

DNA Today



Science that benefits humanity.



QHI Improves Pain Management with YouScript®

Quadra Health Institute (www.quadrahealth.com) is one of the Southwest's leading Sports Medicine and Acute Pain Management clinics. Known for taking a multidisciplinary, biopsychosocial approach to treating pain, Quadra Health Institute (QHI) integrates four components: an Evidence-Based Musculoskeletal Clinic, Physical Therapy, Graded Exercise, and a Behavioral

approach to help individuals learn how to better manage and cope with behavioral issues related to pain.

Located in Albuquerque, New Mexico, QHI is a very busy clinic. Medical Director Dr. Pamela Black oversees three Physician Assistants—Kay Heaphy, PA-C, Fernando Vigil, PA-C and Bitu Sheth, PA-C—to treat about seventy patients a day and per-

“Pharmacogenetics is really the wave of the future in terms of prescribing medications.”

form nearly sixty interventional procedures a week.

Dr. Black's interest in pharmacogenomics stemmed from the

high amount of opioid use she sees. Opioid medications, such as morphine or Oxycontin, are powerful painkillers often prescribed for chronic pain. This chemical power, however, can be dangerous. Adverse effects and addiction can be common, so opioids must be prescribed carefully, especially since many go through the highly polymorphic CYP pathways.

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Stark Contrast Between Patient and Practitioner Interest in Pharmacogenetic Testing

While it's no stretch to say personalized medicine is becoming one of the great healthcare achievements of the decade, adoption of personalized medicine concepts is currently dependent on specialty practices. At Genelex, we believe one of the next key barriers to overcome is universal clinical recognition of the value of personalized medicine, and pharmacogenetic testing in particular. Last spring *Clinical Pharmacology and Therapeutics* published the results of a nationwide survey that measured U.S. physicians' knowledge and adoption of pharmacogenomic testing. The anonymous survey of 10,303 physicians found that while 97.6% of physicians

Only 10% of physicians feel adequately informed about pharmacogenetic testing.

agreed that genetic variations may influence drug response, only 12.9% had ordered genetic testing in the last six months, and even fewer (10.3%) felt adequately informed about the technology. However, these percentages varied widely between specialties with the highest proportion being oncology, where 68.8% of doctors were early adopters of genetic testing.

More education needed

Previous education and training significantly affected the likelihood of a doctor ordering genetic tests, and many physicians completed their

education before such training was offered; only 37.7% of respondents had received formal training in pharmacogenomics during medical school or post-graduate studies.

Despite the lack of formal training, the main obstacle many physicians face is an understanding how to incorporate PGx into their daily practice. “The knowledge gap faced by physicians is not primarily in the basic principles of pharmacogenomics; almost all respondents understood and accepted that genetic variations affect drug response,” says the report. “The gap is

pragmatic and clinical -- what tests are available, how to procure them, when to use them, how to interpret the results, and how to apply them in an individual patient.”

While physician interest in pharmacogenetic testing is

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New Pharmacogenomics Course Offered

A new continuing education course in pharmacogenomics is now available to prescribers interested in personalized medicine. This course was made possible through a partnership between Genelex and Ohio Northern University's Raabe College of Pharmacy.

The course, called *Application of Pharmacogenetics*, is hosted and licensed through Ohio Northern University (ONU) facilitated by our own Brian Hocum, PharmD. The course covers the fundamental aspects, methods, and benefits of pharmacogenetics, including: identifying important

drug interaction mechanisms, describing the clinical impact, understanding pharmacogenetic information, how to recognize which patients will benefit most, and how to work with patient drug regimens. The course counts as one continuing education credit.

Emphasis on Personalized Medicine

Ohio Northern University is special due to their Raabe College of Pharmacy's emphasis on personalized medicine. As Dr. Jon E. Sprague, Dean of Raabe College, says on their website, "We are the only school of pharmacy to put an



emphasis on pharmacogenetic testing."

Dr. Hocum has been working with Dr. Andrew Roecker, Chair, to implement this new course. Genelex has had a previous relationship with ONU, but this is the first time we've partnered with a university to offer continuing education. The program will be available through November 30th, 2015.

More Options for Continuing Education

In addition to Ohio Northern University's course, Genelex also recommends prescribers consider continuing education through the American College of Clinical Pharmacology and *Drugstore News*. Genelex is also currently pursuing other possible venues for further continuing education, including offering in-office visits with our personalized prescribing professionals. Interested parties can view CE options at:

<http://youscript.com/health-care-professionals/continuing-education/>.

QHI Improves Pain Management with YouScript®

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Dr. Black had considered pharmacogenomics in the early 2000s, but a lack of commercially available services deterred her. Nevertheless, the idea that a person's genes and medication regime could conflict stayed with her. A 2012 meeting with YouScript's Mike Marra and Fred Mady introduced her to Genelex.

Integrating pharmacogenomics into her practice "is changing the way I'm practicing," says Dr. Black. By using YouScript®, Dr. Black has been able to tailor dosing strategies and more quickly identify when patients need to be switched from one medication to another.

