Iowa Institute for Human Genetics

Did you know that drugs do not work for 50 percent of people who are prescribed them? In fact, the FDA already recommends genotyping for 10 percent of drugs for which understanding the genotype can help predict which drug is the best for a patient.

As you can see from the statistic above, exponential growth in human genetics research is driving the ever-increasing application of genetics in day-to-day medical practice. Here at the University of Iowa, we are lucky enough to have the Iowa Institute of Human Genetics (IIHG) as a resource to promote clinical care, research, and education that focuses on the medical and scientific advances around the human genome.

Established in 2012, and led by Director Richard Smith, MD, the IIHG provides unprecedented opportunities to make progress in both the discovery and translational phases of human genetics. The institute also seeks to provide an interface for, and support of, university- and state-wide activities related to human genetics.

For example, in October, the IIHG launched a pharmacogenomic screen to identify people who do not respond to clopidogrel (Plavix®), a drug commonly prescribed to prevent blood clots. The test identifies people who do not metabolize clopidogrel due to DNA changes in the CYP2C19 gene, which puts them at increased risk of thrombosis and stroke.

Additionally, the IIHG is administering the testing at UI Hospitals and Clinics. Development of this test, spearheaded by IIHG Associate Director Anne Kwitek, PhD, involves a highly multidisciplinary team including the Clinical Diagnostics, Bioinformatics, and Genomics Divisions of the IIHG; EPIC application developers in Health Care Information Systems; and the Point of Service Laboratory in the Department of Pathology. Barry London, MD, PhD, leads the effort in implementing the test in the hospital’s cardiovascular clinics including the UI Heart and Vascular Center. The result of these efforts will be a test that is fully integrated into Epic, from identification of at-risk patients to ordering the test, incorporating results into the medical record, and providing alerts to warn the health care practitioner if a patient is a poor metabolizer. It will also supply educational material for interpretation. For more information, visit this website.

The IIHG truly exemplifies UI Health Care’s mission of pioneering discovery, innovative education, and superb clinical applications. My thanks to all involved—keep up the great work.

Jean Robillard, MD
Vice President for Medical Affairs