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## EMERALD Extends Collaborative Care Model to Adolescents With Depression

An innovative care team model at Mayo Clinic that includes a psychiatrist, registered nurse, behavioral health manager, and social worker is designed to help primary care physicians become more comfortable in identifying and diagnosing depression in adolescent patients and in managing their care.

In the Early Management and Evidence-Based Recognition of Adolescents Living With Depression (EMERALD) pilot program, a behavioral health manager acts as an integrated care coordinator, contacting the patient and the patient's family and primary care physician weekly and discussing the patient's progress with a child and adolescent psychiatrist, as determined by clinical status. The psychiatrist does not see the patient unless there is a need.

In the EMERALD model, a multidisciplinary team works with adolescents and those within

their support system to facilitate the following efforts:

- Monitor symptoms of depression
- Monitor medications and adverse effects
- Set behavioral activation goals
- Assist with internal and external referrals to wellness resources
- Develop a relapse prevention plan

EMERALD is based on the Depression Improvement Across Minnesota, Offering a New Direction (DIAMOND) collaborative care program for adults. Both EMERALD and DIAMOND translate evidence-based practice into general care through the consistent use of a measurement tool, the Patient Health Questionnaire for Adolescents (PHQ-A), and an external registry. These 2 components allow the team to accomplish the following:

- Assess patients in the context of their other health care concerns
- Monitor the effectiveness of the treatments chosen
- Maintain a record of each patient's depression as the situation evolves
- Monitor all participants to measure depression remission rates over time

John E. Huxsahl, MD, with the Department of Psychiatry and Psychology at Mayo Clinic in Rochester, Minnesota, and the principal investigator for EMERALD, notes, "This program provides resources that help primary care physicians provide effective care for their adolescent patients with depression. We're a support network. With our support, primary care physicians should feel comfortable providing treatment, and especially prescribing antidepressants, to their patients without the psychiatrist in the room."

Adolescent patients remain in the EMERALD program until their PHQ-A scores are less than 5 and are maintained at that level for 3 months. "Some patients reach that goal as early as 4 or 5 months," says Dr Huxsahl. "There is, however, a distinction between how long patients are in the program and how long they may continue to take

PHQ-9 modified for Adolescents (PHQ-A)				
Name: _____ Clinician: _____ Date: _____				
<b>Instructions:</b> How often have you been bothered by each of the following symptoms during the past <u>two weeks</u> ? For each symptom put an "X" in the box beneath the answer that best describes how you have been feeling.				
	(0) Not at all	(1) Several days	(2) More than half the days	(3) Nearly every day
1. Feeling down, depressed, irritable, or hopeless?				
2. Little interest or pleasure in doing things?				
3. Trouble falling asleep, staying asleep, or sleeping too much?				
4. Poor appetite, weight loss, or overeating?				
5. Feeling tired, or having little energy?				
6. Feeling bad about yourself – or feeling that you are a failure, or that you have let yourself or your family down?				
7. Trouble concentrating on things like school work, reading, or watching TV?				
8. Moving or speaking so slowly that other people could have noticed?  Or the opposite – being so fidgety or restless that you were moving around a lot more than usual?				
9. Thoughts that you would be better off dead, or of hurting yourself in some way?				
In the <u>past year</u> have you felt depressed or sad most days, even if you felt okay sometimes? <input type="checkbox"/> Yes <input type="checkbox"/> No				
If you are experiencing any of the problems on this form, how <u>difficult</u> have these problems made it for you to do your work, take care of things at home or get along with other people? <input type="checkbox"/> Not difficult at all <input type="checkbox"/> Somewhat difficult <input type="checkbox"/> Very difficult <input type="checkbox"/> Extremely difficult				
Has there been a time in the <u>past month</u> when you have had serious thoughts about ending your life? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Have you <u>EVER</u> , in your WHOLE LIFE, tried to kill yourself or made a suicide attempt? <input type="checkbox"/> Yes <input type="checkbox"/> No				
<i>*If you have had thoughts that you would be better off dead or of hurting yourself in some way, please discuss this with your Health Care Clinician, go to a hospital emergency room or call 911.</i>				
Office use only:		Severity score: _____		
Modified with permission from the PHQ (Spitzer, Williams & Kroenke, 1999) by J. Johnson (Johnson, 2002)				

