Mission

The mission of the Center for Innovation in Chronic Disease Care is to accelerate improvement in outcomes for children and adolescents with chronic conditions by developing and evaluating new methods of care delivery and by applying innovative approaches to quality improvement and research in chronic disease.

Center Highlights

- The Center has two integrated components --- the Chronic Care Research Group and the Asthma Clinical Innovation Laboratory. The main population of focus is adolescents with chronic disease. At CCHMC as elsewhere, adolescents with chronic disease have worse outcomes than younger patients. This is likely due to a combination of biological behavioral, developmental and health system factors.

- The Collaborative Research Group brings together 15 investigators (including faculty and fellows) from eight disciplines (adolescent medicine, cardiology, general pediatrics, general internal medicine, clinical psychology, speech and language pathology, statistics and quantitative analysis, and pastoral care). They represent nine CCHMC divisions (adolescent medicine, behavioral medicine and psychology, cardiology, emergency medicine, general and community pediatrics, pastoral care, patient services, pediatric medicine and rehabilitation, and pulmonary medicine) as well as Family Medicine at the University of Cincinnati. Main areas of focus include interventions to improve adherence and self-management; spirituality and coping among adolescents with chronic illness; quality of life; and transition to adult care.

- Collaborating researchers contributed to 39 peer-reviewed publications in FY13 related to chronic disease care (see publications list) and acted as principle or co-investigators in 38 federal, foundation or locally sponsored investigations (see list of active grants), and 4 grants currently under review (see grants in review).

- The Asthma Innovation Laboratory bridges research and health care improvement. It develops and prototypes care delivery innovations; translates existing research resources into practice-friendly tools that can be replicated elsewhere; and uses quality improvement methods to continuously improve the clinical care it provides to 291 adolescents with asthma.

RESEARCH HIGHLIGHTS

Bringing Neighborhood Phenotypes and Geomarkers to the Bedside for Children with Asthma

This three year study, beginning in 2013, is funded by a Proctor Scholar Career Development Award. The Principal Investigator is Andrew Beck, MD, MPH of General and Community Pediatrics. The study looks at neighborhood physical environment (ie density of substandard housing) and whether it predicts hospital readmission and emergency department revisit among hospitalized asthmatics. Data sources for the study include Cincinnati Area Geographic Information Systems (CAGIS), Cincinnati Building Department, US Department of Housing and Urban Development, census.gov, Legal Aid referrals from our clinics, and household surveys. The hypothesis for the study is that area level measure of substandard housing will be associated with risk of asthma.
related reutilization, with the primary outcome being either ED revisit or hospital readmission, and that this same metric will be associated with household level reports of household risks.

Development in Adolescence and Adulthood: Links with Health Care Transitions
The long term-goal of this research proposal, being proposed by Sarah Beal, PhD, Adolescent and Transition Medicine, is to develop an independent research career focused on integrating developmental science and the medical setting, specifically as it related to transitions to adulthood and transfers in healthcare. The objective of the proposal is to fill a gap in our current understanding of how health and development intersect to shape the successful young adult transition, while also providing a means for Dr. Beal to establish independence as a researcher. The central hypothesis of the proposal is that effective timing and approach for the transfer in healthcare is dependent on the role changes youth are experiencing. This will be the first study to examine links between healthcare transfer and transitions to adulthood.

Adolescent Controlled Text Messaging to Improve Asthma Medication Adherence in Primary Care
Asthma, the most common chronic condition of childhood, currently affects millions of adolescents. The rates, severity and adverse outcomes for those in poor minority populations are higher. One reason for this is the lack of adherence to medication among these adolescents. Maria Britto, MD, MPH and a team of researchers has developed a novel, developmentally appropriate, adolescent controlled, calendar-to-text messaging intervention suitable for use in primary care to improve adherence by promoting autonomy and control and prompting use of controller medications for these adolescents. Their proposal includes a pilot randomized controlled trial, in four Cincinnati Childrens based primary care clinics, of a texting intervention to increase adherence to preventive asthma medication among this poor minority population.

QUALITY IMPROVEMENT WORK

Population Management
Population management employs proactive steps to manage patient care before, during and after a visit by using a system of coordinated healthcare interventions and communications for populations with conditions in which patient self-care efforts are significant. In FY2013, the lab team concentrated on the identification and reduction of care gaps including immunizations, pulmonary referrals and annual physical examinations. At the end of the year, care gaps were at 17%.

