Models Of Community, Research, And Policy Partnerships Needed To Impact Perinatal Mental Health Outcomes in the US

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Department of Behavioral Sciences and Social Medicine
Co-Director, FSU Center for Behavioral Health Integration
Leading causes of disease burden in the world; Lancet 2016

<table>
<thead>
<tr>
<th>Cause</th>
<th>% of DALYs accounted for:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Cardiovascular disease</td>
<td>13.5%</td>
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<tr>
<td>2. Mental Illness</td>
<td>11.2%</td>
</tr>
<tr>
<td>3. Common Infections</td>
<td>10.2%</td>
</tr>
<tr>
<td>4. Cancer</td>
<td>8.1%</td>
</tr>
</tbody>
</table>
Depression & Childbearing Prevalence

Depression in Pregnancy 14%¹
Postpartum Depression 10%-15%, cross-culturally²
Postpartum Blues 50%-85%³
Postpartum Psychosis 1-2/1000³

Impact of Antenatal Depression on Health and Functioning of Mother and Infant

Low birth weight, premature delivery, and small for gestational age infants (Steer et al., 1992; Kelly et al. 2002, Hoffman et al., 2000)

Weight loss associated with depression-fetal growth (Wisner et al. 1999)

Pre-eclampsia (Kurki et al, 2000)

Elevated cortisol, reduced dopamine in neonates (Lundy et al., 1999)

Increased fetal activity and infant neurobehavioral dysregulation (Field et al., 2006; Dieter et al., 2001)

Inadequate prenatal care (Kelly et al., 1999)

Risk for postpartum depression (Beck, 2001)
Postnatal and Maternal Depression has been found to relate to:

- less affectionate and responsive to infant cues (Broth, Goodman, Hall, Raynor, 2004)
- problems with breastfeeding (Field, Hernandez-Reif, & Feijo, 2002)
- Infant irritability (Zuckerman et al., 1990)
- delayed linguistic and cognitive development (Alpern & Lyons-Ruth, 1993; Leadbeater & Bishop, 1994)
- conduct and substance abuse problems (Downey & Coyne, 1990; Bearslee & Wheelock, 1994)
- inadequate preventive care (Leifferman, 2002)
- greater use of Pediatric ED and missed outpatient pediatric appointments (Flynn et al, 2004)
Prenatal Maternal Health Programs Genetic Expression of Children and sets pathway of lifelong health

Maternal Mental Health / Stress

Epigenetic changes in placenta

Immune

Inflammatory

Metabolic

Stress system (HPA Axis)

Child health outcomes (cardiovascular, neurodevelopmental, respiratory, behavioral)
The problem: Prevalence and burden of perinatal mental health remains largely unchanged

Most women do not get detected or treated
Many receive inadequate treatment
Treatment outcomes remain a problem

Acceptable interventions and models of care do exist but are not widely available, paid for, or used
Problem: Continued

- The US has seen little translation of perinatal mental health findings to clinical care, policies and vital outcomes in most communities.
- Dissemination of research has been limited in part due to lack of coordination among researchers and between researchers and policy-makers.
The mission of the FSU Center for Behavioral Health Integration is to strengthen the capacity of the College of Medicine to serve as an innovation leader for the state by leading and conducting research, clinical and policy programming and education/training related to behavioral health. Center activities emphasize primary care and behavioral health care-related policy, research, and data center for the state, health plans, providers and other organizations to provide guidance for the integration of behavioral with primary care services. The overall goal is to significantly improve outcome associated with under-addressed behavioral health disorders in Florida and nationally.