## DIAMOND Offers Collaborative Model of Care for Adults With Depression

In 2008, Mayo Clinic was an initial rollout site for the Depression Improvement Across Minnesota, Offering a New Direction (DIAMOND) project. DIAMOND incorporates several processes to provide behavioral medicine consultations for adults, 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 requires a stepped-care approach to medication and the intensity of therapy, a focus on relapse prevention, and 2 provider roles: as a primary care manager and in a liaison or consultative relationship with a psychiatrist. DIAMOND also includes a bundled model of payment for care.

Read more about DIAMOND at [www.mayoclinic.org/medicalprofs/psych-integrated-care-in-primary-practice.html](http://www.mayoclinic.org/medicalprofs/psych-integrated-care-in-primary-practice.html).

## ECH Redesigns Primary Care to Create the Healthiest Workforce in America

The Early Management and Evidence-Based Recognition of Adolescents Living With Depression (EMERALD) model also has a role in the efforts of the Mayo Clinic Employee and Community Health (ECH) population health program, which aims to improve the management of chronic disease. ECH is committed to improving patient outcomes at comparable or lower overall cost and with improved access to treatments needed for the management of depression among adolescents.

ECH reorients the traditional, reactive acute care model to a planned care system. The cornerstone of the ECH care model is the certified health care home. All patients are assigned to a multidisciplinary care team that delivers the full scope of medical services and ensures ongoing medical responsibility for both preventive services and acute and chronic conditions.

medications prescribed by their primary care physicians.”

## Enrollment Increases, Program Expands

When the pilot program began in July 2011, 28 patients had been screened and 4 were enrolled. “Adolescents—or their parents—don’t always want to be seen for case management,” notes Dr Huxsahl. The program’s current active enrollment is 18 patients, with 2 more patients who are ready to participate. One patient has completed the program since July.

In 2012, the program will be expanded to involve all physicians in the Division of Community Pediatric and Adolescent Medicine at Mayo Clinic in Rochester and, eventually, physicians in the Department of Family Medicine. “We will continue to enroll patients under the current guidelines, with expansion into other Mayo specialties that see children in this age range,” says Dr Huxsahl. “The EMERALD program provides a format that will allow primary care physicians to be more skillful and comfortable in being able to both identify and treat kids with depressive illness.”



John E. Huxsahl, MD

## Meet the Chair: Mark A. Frye, MD, Leads the Department of Psychiatry and Psychology



Mark A. Frye, MD

Mark A. Frye, MD, was appointed chair of the Department of Psychiatry and Psychology at Mayo Clinic in Rochester, Minnesota, in December 2010. As department chair, Dr Frye promotes department-wide engagement to look at innovative ways to enhance the patient experience through integrated clinical practice, education, and research. “We have a diverse, talented team of psychiatrists, psychologists, and allied health staff who are really excited about their work,” says Dr Frye. “A consistently outstanding patient experience is an achievable goal.”

Dr Frye, who has been with Mayo Clinic since 2006, received his medical degree from the University of Minnesota and completed his psychiatric training at the University of California, Los Angeles (UCLA), Neuropsychiatric Institute. He completed a fellowship in the Biological Psychiatry Branch, National Institute of Mental Health, in Bethesda, Maryland, where his research focused

on the neurobiology of depression and bipolar disorder.

Dr Frye was the director of the UCLA Bipolar Disorder Research Program from 1998 to 2006, when he returned to Rochester, Minnesota, to join Mayo Clinic. He is currently a professor of psychiatry and the director of the Mayo Clinic Depression Center. Dr Frye’s clinical interests include bipolar disorder, depression, and alcoholism, with a translational focus on genomics and brain imaging.

