A Program for Adolescents and Young Adults

Kristin Cadenhead, MD
Director and Principle Investigator

UCSD
CARE Program Overview

- **Research**: Established as a research, consultation and referral program in 1999 for young people in the early stages of psychosis.

- **Treatment program**: established in 2013, integrates clinical research and evidence based medicine in the treatment of early psychosis.

- **Physical Location**: The CARE Early Psychosis Treatment program is co-located with the research laboratory of Dr. Kristin Cadenhead on the 4th floor of the UCSD Outpatient Psychiatry facility in Hillcrest.
Early Identification, Targeted Intervention and the Hope for Prevention in Early Psychosis
Prevention

Prediction

Mechanisms of Onset

Intervention
Clinical High-Risk Paradigm

- Clinical high-risk criteria designed to capture population at risk of imminent onset
- Rates of conversion to full psychosis
  - 15% by 1 year
  - 30% by 2 years
- Diagnostic outcomes
  - ~80% schizophrenia spectrum
  - ~20% mood and atypical psychoses

---

**Figure 4.** Meta-analysis of transition risk in studies reporting Kaplan-Meier estimates of psychosis transition over time in the high-risk state (n=984 individuals) (for details of the study, see Fusar-Poli et al[19]). These risks are based on treated cohorts with no standardized treatment, so transition rate estimates are not for natural course or untreated cases.

Fusar-Poli et al. *JAMA Psychiatry* 2013;70:107-120
Nomogram for predicting 2-yr probability of freedom from conversion to psychosis

Points

Patient's age (Years)

Number of items completed on Digit Symbol Substitution test

Number of items retrieved during 3 learning trials of Hopkins Verbal Learning Test

# of undesirable, stressful life events on life events scale

Sum of SIPS ratings for unusual though content (P1) and suspiciousness (P2)

# of traumatic events on trauma/bullying scale

GFS DECLINE_PAST_YEAR (GENETIC_RISK=no)

GFS DECLINE_PAST_YEAR (GENETIC_RISK=yes)

Total Points

2-year probability of freedom from conversion to psychosis
**Suspected Coronary Artery Disease**
Predicting Long-Term Survival (for suspected patients with a normal electrocardiogram)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>80</td>
</tr>
<tr>
<td>Male?</td>
<td>Yes</td>
</tr>
<tr>
<td>Typical Angina Pectoris?</td>
<td>Yes</td>
</tr>
<tr>
<td>Test-Induced Angina Pectoris?</td>
<td>No</td>
</tr>
<tr>
<td>Diabetic?</td>
<td>No</td>
</tr>
<tr>
<td>History of Smoking?</td>
<td>Yes</td>
</tr>
<tr>
<td>Hypertension?</td>
<td>No</td>
</tr>
<tr>
<td>Proportion of Predicted METs Achieved</td>
<td>8</td>
</tr>
<tr>
<td>ST-Segment Depression (mm)</td>
<td>1.5</td>
</tr>
<tr>
<td>Abnormal Heart Rate Recovery</td>
<td>Yes</td>
</tr>
<tr>
<td>Frequent Ventricular Ectopy during Recovery</td>
<td>No</td>
</tr>
</tbody>
</table>

10-Year Survival Percentage

**97%**
Biomarkers – Prediction, Mechanism, Personalization

- Neuroimaging (Structural, Functional, DTI, MRS)
- Electrophysiology (MMN, P300, Startle, LTP)
- Neuroendocrine (Cortisol)
- Inflammation/Oxidative Stress
- Neurocognition
- Genetic (DNA, Gene Expression)
New Studies

- **“NAPLS3”** - Predictors and Mechanisms of Conversion to Psychosis. MH081944-06 (R01) *(Cadenhead, PI)* 10/1/14-9/30/19.