In order to achieve its mission, the Center enhances collaboration with other professions interested in integrated health care; identify and promote the use of best practices for integrating health care services; improve clinician training; improve data integration and analytics; and provide assistance to Florida’s health care providers in integrating health care.
Forming and leveraging stakeholder and research partnerships to enhance impact

1. Local MMH Coalition
2. Statewide MMH Collaborative
3. National Research Network
Local efforts to partner toward improved perinatal MH outcomes: The Leon Country Maternal Mental Health Coalition

• Formed in 2014
• Consists of 21 members; quarterly meetings

The Mission is to facilitate community collaboration and to serve as a forum for the exchange of ideas, information and resources to help identify and treat women with depression by linking them to quality services and treatment while supporting research that leads to community awareness, education, action and outcomes, including poor infant outcomes.
Relationships built with several agencies and organizations

Healthy Start Coalition
Whole Child Leon
North Florida Women’s Care
NAMI Tallahassee
Big Bend Mental Health Coalition
Parents, and Community Together (PACT)
Capital Area Infant Mental Health Coalition
Tallahassee Memorial Health
Apalachee Center
Florida Health Equity Research Institute
Big Bend 211
Florida Department of Health
Florida Department of Children and Families
<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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</thead>
<tbody>
<tr>
<td>Dr. Janet Bard-Hanson</td>
<td>211 Big Bend</td>
</tr>
<tr>
<td>Dr. Jay Reeve</td>
<td>Apalachee Center</td>
</tr>
<tr>
<td>Sharon Ross– Donaldson</td>
<td>The Center for Health Equity</td>
</tr>
<tr>
<td>Dr. Joedrecka Brown</td>
<td>FSU COM</td>
</tr>
<tr>
<td>Claudia Blackburn</td>
<td>Florida Department of Health &amp; FSU COM</td>
</tr>
<tr>
<td>Debra Danforth</td>
<td>FSU COM</td>
</tr>
<tr>
<td>Marie Bryant</td>
<td>South City Neighborhood Association/ Whole Child Leon</td>
</tr>
<tr>
<td>Dr. Karla Schmitt</td>
<td>Nursing and Public Health</td>
</tr>
<tr>
<td>Kyle Crews</td>
<td>Health Information Exchange Networks</td>
</tr>
<tr>
<td>Pat Stephens</td>
<td>National Alliance on Mental Illness</td>
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<tr>
<td>Erin Ryals</td>
<td>North Florida Women’s Care</td>
</tr>
<tr>
<td>Catherine Munroe</td>
<td>Patient Representative &amp; Apalachee Center</td>
</tr>
<tr>
<td>Connie Styons</td>
<td>Tallahassee Memorial Women’s Pavilion</td>
</tr>
<tr>
<td>Courtney Atkins</td>
<td>Whole Child Leon</td>
</tr>
<tr>
<td>Megan Deichen</td>
<td>Social Work, Doctoral Student</td>
</tr>
<tr>
<td>Sandy Glazer</td>
<td>Capital Area Healthy Start</td>
</tr>
<tr>
<td>Bill Hambsh</td>
<td>North Florida Women’s Care</td>
</tr>
<tr>
<td>Kellie Mercer</td>
<td>Capital Regional Behavioral Health</td>
</tr>
<tr>
<td>Amy Kimmel</td>
<td>Doula and patient representative</td>
</tr>
<tr>
<td>Jennifer Beaupied</td>
<td>TPCA Behavioral Health Counseling</td>
</tr>
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Example of community engagement towards action (n=300)

1) Education / Training / Outreach
2) Services / Resources
3) Research

What are the most important gaps / problems in addressing perinatal depression?

What are possible, doable solutions?
Maternal Mental Health Gaps: Themes Identified from Community and Focus of the Coalition

Education, Training, Professional Development
  Awareness / Combat stigma
  Perinatal Mental Health Training for front-line professionals
  Evidence-based treatment capacity for providers

Clinical Services
  Improved screening, linkage and care coordination
  Continuity of care, system of care
  Focus on maternal health in child settings

Research
  Improving technological interventions
  Best practice models of care - implementation
  Testing personalized interventions
Summary of MMHAB Accomplishments

Education/ training

• Hosted open community awareness meetings
• Participation in all relevant local conferences
• Evidence-based treatment presentations at Clinical centers
• Creation of fact sheets for patients and providers
• Creation of toolkit for women and providers
• Reaching out to health professions at FSU (Nursing, Medicine, Psychology, Social Work)
• Planning trainings for community at various levels (awareness, clinical skills)
Summary of MMHAB Accomplishments