As a result of Dr Frye’s efforts, Mayo Clinic has joined the National Network for Depression Centers (NNDC). “More than 20 of the strongest mood programs across the United States belong to NNDC,” notes Dr Frye. “Participation provides an incredible opportunity to standardize assessment, measure outcomes, and increase access and acceptability to patients who struggle with depression.”

# Pharmacogenomics May Change the Scope of Practice as It Relates to the Use of Antidepressants for Patients With Bipolar Disorder

It is a common and dangerous reaction: Patients with bipolar disorder are often depressed and so their physician prescribes antidepressants. Instead of the intended euthymia, however, the result is antidepressant-induced mania (AIM).

Joanna M. Biernacka, PhD, is a statistical geneticist and a co-principal investigator of the Mayo Clinic Individualized Medicine Biobank for Bipolar Disorder. While enrolling patients for a study of whether some persons with bipolar disorder are particularly disposed to a manic response to antidepressant treatment, she and her team of coinvestigators began to review the literature. "There isn't much available," notes Dr Biernacka. "Five previous pharmacogenomic studies (studies of how variations in the human genome affect response to medications) that examined the antidepressant-induced phenomenon in bipolar patients have limitations that impact the utility of their results." Those limitations include the following:

- Small sample sizes
- Lack of consistently defined AIM phenotype
- Use of various types of antidepressant medications
- No indication of whether mood stabilizers were used or rapid cycling occurred
- Failure to account for the ancestry of study participants, leading to possible confounding by population stratification
- Diagnoses and subtype patterns that may confound results

Dr Biernacka and her coinvestigators evaluated the evidence for association between the serotonin transporter gene promoter polymorphism (5HTTLPR) and AIM in "Pharmacogenomics and Antidepressant Induced Mania: A Review and Meta-analysis of the Serotonin

Transporter Gene (5HTTLPR) Association," published in the January 2012 issue of the *Journal of Affective Disorders* (136[1-2]:e21-e29). The study concluded that published data are insufficient to confirm an association between 5HTTLPR and AIM.

## New Study Will Use Biobank Data to Study Risk Factors and Predictors

Dr Biernacka's team plans to use the biobank data to study both the genetic risk factors for bipolar disorder and the genetic predictors that contribute to response to treatment, especially when that response is AIM. "The biobank has enrolled more than 800 of the 2,000 adults with bipolar disorder we hope will participate," notes Dr Biernacka. "For this study, we are collecting detailed information about treatments and response to treatments, plus blood samples. We've profiled prior studies. Now we'll expand on them to more fully understand AIM."

The identification of pharmacogenomic predictors of treatment response is expected to aid in the development of pharmacogenomically based treatment algorithms that will enhance outcome and reduce the occurrence of ineffective or suboptimal treatment trials.

"Genetic research will change medicine by helping us understand the complex sets of factors that contribute to treatment response," says Dr Biernacka. "Pharmacogenomic studies of AIM have very high potential clinical impact, provided that future studies are of adequate sample size and rigorously assess patient characteristics and phenotypes."



Joanna M. Biernacka, PhD

## Biobank Provides a Resource for the Bipolar Research Community

The Mayo Clinic Individualized Medicine Biobank for Bipolar Disorder is a resource for researchers working to confirm risk factors for bipolar disorder and to discover additional contributors to bipolar disorder susceptibility and response to treatment.

The biobank project is a multisite endeavor. Mayo Clinic in Rochester, Minnesota, serves as the primary location, and researchers at the University of Minnesota; Lindner Center of Hope in Cincinnati, Ohio; Mayo

Clinic in Arizona; Mayo Clinic in Florida; and Mayo Clinic Health System sites are contributing to the effort and will continue to collaborate after the completion of infrastructure development in 2012. The large-scale biobank is collecting biological samples and clinical data from 2,000 persons between age 18 and 65 years. Currently, more than 800 people are enrolled.

Read more about the bipolar biobank at [www.mayoclinic.org/medicalprofs/bipolar-biobank.html](http://www.mayoclinic.org/medicalprofs/bipolar-biobank.html).