- **“ReGroup”** - Cognitive Behavioral Social Skills Training for Youth at Risk of Psychosis. MH105243-01(R01) *(Cadenhead, PI)* 10/1/14-9/30/19

- **“Progresa”** Compensatory Cognitive Training in Clinical High Risk Latino Youth. MH105247-01 (R34) *(Cadenhead, PI)* 10/1/14-9/30/17

- **Inflammatory Biomarkers in First Episode Psychosis: A Mexico/US Collaboration.** MH102374-01(R21) *(Cadenhead, PI)* 5/1/14-4/30/16
Pilot Studies

- Mindfulness based therapy in early psychosis
- Mu Suppression and Mirror Neuron Circuitry in Early Psychosis
- Neurofeedback in Early Psychosis
- Metabolic measures as predictors of early psychosis
- Visual Contrast Sensitivity in the Prodrome and First Episode of Psychosis
- Duration of Untreated Psychosis
- Co-morbidity of OCD with Prodromal Symptoms
- Cortical Thickness and Neurotoxicity in First Episode
Cognitive Assessment and Recovery Enhancement Early Psychosis Treatment Program
Problem

- **Incidence of Psychotic Disorders**
  - 50/100,000 new cases of psychosis in the US
  - 15/100,000 new cases of schizophrenia per year in the US
  - 1500 new psychosis cases/yr in San Diego County

- **Prevalence of Psychotic Disorders**
  - 30/1000 diagnosed with a psychotic disorder in the US
  - 7.2/1000 diagnosed with schizophrenia in the US
  - **San Diego County: 21K schizophrenia, 90K psychosis**

- **Concerns:**
  - Duration of Untreated Psychosis is 1-2 years in most studies
  - Significant cause of lifetime disability in young adult population
  - Early intervention can improve prognosis, reduce costs
  - **Effective Psychosocial/Pharmacologic Treatment models are not readily available for all patients in Southern California**
Solution

- UCSD CARE program
  - Comprehensive Assessments and Consultation, Psychosocial Treatments, Pharmacologic Management
- IOP located in shared research space 140 Arbor
  - Prevent hospitalization or as a step down from inpatient
- Staff: Expertise in Psychotic disorders, Psychologists, Psychiatrists, Social Workers, Psychometrists
- Coordination with Inpatient at UCSD and Children’s
  - Family intervention and psychoeducation can bridge inpatient and outpatient services
- Coordination of care with clinicians in the community who already refer patients for evaluation, research and consultation.
International Integrated Programs for Psychosis

- **EPPIC (Australia)**
  - Emphasis on early detection, low-dose antipsychotic medications, a less restrictive environment, and psychological intervention
  - Symptomatic Remission observed in 37%-59% of the cohort.

- **OPUS (Denmark)**
  - Integrated treatment with 2 years of specialized, enhanced service
  - Patients in integrated treatment had 3X as many contacts than those in standard care, perceived reduction in family burden and reported less substance use than those in standard care.

- **LEO (London)**
  - Community outreach with psychosocial interventions
  - Compared to standard care there were fewer hospital re-admissions, relapses and treatment drop-outs
First Episode Programs in the US/Canada

- EDAPT (Early Diagnosis and Preventive Treatment) Sacramento
- OASIS – UNC Chapel Hill
- First Episode and Early Psychosis Program (FEPP) and Prevention and Recovery in Early Psychosis (PREP) at Massachusetts General Hospital.
- First Episode Clinic - Maryland Psychiatric Research Center at University of Maryland School of Medicine.
- First Episode Psychosis Program at the University of Illinois Medical Center at Chicago
- Specialized Treatment Early in Psychosis (STEP) Yale University
- First Episode Psychosis Program University of Minnesota
- The Toronto First Episode Psychosis Program
- Early Psychosis Intervention Program British Columbia
- RAISE (Recovery After an Initial Schizophrenia Episode) – Multisite NIMH funded community clinics
OASIS (UNC Chapel Hill)

- Clinic Configuration: 70% insured, 20% indigent, 10% self pay
- Budget: 500K - Revenue: 350K plus 200K through state funds
  - 0.4 Administrator
  - 0.6 FTE Family therapist
  - 2 FTE Therapists
  - 1.8 FTE Psychiatrists
  - 0.5 FTE Administrative Assistant
  - 0.25 FTE Nursing Assistant
  - 0.25 Computer support
  - rent, utilities, copier costs, etc
- Clinicians average 25 billable hours/week