Research
- Submitted several state and federal grants
- Pilot study in 6 obstetrics sites completed
- Database capacity established
- Standard research screening tool (n=4,000) piloted in Florida and Nationally in 8 women’s health sites
- FSU joined the National Network of Depression Centers
- NIMH grant submitted with Whole Child Leon
The ACTNOW study is meant to be an exploratory research project to test an electronic screening tool to determine whether it can increase the rate of screening and access to treatment for female patients in the primary care setting.
Tell Us About Yourself
Are you Hispanic / Latino (a)?
- Yes
- No

What is your race or ethnic identity?
- White or Caucasian

You're almost done. Just a few more questions...
What are the major influences on your mood currently? (Check all that apply)
- Feeling alone, not enough support
- Significant anxiety
- Significant stress with basic needs such as housing, food, transportation
- Conflict / communication with partner; significant other
- Recent loss
- Not being able to do things that make you feel better
- Very poor sleep most nights
- Cannot identify anything specific

How can your prenatal care clinician be of most help to you as far as your mood, stress, emotional health?

Patient Profile
Ms. Melissa Fine is a HIGH RISK for perinatal depression based on:
- History of depression or anxiety disorder
- A score of moderate to severe for range of current symptoms
- On the item "Thinking that you would be better off dead or that you want to hurt yourself in some way," she indicated: More than half the days

Recommendations
Based on the high risk level for Ms. Melissa Fine, consider the following treatments:
- Treatment is indicated; either anti-depressant, psychotherapy, or both.

Survey Responses
- Health Insurance:
  - A private health insurance plan (from employer or workplace; purchased directly; through a state or local government program or community program)

- Major contributors to mood:
  - Significant anxiety
  - Significant stress with basic needs such as housing, food, transportation
  - Very poor sleep most nights

- Kind of help she stated that she needs / prefers:
  - I would like to talk with other women with similar stressors
  - I would like to learn how to relax my mind / body

Finish
Conclusions

The tool was practical to administer in a primary care setting, easy for patients to understand and clinicians were satisfied.

The tool detected expected rates of depression, anxiety and low rates of treatment use.

Common influences on mood included problems with sleep and relaxation.

Treatment preferences were largely behavioral.
Summary of MMHAB Accomplishments

Clinical / Service
• Created Online mental health resource list
  www.med.fsu.edu/mentalhealth
• Maternal depression screening added to developmental screening days
• Training in treatment engagement for healthy start
• Creating local chapter of Postpartum Support International
• Completed survey of services / capacity among partners
• May – Maternal Mental Health Month
Creation and dissemination of MMH Toolkit

www.mothersmentalhealth.org
Action Plan

Evaluate

Engage

Expand

Educate
Mental Health

- Mental health rates in the region are at or slightly above national prevalence estimates.
- Utilization of mental health services appears lower than national rates.
- Mental health and need for quality treatment is a significant concern among residents.
- Clear need for better coordination of primary care and mental health specialists.
- Psychiatric prescribers are particularly challenging to access.
- Need to engage residents of underserved neighborhoods to determine best way to access services.
The Florida Maternal Mental Health Collaborative (FLMMHC): Mission and Vision
Co-Chairs: Heather Flynn, Lauren DePaola, Lina Acosta Saandal

**Mission**: The Florida Maternal Mental Health (MMH) Collaborative brings together statewide partners to close the critical gaps in perinatal mental health education, policy, prevention, treatment, and outcomes for women and their families.

**Vision**: Every woman in Florida and her family will receive the help and support they need for optimal maternal mental health and well-being.
FLMMHC Workgroups

1. Research
2. Policy
3. Community Awareness / Advocacy
4. Clinical and Service Capacity / Training / Education
FLMMHC Goals

1. To increase statewide awareness of perinatal mental health as an underserved medical issue and to eliminate stigma surrounding mental health.

