EDW Makes Research and Health Care Easier

After the Affordable Care Act was signed into law on March 23, 2010, many hospitals and health care providers scrambled to determine how to put health information into electronic medical records. Northwestern, on the other hand, was ready for the challenge.

Since 2007, the Feinberg School of Medicine, Northwestern Medical Faculty Foundation, and Northwestern Memorial Healthcare Corporation have contributed to the Northwestern Medicine™ Enterprise Data Warehouse (EDW), a joint initiative to create a single, comprehensive, and integrated repository of all clinical and research data on campus.

While the EDW was originally created to facilitate research, it has become an improved way to handle health care data. The federal government instated a program called “Meaningful Use” in 2009 that promotes the spread of electronic health records to improve health care in the United States. Northwestern Memorial was the first hospital in the nation to have its EDW certified for Meaningful Use reporting.

“Northwestern is a national leader in this area,” says Andrew Winter, director of the EDW. “After we were certified, our phones rang off the hook. We conducted webinars with roughly 100 of our peer institutions and hospitals to show them how we were handling the data for Meaningful Use.”

Meaningful Use will allow electronic medical records allow information to be shared more easily among doctors’ offices, hospitals, and across health systems, leading to better coordination of care.

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For example, sometimes a patient will walk into an emergency room and not remember the names of his/her medications. If the emergency doctors have access to the patient’s records, then they do not risk over-prescribing him/her or ordering unnecessary and costly tests.

“It gives providers seamless access to records for patient care,” Winter says. “This increases the level of care while reducing cost.”

The EDW contains more than 20 terabytes of data from more than 50 different source systems, including medical records, billing, financial, and human resources data. Investigators who want to access the EDW for projects can request an appointment for consultation online. The EDW team tries to respond within one week to all requests.

The EDW has a recharge rate of $70 per hour, with most requests taking between 8 and 12 hours of work. It also has a Pilot Data Program to provide financial assistance to investigators. Details can be found here.

Located on the 11th floor of the Rubloff Building in Chicago, the EDW has 11 data architects, three software developers, and six individuals supporting operations. The data architects feed data into the EDW and optimize it for analysts. The analysts move data out of the EDW and into the hands of the end user. And the operations individuals keeps the EDW running and safe. The EDW also has 100 “powerusers” who are able to login directly to the database and run queries.

Many EDW powerusers use the system to recruit patients for clinical studies or to complete research. By reviewing data from stroke patients treated at NMH, Andrew Naidech, neurology, studied which types of patients responded best to which treatments. What he found changed the course of treatments for stroke patients.

Sanjay Mehrotra, industrial engineering and management sciences, uses data sets from the EDW to create predictive models for health care. These data-driven methodologies examine evidence-based health care decisions under risk and uncertainty to improve quality of care and reduce cost and inequity.

Northwestern students have also benefited from the EDW. They have been able to access real data to mock up vignettes for research projects. For their Area of Scholarly Concentration (AoSC) projects, medical students engage in a four-year longitudinal research project that is complementary to their basic science and clinical training. The EDW provides the data for this work.

“Historically, research has not been included in medical education,” Winter says. “But learning how to research is really an important aspect of education.”

For more information about the EDW, visit https://edwapps.nmff.org/EDWPortal.

Center to Treat and Study Reproductive-Related Depression

Many women think nothing can be done about destabilizing bouts of depression caused by hormonal fluctuations.

Not so. Northwestern Medicine’s’ newly opened Asher Center for the Study and Treatment of Depressive Disorders will be focused on treating and studying women with depression.

It’s one of only a handful of centers focused on women of all ages who may be suffering from reproductive-related depression.

State-of-the art research will be integrated into clinical care to make sure that women with depression receive the care that they need.

“Women should not suffer in silence,” says Katherine L. Wisner, psychiatry and behavioral sciences and the director of the new center. “They can feel better. There are very good and effective treatments for depression and mood changes related to hormones.”

Unlike standard medical clinics, the center will store data on patients’ symptoms, medical and family history and collect biological samples for current and future research studies.

Common reproductive-related depression disorders in women that will be studied and treated at the new center include depression after first menstrual period, premenstrual dysphoric disorder (PMDD), depression during pregnancy, postpartum depression, and perimenopausal depression.

One in five women will have at least one episode of depression in their lifetimes and women are twice as likely as men to develop depression. Hormonal fluctuations that occur during reproductive milestones can contribute to depression in women and increase the risk for physiological destabilization, affecting functioning and health, both short- and long-term.

Katherine Wisner

Click here for more information about the new center.