- Psychotherapy (CBTSST, stress reactivity, mindfulness, Functional Support, Supported employment/education)
- Psychoeducation
- Family therapy and multifamily groups
- Medication management
- Contracted case management
- Faculty provide services for individual payment
PREP Clinic (Harvard)

- Clinic Configuration: ~50 young adults (age 16-30)
- Budget: 560K (supported by Department of Mental Health)
  - 0.5 Administrator
  - 2.0 FTE Therapists
  - 0.5 FTE Psychiatrist/Medical director adult and adolescent
  - 1.8 FTE clinical social worker
  - 1.0 FTE Psychologist
  - 0.75 FTE Advanced practice psychiatric nurse
  - 1.0 FTE milieu workers
  - 0.5 FTE Peer receptionist
  - Residents, psychology trainees social work intern

- Twice weekly group therapy
- Family education, treatment and support
- Preventive physical health and self-care
- Cognitive remediation and enhancement of social cognition
- Promotion of medication adherence, early initiation of decanoate, early consideration of clozapine
- Empirically supported psychotherapy
- Substance misuse treatment
Evidence Based Treatment for Early Psychosis
# Cognitive Behavioral Therapy versus Supportive Therapy and Prevention of Psychosis

Early interventions to prevent psychosis: systematic review and meta-analysis

Stafford MR et al BMJ 2013; 346

<table>
<thead>
<tr>
<th>Study</th>
<th>Events/total</th>
<th>Risk ratio (95% CI), M-H, random</th>
<th>Weight (%)</th>
<th>Risk ratio (95% CI), M-H, random</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CBT</td>
<td>Supportive counselling</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addington 2011a</td>
<td>0/16</td>
<td>3/15</td>
<td>2.6</td>
<td>0.13 (0.01 to 2.40)</td>
</tr>
<tr>
<td>Morrison 2004</td>
<td>2/35</td>
<td>5/23</td>
<td>9.1</td>
<td>0.26 (0.06 to 1.24)</td>
</tr>
<tr>
<td>Morrison 2011</td>
<td>7/144</td>
<td>10/144</td>
<td>24.9</td>
<td>0.70 (0.27 to 1.79)</td>
</tr>
<tr>
<td>Phillips 2009</td>
<td>7/44</td>
<td>6/28</td>
<td>22.7</td>
<td>0.74 (0.28 to 1.98)</td>
</tr>
<tr>
<td>Van der Gaag 2012</td>
<td>9/94</td>
<td>20/102</td>
<td>40.6</td>
<td>0.49 (0.23 to 1.02)</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>25/333</td>
<td>44/312</td>
<td>100.0</td>
<td>0.54 (0.34 to 0.86)</td>
</tr>
</tbody>
</table>

Test for heterogeneity: $\chi^2=2.51$, df=4, $P=0.64$, $I^2=0\%$

Test for overall effect: $z=2.60$, $P=0.009$
Randomized clinical trial of cognitive behavioral social skills training for schizophrenia: Improvement in functioning and experiential negative symptoms. Granholm, et al. Journal of Consulting and Clinical Psychology 82.6 (Dec 2014): 1173-1185.)
Efficacy of Cognitive remediation in schizophrenia

The meta-analysis (2,104 participants) yielded durable effects on global cognition and functioning.

Til Wykes et al Am J Psychiatry 2011
Compensatory Cognitive Training for Psychosis: Effects in a Randomized Controlled Trial

Exercise increases hippocampal volume and improves verbal learning in patients with schizophrenia.
CARE Early Psychosis Treatment Program

- Clinical consultation
- Diagnostic assessment
- Neuropsychological assessment and evaluation
- Pharmacologic management including complimentary medicine
- Intensive Outpatient Treatment (M,W,F 9:00-3:00)
- Individual and group psychotherapy (cognitive behavioral, social skills)
- family therapy
- psychoeducation
- lifestyle counseling
- mindfulness
- cognitive remediation
- case management
- supported employment/education
- research opportunities
A Clinical Research and Treatment Program for Adolescents and Young Adults

Phone: (619) 543-7745
Email: care@ucsd.edu
Website: www.ucsdcareprogram.com