2. To improve statewide capacity to treat perinatal mental health and substance abuse with accessible and evidence-based treatments, and to improve payment for services, coordination of care among health and service professionals.

3. To ensure that an array of health professionals have the education and training to effectively screen, treat, and manage perinatal mental health conditions.

4. To advocate for improved maternal mental health and substance abuse outcomes at the policy and individual level.

5. To target efforts specifically for vulnerable groups of women and families (e.g., Medicaid, low income) to ensure that women and their families receive culturally tailored support and resources to address holistic and psychosocial needs.
## FLMMH Collaborative Steering Committee

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
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<tbody>
<tr>
<td>Carol Brady</td>
<td>Florida Association for Healthy Start Coalitions</td>
</tr>
<tr>
<td>Sarah Checcone, Esq</td>
<td>Postpartum Society of Florida</td>
</tr>
<tr>
<td>Elicia Coley</td>
<td>Agency for Health Care Administration (Quality Bureau)</td>
</tr>
<tr>
<td>Isadora Delvecchio</td>
<td>March of Dimes</td>
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<tr>
<td>Maureen Fura</td>
<td>Advocate</td>
</tr>
<tr>
<td>Ute Gazioch</td>
<td>Florida Department of Children and Families</td>
</tr>
<tr>
<td>Mimi Graham, EdD</td>
<td>FSU Center for Prevention and Early Intervention Policy</td>
</tr>
<tr>
<td>Karen Harris, MD</td>
<td>ACOG District XII Chair</td>
</tr>
<tr>
<td>Mary Beth Jones MD</td>
<td>Agency for Health Care Administration (Quality Bureau)</td>
</tr>
<tr>
<td>Brian Kirk</td>
<td>March of Dimes</td>
</tr>
<tr>
<td>Alma Littles, MD</td>
<td>FSU College of Medicine and Florida Medical Association</td>
</tr>
<tr>
<td>Dixie Morgese</td>
<td>Healthy Start Coalition of Flagler and Volusia Counties</td>
</tr>
<tr>
<td>Jennifer Moyer</td>
<td>Advocate</td>
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<tr>
<td>D. Jeffrey Newport, MD</td>
<td>University of Miami Miller School of Medicine</td>
</tr>
<tr>
<td>Name</td>
<td>Position/Role</td>
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<tr>
<td>Celeste Philip, MD</td>
<td>Surgeon General and Secretary of the Florida Department of Health</td>
</tr>
<tr>
<td>Sharon Ross-Donaldson, LCSW</td>
<td>The Center for Health Equity, Inc.</td>
</tr>
<tr>
<td>Kay Roussos-Ross, MD</td>
<td>University of Florida</td>
</tr>
<tr>
<td>Tommy Schechtman, MD, MSPH</td>
<td>Past President Florida Chapter of the American Academy of Pediatrics</td>
</tr>
<tr>
<td>Kelly Sciba</td>
<td>Executive Director Florida Commission on the Status of Women</td>
</tr>
<tr>
<td>Leisa Stanley, PhD</td>
<td>Healthy Start Coalition of Hillsborough County</td>
</tr>
<tr>
<td>Fatimah Tahil, MD, MPH</td>
<td>Amerigroup Florida</td>
</tr>
<tr>
<td>Erica Floyd Thomas</td>
<td>Agency for Health Care Administration</td>
</tr>
<tr>
<td>Maureen Whelihan, MD</td>
<td>ACOG District XII State Legislative Chair and Section 5 Chair</td>
</tr>
<tr>
<td>Melanie Brown Woofter</td>
<td>Interim President/CEO, Florida Council for Community Mental Health</td>
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FLMMHC Selected Accomplishments

• Three statewide perinatal mental health conferences
• Targeted media campaign for lawmakers
• Introduction of SB 138: Florida Families First Act
• Hundreds of members throughout Florida
• Creating statewide resource/referral directory
• Submitted $3.2 million HRSA grant with FLDOH to build statewide perinatal programming to Florida

https://www.flmomsmatter.org/
The need for network-based research: What can we learn from other illnesses / conditions?

