



Bipolar Biobank Helps Identify At-Risk Patients for Early Intervention

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Although the genetic contribution to bipolar disorder has been unequivocally demonstrated, few specific genetic risk factors have been confirmed. The factors identified explain only a small proportion of the genetic contribution to bipolar disorder. The Mayo Clinic Center for Individualized Medicine's Biobank for Bipolar Disorder provides a resource for the bipolar research community working to confirm those risk factors and discover additional contributors to bipolar disorder susceptibility and response to treatment.

Primary research focuses on the identification of risk factors for development of bipolar disorder, including specific genetic variations. Researchers will also study factors that contribute to differences in response to various treatments. The identification of genetic risk factors associated with disease onset may lead to early treatment in at-risk patients. Early intervention is particularly important for people with bipolar disorder, for whom the initiation of treatment is often delayed by more than a decade when the disorder is misdiagnosed. People with the earliest onset of recurrent episodes of mania and depression generally experience the longest delays to first treatment and poor outcomes.

The biobank project is a multisite endeavor. Mayo Clinic in Rochester, Minnesota, serves as the primary location, but researchers from the University of Minnesota, Lindner Center of Hope in Cincinnati, Ohio, Mayo Clinic's Arizona and Florida

campuses, and Mayo Health System sites are contributing to the effort and will continue to collaborate following completion of infrastructure development in 2012. The large-scale biobank will collect biological samples and clinical data from 2,000 individuals between the ages of 18 and 65 years. Nearly 500 adults have been enrolled already.

"Studies of complex genetic traits require large, well-characterized sample collections," says Joanna M. Biernacka, PhD, a biostatistician and co-principal investigator for the project. Analyses aimed at identifying genomic risk factors for bipolar disorder and specific aspects of the illness such as response to different types of treatment will be undertaken once an adequately sized sample is available.

"This resource has the potential to identify the right treatment for the right patient at the right time," says Mark A. Frye, MD, a psychiatrist and co-principal investigator for the project. "Once we understand what factors predict how a person will respond to various treatments, personalized treatment options can be considered for patients with bipolar disorder." Identification of genomic predictors of treatment response may allow greater selectivity of treatment recommendations, as well as help prevent serious adverse events such as antidepressant-induced mania.

Biobank Expands to Include Children

Funding for an individualized medicine biobank for pediatric bipolar disorder was approved in May 2010. Several linked studies are planned. A study of children at risk for bipolar disease will include participants whose parents are included in the adult study. Additional participants will be recruited for the Pediatric Bipolar Biobank study, which focuses on children in whom bipolar disorder has already developed. Researchers will begin recruitment after the study protocol is approved.



Mark A. Frye, MD, Peter S. Jensen, MD, Joanna M. Biernacka, PhD, Christopher A. Wall, MD

The existence of bipolar disorder in children is controversial. "If a child receives several different diagnoses, parents become confused and remain concerned," says Peter S. Jensen, MD, a psychiatrist and primary investigator for the pediatric bipolar biobank study. The pediatric biobank will track crucial data, such as responses to medication, to allow investigators as well as parents of bipolar children to better understand the risks and benefits of various treatment options. "We are working to understand the biological commonalities in bipolar children. The pediatric bipolar biobank is an important step in that direction," says Dr Jensen.

Christopher A. Wall, MD, a psychiatrist and primary investigator for the study of children

at bipolar risk, notes that many parents realize that their own signs occurred and were trackable from their youth. "The parents' bipolar disorders may have been misdiagnosed. The children of affected parents have a 10-fold risk of inheriting bipolar disorder. If we identify gene sequences that may indicate pediatric onset, we can begin to provide treatment early and help prevent crises by monitoring signs over time," says Dr Wall.

Biobanking is becoming an increasingly important research tool at Mayo Clinic. Its biobank will consist of more than 20,000 Mayo Clinic patients and community members. "The success of this research," notes Dr Frye, "depends on seasoned clinicians, rigorous descriptions, and collaboration with other biobanks."

Mayo Clinic Expands Integrated Care in Primary and Specialty Practice



Mark D. Williams, MD, and Victor M. Montori, MD

More than half of behavioral medicine consultations at Mayo Clinic in Rochester, Minnesota, now occur in team-based or integrated practice settings. James R. Rundell, MD, cochief of the Consultation Division, Department of Psychiatry and Psychology, says that

studies suggest the team model produces considerably better outcomes and patient satisfaction than a single-care provider approach.

In 2008, the Rochester campus of Mayo Clinic was an initial rollout site for the Depression Improvement Across Minnesota, Offering a New Direction (DIAMOND) project. The Institute for Clinical Systems Improvement program currently involves nearly 290 primary care providers at 80 sites.

DIAMOND incorporates several processes to provide behavioral medicine consultations, including consistent patient assessment through use of the Patient Health Questionnaire (PHQ-9) and a registry that tracks patient response to treatment over time. Project participation also requires a stepped-care approach to medication and intensity of therapy, focus on relapse

prevention, and 2 provider roles: primary care manager and a liaison or consultative relationship with a psychiatrist.