Transition to Adult Care
In FY2013, the lab team developed, tested and implemented the use of a brochure to assist patients preparing for a transition to adult primary care.

Behavior Management
In FY2013, in addition to regular meetings, the team held a retreat and prioritized different issues patients face in trying to maintain well-controlled asthma. Using brainstorming, priority mapping and patient input, the team ultimately chose to develop an intervention to help patients in preparation or action to remember to regularly take their controller medication. The intervention is a diagram that helps patients use everyday occurrences or habits trigger the use of their controller inhaler. In FY2014, the team will continue testing and implementation of the tool and determine whether it improves adherence.
**Staff**

Masa Ashiki  
Anderson Center  
Lab Data Analyst

Sarah Beal, PhD  
Adolescent and Transition Medicine  
Research Group

Andrew F. Beck, MD  
General and Community Pediatrics  
Research Group

Bill Brinkman, MD, Med  
General and Community Pediatrics  
Research Group

Maria Britto, MD, MPH  
Adolescent and Transition Medicine, and  
Anderson Center  
Center Director

Terri Byczkowski, PhD  
Emergency Medicine  
Research Group and Lab Team

Sian Cotton, PhD  
Family Medicine  
Research Group

Lori Crosby, PsyD  
Behavioral Medicine and  
Psychology  
Research Group

Daniel Grossoehme, DMin, BCC  
Pastoral Care, and Pulmonary Medicine  
Research Group

Barbara Hagan, MBA, BSME  
Quality Improvement Systems  
Lab Team

Naomi Joffe, PhD  
Center for Adherence Promotion and Self-Management  
Research Group

Kimberly Kaas  
Quality Improvement Systems  
Lab Team

Oriaku Kas-Osoka, MD  
Adolescent and Transition Medicine  
Lab Team

Ellen Lipstein MD  
Adolescent and Transition Medicine  
Research Group

Bradley Marino, MD, MPP, MSCE  
Heart Institute Research Core  
Research Group

Esi M. Morgan Dewitt, MD, MSCE  
Rheumatology  
Research Group

Abigail Nye, MD  
Adolescent and Transition Medicine  
Research Group and Lab Team

Jennifer Prather, RN  
Adolescent and Transition Medicine  
Lab Team

Ray Pruett  
Anderson Center  
Lab Data Analyst

Derek Racicki, MSSA, MA, LSW  
Social Services  
Lab Team
Erin Redle, PhD, CCC–SLP  
Division of Speech-Language Pathology  
Research Group

Christopher Stahl  
Center for Technical  
Commercialization  
Lab Team

Joanna Thomson, MD  
Hospital Medicine  
Research Group

Anna-Liisa Vockell, RN, MSN, NP  
Patient Services  
Lab Clinician

David Weybright, RN, MSN  
Adolescent and Transition Medicine  
Lab Team

Julie Williams  
Administrative Assistant  
Adolescent and Transition Medicine  
Research Group and Lab Team

Janet Wimberg  
Patient Services  
Lab Team Parent Coordinator
Publications in FY13


### Grant Support in FY13

#### Acceleration to Expertise: Simulation as a Tool to Improve the Recognition of Sepsis

<table>
<thead>
<tr>
<th>AHRQ</th>
<th>04/01/11-03/31/14</th>
<th>$1,031,931</th>
</tr>
</thead>
<tbody>
<tr>
<td>1R18HS020455-01</td>
<td>PI: Geis</td>
<td>Co-PI: Byczkowski</td>
</tr>
</tbody>
</table>

#### Adherence and Psychosocial Factors Related to Spirituality: Examining Causality to Inform an Intervention

<table>
<thead>
<tr>
<th>Cystic Fibrosis Foundation</th>
<th>12/1/2012-11/30/2013</th>
<th>$37,940</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI: Grossoehme</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Breathing Retraining in African-American Adolescents with Asthma

<table>
<thead>
<tr>
<th>US/CHMC CCTST</th>
<th>2013-2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI: Cotton</td>
<td></td>
</tr>
</tbody>
</table>

#### Bringing Neighborhood Phenotypes and Geomarkers to the Bedside for Children with Asthma

<table>
<thead>
<tr>
<th>Proctor Scholar Award, CCHMC</th>
<th>2013-Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>PI: Beck</td>
<td></td>
</tr>
</tbody>
</table>
Building Modular Pediatric Chronic Disease Registries for QI and CE Research
AHRQ  09/01/10-08/31/13  $9,042,411
R01HS020024-01
PI: Hutton
Collaborator(s): Britto