We have seen a 63% reduction in deaths from heart disease over 4 decades, a 90% reduction in death rates from the most common childhood cancers, and the official relabeling of HIV and some cancers as “chronic disease”

Risk factors for CVD have been identified and used for prevention and personalized treatment – standard assessment of metrics

Slow translation from research to practice – reverse this – Learning healthcare systems (IOM)

Give more people today yesterdays treatments?
Women and Mood Disorders Network

Emory University
Sherryl Goodman, Ph.D.
Diana Simeonova, Ph.D.

Florida State University
Heather Flynn, Ph.D.
Shermeeka Hogans-Mathews, MD

Harvard – Brigham and Women’s
Geena Athappilly, M.D.
Jill Goldstein, Ph.D.
Florina Haimovici, M.D.

Harvard – Massachusetts General
Hadine Joffe, M.D., M.Sc.

Johns Hopkins University
Jennifer Payne, M.D.
Mary Kimmel, M.D.

Michigan State
University/PineRest
Megan Zambiasi, M.A., L.L.P., L.P.C.

MUSC
Constance Guille, M.D.

Mayo Clinic
Katherine Moore, M.D.
William Bobo, M.D., M.P.H. (JAX)

Ohio State University
Lisa Christian, Ph.D.
Tamar Gur, M.D.

Stanford University
Natalie Rasgon, M.D., Ph.D.
Katherine Williams, M.D.
Heather Kenna, M.A.

University of California, San Francisco
Patrick Finley, Pharm. D.
Sandra Weiss, Ph.D., DNSc.
Ellen Haller, M.D.

University of Cincinnati & Lindner Center of HOPE
Robert Ammerman, Ph.D., A.D.P.P.
Julie Hyman, M.D.
Danielle Johnson, M.D.

University of Colorado
Sona Dimidjian, Ph.D.
Cheryl Chessick, MD

University of Colorado at Chicago
Pauline Maki, Ph.D.
Leah Rubin, Ph.D.
Jennifer Duffecy, Ph.D.
Vesna Pirec, M.D., Ph.D.

University of Iowa
Scott Stuart, M.D.
Hristina Koleva, M.D.

University of Louisiana
Casia Horseman, M.D.

UMASS
Kristina Deligiannidis, M.D.
Nancy Byatt, M.D.

University of Michigan
Sheila Marcus, M.D.
Kate Rosenblum, Ph.D.
Maria Muzik, M.D.
Cathie Spino, Ph.D.

University of Minnesota
Helen Kim, M.D.
Mary Kimmel, Ph.D.

University of Pennsylvania
Neil I Epperson, M.D.
Lisa Hantsoo, Ph.D.

University of Texas - Houston
Giovana Zunta-Soares, M.D.
Isabelle Bauer, Ph.D.
Sudhakar Selvaraj, M.D., Ph.D.

University of Washington
Nancy Grote, Ph.D.

VA Commonwealth University
Susan Kornstein, M.D.
The Women & Mood Disorders (W&MD) Task Group: Goals Overview

**Near term goal:** To build a research network infrastructure and specifically to establish, develop and demonstrate collaborative research capacity. The first step is a focused research agenda that may be strengthened by the diversity and interdisciplinary nature of the group.

W&MD Research Agenda based on (1) clear gaps in knowledge, (2) high public health importance and (3) need for a network-based approach.

**Longer term goal:** We will be a national resource for research on women’s depression and sex differences and will serve the community through education, research and improvements in clinical care and influence on public policy.
Brief W&MD Accomplishments