Mark D. Williams, MD, a psychiatrist and principal investigator for DIAMOND project implementation at Mayo Clinic, says, "The translation of evidence-based practice into general care through consistent use of a measurement tool and an external registry allows us to fully assess patients in the context of their other health care concerns. Whatever treatment is chosen is monitored for effectiveness. We can maintain a record of their situation as it evolves. The registry also helps us monitor our entire clinic to measure depression remission rates over time."

The DIAMOND project includes a bundled model of payment for care. "Data are being gathered to assess the cost-offset of this model as it relates to returning individuals to work and reducing health care utilization costs. There is literature to predict that both indicators will improve," says Dr Williams.

Throughout Mayo Clinic, integrated care models in specialty settings vary depending on financial, logistical, and administrative factors. Behavioral medicine care providers may see patients as part of a coordinative mental health team or as members of a multispecialty, multidisciplinary team.

Dr Williams notes: "Before we incorporated

DIAMOND procedures, a patient might be identified as depressed in primary care, but the care provider would have trouble accessing the next step in the process. Now the primary care provider has the patient complete the PHQ-9. If the patient has moderate symptoms of what the physician believes to be major depression or dysthymia, the patient meets with a care manager—literally just down the hall—who screens for other mental health conditions and compiles all information to review with a psychiatrist. “Recommendations are tailored to the individual and may involve referral to therapy and/or medication or suggestions on healthy behaviors. Patients who need more attention are able to see a psychiatrist.

Depression Choice Study Explores Shared Decision Making

Victor M. Montori, MD, an endocrinologist and member of the Mayo Clinic Knowledge and Encounter Research Unit, is the primary investigator for new research focused on translating knowledge of the efficacy and safety of diabetes medicines into tools to involve patients in shared decision making about their treatment.

Dr Montori and his colleagues will use a

grant awarded by the Agency for Healthcare Research and Quality to study the extent to which patients’ participation in decision making can impact their depression care. “A new tool that can be used during the office visit will enable patients to participate in treatment discussions. It will let patients know the available and pertinent treatment options and how they differ on the basis of issues that patients consider important,” says Dr Montori.

Future Research

Dr Williams’s team will expand the DIAMOND project study to determine the best time and place to integrate the process into primary and specialty care and the measurement tool into the health care process. Notes Dr Rundell: “Collaborative care models can produce more efficient financial performance, reduced documentation costs with improved compliance, and higher patient and provider satisfaction. Integration in primary and specialty practice differs because specialty care is structured differently by departments, but outcomes are the same: patient and provider satisfaction are improved, as are some indicators of clinical outcomes.”

Field Trial

Mayo Clinic Participates in DSM-5 Field Trials

The American Psychiatric Association has announced field trials to test proposed diagnostic criteria for the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. Mayo Clinic Department of Psychiatry and Psychology in Rochester, Minnesota, has been named one of the large academic sites focusing on

- Bipolar disorder and bipolar disorder NOS
- Major and minor neurocognitive disorders
- Complex somatic symptom disorder

Field trial participants evaluate the feasibility, clinical utility, reliability, and validity of DSM-5 criteria to help assess the practical use of proposed DSM-5 criteria in real-world clinical setting.

Mayo’s DSM-5 Field Trial Work Group is lead by psychiatrists Mark A. Frye, MD, and Jeffrey P. Staab, MD, psychologist Glenn E. Smith, PhD, and 14 additional psychiatrists, psychologists, and research coordinators. “Mayo Clinic is honored to participate in field trials,” says Dr Staab. “The selection reflects Mayo’s commitment to medical research in the field of psychiatry and mental disorders.”

DSM-5 is scheduled for release in May 2013.

Mayo Clinic PsychUpdate

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Fifth Annual Psychiatric Pharmacogenomics

February 6-8, 2011, Kohala Coast, Big Island of Hawaii

Learn how to use new biotechnological tools that assist in the choice of the right medicine at the right dose for the right patient. Biotechnologies discussed include cytochrome P-450 testing and understanding the genes involved in the metabolic pathways of various psychotropic drugs.

Pain Medicine: A State-of-the-Art Course in Pain Management for the Non-Pain Specialist

February 28-March 4, 2011, Koloa, Kauai, Hawaii

Pain Medicine addresses the national and international movement toward improved pain control in acute, chronic, and cancer pain populations.

New in 2012 Psychiatry in Medical Practice

January 25-28, 2012, Phoenix/Scottsdale, Arizona

Psychiatry in Medical Practice is designed to educate primary care physicians in family practice, psychiatrists, and allied health professionals about the management of psychiatric conditions that present in patients cared for in inpatient and outpatient medical and surgical settings. Topic areas will include functional bowel disorders, dizziness, primary care integrated care delivery model development, behavioral spells, and health anxiety.

For detailed information about psychiatry, psychology, and social services continuing professional development courses offered by Mayo Clinic, visit <http://www.mayo.edu/cme/psychiatry-psychology-and-social-services>.



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