Dr. Black cited a recent example of a patient on large doses of oxycodone whose testing revealed they were a CYP2D6



poor metabolizer. "I can say to them, unequivocally, this is not the medicine for you to be using," she said. The patient was switched to morphine, and while they needed help with

their psychological addiction to oxycodone's euphoric effects, the patient ultimately benefited from the change with improved pain relief at a smaller dose. Dr. Black says she appreciates the

concrete data that YouScript provides, "I know I've got the data to back me up."

This type of opioid addiction is a recurrent problem in the region and using YouScript has helped Dr. Black identify suspicious cases, such as when a normal metabolizer returns multiple times requesting more medication. By monitoring them more closely and scheduling pill counts, she is more equipped to detect possible addiction or medication diversion. When unusual doses have been necessary, Dr. Black says YouScript has helped her provide better justification for her medication choices during medical board review.

In addition to screening for pharmacogenetic effects, Dr. Black also uses YouScript to
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Genelex: The Next Chapter

After more than two decades of paternity testing, Genelex has sold its paternity testing division to DNA Diagnostics center, allowing the company to respond to multiple years of 200%+ growth in pharmacogenetic testing and redouble its focus on the YouScript® Personalized Prescribing System. Genelex was founded in 1987 and since then has been relied upon by state and international agencies for forensic and relationship testing to help solve complex cases and process immigration applications.

In 2000, Genelex became one of the first labs to provide pharmacogenetic (also known as pharmacogenomic) testing, and today the company's high-capacity laboratory offers 9 pharmacogenetic tests and processes thousands of samples every month.

The company's high accuracy results, clinical decision support tools and pharmacist support make it a recognized leader in pharmacogenetic testing and personalized medication management software.

QHI Improves Pain Management with YouScript®

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detect drug-drug interactions. Most of her patients are referred by other physicians and many arrive already on CYP2D6-inhibiting drugs. This can cause major problems for opioid patients, so Dr. Black frequently contacts other prescribers and talks to them about changing their recommendations. Where it was challenging in the past, most have been more receptive after seeing the data from YouScript.

Regarding YouScript's usability, Dr. Black had a lot to say. "I really like the program. I love being able to enter a drug and see if it changes the profile or not, or if I need to try something else...YouScript makes it easy to learn more about the pathways. And that's helped my

general knowledge about the area as well. It's a good education tool."

Dr. Black believes pharmacogenomics has a bright future and is looking forward to better EMR integration and greater prescriber use. "I hope that you guys get more doctors on board. It's really the wave of the future in terms of prescribing medications," said Dr. Black.

Are you a healthcare provider?



And ready to make Personalized Prescribing part of your practice or pharmacy?

Call 800-TEST-DNA and ask for a Medical Accounts Specialist. We can help you take the guesswork out of prescribing at no cost to you or most of your insured patients.

Are you a patient?



Is Personalized Prescribing right for you?

Call Genelex at 800-TEST-DNA or visit www.YouScript.com.

Stark Contrast Between Patient and Practitioner Interest in Pharmacogenetic Testing

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growing, (12.9% had ordered genetic testing and 26.4% anticipated ordering in the next six months) it is still low and in stark contrast when compared to patient interest.

A study published by the National Institute of Health showed that 92% of patients would be interested in PGx testing to assist with drug selection, and 85% would be interested in PGx testing to predict serious side effects. Some had even had pharmacogenetic testing done on themselves (1%) or a family member (4%). Unsurprisingly, the interest in pharmacogenetic testing was higher in those who had previously experienced a side effect

from a prescribed drug (95%).

Recent campaigns such as "Pharmacogenomics: Increasing the safety and effectiveness of drug therapy" by the AMA should be helpful in educating practitioners who are concerned about reducing their patient and practice risk for adverse drug events about the practicalities of adopting pharmacogenetic testing. If you'd like to receive a copy of the AMA brochure, or would like to learn more about how to put pharmacogenomics to work in your practice, register for the free webinar, *Introduction to Pharmacogenetics: Right Drug, Right Dose* at www.youscript.com/webinar

YouScript Wins Allscripts Open App Challenge

YouScript® recently advanced to phase two of the Allscripts Open App Challenge, winning acclaim and a \$10,000 prize. The Open App Challenge was created by Allscripts and Health 2.0 to encourage developers and vendors to design integrated electronic healthcare record (EHR) applications.

More than 200 contestants submitted prototypes, but only 15 were chosen to advance—including YouScript, Genelex's personalized prescribing system for optimizing medication management. Winners were announced at the 2013 HIMMS conference in New Orleans.

Phase two challenges these



fifteen finalists to fully integrate their products into Allscripts EHR software at an active client site. The application that enables the most overall improvement stands to win a \$250,000 prize. The final decision will be announced in Chicago, August 12-13, 2013.

Get a sneak peak of the YouScript implementation or sign up to be an Allscripts/YouScript beta site at www.youscript.com/allscripts/.

Interested in having YouScript in your EHR? Email info@genelex.com

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Genelex Corporation

3101 Western Ave., Suite 100
Seattle, WA 98121
www.youscript.com
1-800-523-3080

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U.S. POSTAGE
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NEW PHONE NUMBER

The Genelex main phone number has changed to:

800-523-3080

Albert Treskin
Albert Treskin Design
5269 Taylor Ave NE
Bainbridge Island, WA 98110