• numerous presentations at scientific conferences
• four publications
• two funded NIH grants, and two additional grants under review
• Recently completed Phase I of a pilot aimed to demonstrate the feasibility of utilizing standard assessment of mood and related clinical factors across multiple sites and settings
<table>
<thead>
<tr>
<th>Institution</th>
<th>Setting</th>
<th>Data Collection Process*</th>
<th>Sample Size (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Michigan</td>
<td>Obstetrics</td>
<td>Clinicians administered</td>
<td>67 (5%)</td>
</tr>
<tr>
<td>UMASS</td>
<td>Reproductive Psychiatry Clinic</td>
<td>Clinicians administered</td>
<td>159 (12%)</td>
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<tr>
<td>University of Pennsylvania</td>
<td>Reproductive Psychiatry Clinic</td>
<td>Clinicians administered</td>
<td>46  (3%)</td>
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<tr>
<td>Florida State University</td>
<td>Obstetrics and Gynecology Clinic</td>
<td>Research staff administered</td>
<td>596 (45%)</td>
</tr>
<tr>
<td>MUSC</td>
<td>Obstetrics and Gynecology Clinic</td>
<td>Clinicians administered and research staff collected</td>
<td>356 (27%)</td>
</tr>
<tr>
<td>UIC</td>
<td>Women’s Health Outpatient Clinic</td>
<td>Research staff administered</td>
<td>49  (4%)</td>
</tr>
<tr>
<td>UCSF</td>
<td>Neonatal Intensive Care/Obstetrics</td>
<td>Research staff administered</td>
<td>60  (5%)</td>
</tr>
<tr>
<td>Variable</td>
<td>%</td>
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<td>----------------------------------------------</td>
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</tr>
<tr>
<td>Lifetime history of depression</td>
<td>46%</td>
<td></td>
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<tr>
<td>PHQ9 $\geq 10$</td>
<td>14%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAD7 $\geq 10$</td>
<td>15%</td>
<td></td>
<td></td>
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<tr>
<td>Ever diagnosed with depression</td>
<td>31%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ever diagnosed with anxiety</td>
<td>24%</td>
<td></td>
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<tr>
<td>Most common symptoms of depression</td>
<td>tired/little energy, trouble sleeping, and poor appetite/overeating</td>
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</tr>
<tr>
<td>Most common symptoms of anxiety</td>
<td>becoming easily annoyed/irritable, worrying too much, and feeling nervous or on edge</td>
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Overall Goals

Test the feasibility and utility of a revised screening questionnaire that can be used for network-based grants

Examine preliminary research questions that can enhance progress in the field

Enable further mining of the data based on research interests of specific investigators
Examples of Research Questions to be Answered with Core Questionnaire

Do the prevalence of symptoms or symptom profiles of women differ across age groups or reproductive stages?

How are women’s history of mental illness, their treatment history, or their sociodemographic context associated with potentially different symptom profiles?

Do symptom profiles differ across the clinical settings where women are being seen?
14 Participating Sites

University of Pennsylvania
Emory
University of Texas
University of Michigan
Mayo Clinic
University of California, San Francisco
Medical University of South Carolina
University of Iowa
University of Massachusetts
Florida State University
Ohio State University
Hofstra Northwell Health, NY
Virginia Commonwealth
Brigham & Women’s Hospital
CDC Development of a Statewide Opioid overdose prevention program in Florida: submitted by FLDOH –; $1.5 million 9/18-8/21 - Submitted 5/15/2018

NIMH Development of a personalized navigation model to improve rapid pediatric behavioral health care engagement total requested $ 659,500 dates 4/19-3/22. Submitted June 2018

Sage Pharmaceuticals: Development of a Statewide Maternal Mental Health Resource Directory in Florida request $113,055 – one year project. Submitted 7/17/2018

HRSA Development Of A Sustainable Screening And Treatment Model To Improve Maternal Mental Health Outcomes In Florida 9/18-9/23 - $1.5 million submitted 8/2/2018

FLDOH Florida Research Program to Improve Tobacco and Substance use total requested: $499,985 submitted 8/8/2018

CDC RFQ Clinical Decision Support Integration for Opioid Misuse in Healthcare Settings. Submitted Aug 2018
Pending:
FLDOH. Implementation of Pediatric Behavioral Health Integration. Amount requested = $285,000 year 1 (2 years requested)

Funded:
NIMH R21 (Hajcak, PI) EEG correlates of reward in pregnancy.

National Network of Depression Centers- Pilot Grant