**Medical Editor:**  
Barbara K. Bruce, PhD, LP

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## Contact Us

Mayo Clinic welcomes inquiries and referrals, and a request to a specific physician is not required to refer a patient.

**Arizona**  
866-629-6362

**Florida**  
800-634-1417

**Minnesota**  
800-533-1564

## Resources

[mayoclinic.org/medicalprofs](http://mayoclinic.org/medicalprofs)

- Clinical trials
- CME
- Grand Rounds
- Scientific videos
- Online referrals

## Positions Available

**Research Faculty Position, Neuroscience.** Mayo Clinic in Rochester, Minnesota, seeks an exceptional investigator to join psychiatric researchers at Mayo Clinic and the University of Minnesota. Focusing on understanding the biological basis of psychiatric disease, the incumbent will lead development of ground-breaking neuroscience research that can be evaluated in preclinical and early clinical trials for their potential in diagnosis and treatment. This position has access to cutting-edge molecular technology facilities, plus a clinical patient population primarily being treated for schizophrenia, bipolar disorder, and substance abuse.

To learn more, visit [www.mayoclinic.org/scientist-jobs/](http://www.mayoclinic.org/scientist-jobs/) and reference job posting number 7597BR.

**Child Clinical Psychologist.** Mayo Clinic in Rochester, Minnesota, seeks an outstanding child clinical psychologist with expertise in the assessment and treatment of children with autism spectrum disorders. Experience with autism spectrum assessment instruments (eg, Autism Diagnostic Observation Schedule, Autism Diagnostic Interview-Revised), as well as functional analysis, is desired. This is an exciting opportunity for an independent, forward thinker to build an autism program that includes research, clinical care, and the extensive research support that Mayo Clinic offers.

To learn more, visit [www.mayoclinic.org/physician-jobs/](http://www.mayoclinic.org/physician-jobs/) and access job posting number 192BR.

**Adult Mood Psychiatrist.** Mayo Clinic in Rochester, Minnesota, seeks an exceptional junior or mid-career clinician and researcher at the level of assistant professor or higher to join the psychiatric clinical practice at Mayo. The Mayo Clinic Integrated Mood Group is a multispecialty team providing expert consultation in treatment-resistant depression and bipolar disorder. Consultation and clinical practice are focused in the Mayo Mood Clinic's 2-week, outpatient-based partial program and 16-bed inpatient mood unit. The corresponding clinical research program is robust with clinical trials, brain imaging, and genomic research. The incumbent will focus on understanding the biological basis of mood disorders, to contribute to expert clinical consultation and ground-breaking neuroscience research.

To learn more, visit [www.mayoclinic.org/physician-jobs/](http://www.mayoclinic.org/physician-jobs/) and reference job posting number 7596BR.

## Upcoming Courses

For more information or to register for courses, visit <http://www.mayo.edu/cme/psychiatry-and-psychology>, call 800-323-2688 (toll-free), or e-mail [cme@mayo.edu](mailto:cme@mayo.edu).

### Windows Into Mood: Stories of Depression and Mania

May 12, 2012  
Guthrie Theater  
Minneapolis, Minnesota

### Psychiatric Genomics

August 9-11, 2012  
Rochester, Minnesota

### Borderline Personality Disorders

September 14, 2012  
Minneapolis, Minnesota

### Acute Care Psychiatry Clinical Review

October 18-20, 2012  
Swissôtel Chicago  
Chicago, Illinois

### Biological Frontiers of Addiction

Fall 2012  
Rochester, Minnesota  
Watch the Web site for details

### National Network of Depression Centers Conference

Fall 2012  
Rochester, Minnesota  
Watch the Web site for details

Watch the Web site for course details and updates or visit the Mayo Clinic Psychiatry and Psychology Continuing Medical Education (CME) on Facebook page at <http://www.facebook.com/search/results.php?q=psych+maya+clinic&init=quick&tas=0.8796411653470504#!/MayoClinicPsychCME>.

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MC7900-0112