagnosis and Monitoring of Thyroid Disease. Thyroid 13(1): 1–126, 2003.

^{2.)} CLSI. Measurement of Free Thyroid Hormones; Approved Guideline. CLSI Document C45-A, Vol 24 No 31, 2004.



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