Center of Excellence on Quality of Care Measures for Children with Complex Needs
AHRQ  03/01/11-02/28/15  $655,832
U18 CHIPRA Pediatric Healthcare Quality Measures Program Centers of Excellence
PI: Mangione-Smith
Site PI: Britto

Determinants of Health-Related Quality of Life for Children with JIA
NIH/NIAMS  05/01/08-04/30/13  $1,124,423
P60-AR047784
Co-PI: Glass, Seid
Center Collaborator(s): Britto

Developing Quality Measures to Access Pediatric Inpatient Respiratory Care
NHLBI  12/01/08-11/30/13  $3,293,636
1R01HL088503-01
PI: Mangione-Smith
Site PI: Britto

Do Serum Biochemical and Hematopoietic, and Stool Biomarkers Predict Low Cardiac Index in Patients with Fontan Physiology?
Children’s Heart Foundation  01/01/12-12/31/13  $200,000
PI: Marino

Efficacy of Integrative Care Therapies in Hospitalized Children/Adolescents
CCHMC  2013-2016
PI: Cotton

Greater Cincinnati Asthma Risks Study
NIH  2012-Present
1R01A188116
Co-PI: Beck

The Heart Institute Neurodevelopmental and Educational Clinic
Kindervelt Foundation  07/01/12 – 06/30/16  $2,000,000
PI: Heart Institute Executive Co-Directors
Center Collaborator: Marino

HPV Vaccine Decision Aid Development
CCHMC Place Outcomes Research Award  07/01/11-06/30/13  $119,998
PI: Widdice
Center Collaborator: Brinkman

Impact of SCD Patient Portal on Transition to Adult Care
CCHMC Place Outcomes Award  07/01/11-Present  $60,000/yr
PI: Crosby
Improving Home Environmental Risk Assessment and Enhancing Referrals for Housing Code Enforcement for Children with Asthma
Center for Clinical and Translational Science and Training (CCTST) 2011-2012 $15,315
Pl: Beck

Improving Parents’ TNF-α Inhibitor Treatment Decisions
Cincinnati Children’s Hospital Place Outcomes Research Award
Pl: Lipstein 07/01/2011-06/30/2013 $103,984

Improving Sickle Cell Transitions of Care through Health Information Technology, Phase 1
AHRQ 08/30/12-05/29/14 $62,834
HHSA2902010000331/HHSA209032001T Site PI: Britto

Improving STI Results Notification and Partner Services
CCTST/NH 11/01/10-10/31/12 $200,000
2K12HD051953-06 Co-Investigator: Byczkowski

Infant Nutrition Intervention Partnership: Cincinnati Children’s Hospital Medical Center and Freestore Foodbank
Proctor & Gamble 2011-Present $50,000
Co-Investigator: Beck

Magnetic Resonance Elastography in Fontan Patients
Society of Pediatric Radiology 09/01/13-08/31/14 $10,000
New Investigator Pilot Grant
Pl: Wallihan
Collaborator: Marino

Medication Continuity Among Children Treated for ADHD
NIMH 12/01/09-11/30/14 $821,499
Patient Oriented-Career Development Award (PA-09-043)
Pl: Brinkman

Open Source Science: Transforming Chronic Care
NIH/NIDDK 10/01/09-09/13/14 $7,831,713
R01DK085719 Co-PI’s: Margolis/Seid
Co-Investigator: Britto

Outcomes in Patients Requiring More than a Single Course of ECMO Therapy
ELSO Research Grant 07/01/12 –06/30/13 $10,000
Pl: Cooper
Center Collaborator – Marino

Outcomes Research in Children with Complex Congenital Heart Disease
Cincinnati Children’s Hospital Research 07/01/07-06/30/13 $4,263,710
Foundation
Pl: Marino
Parental Adherence to CF Homecare: Research Chaplaincy Career Commitment
NIH/NICHD 08/13/10-05/31/15 $590,000
Pl: Grossoehme

Patient-Provider Interventions to Improve the Transition to Adult Care in SCD
NIH/NHLBI 2011-Present $431,170/yr
K07HL108720
Pl: Crosby

Pursuing Perfection in Pediatric Therapeutics
AHRQ 10/01/11-09/30/16 $850,000
1U19HS021114
Pl: Lannon
Center Collaborator: Brinkman

Pursuing Perfection in Pediatric Therapeutics (sub-project: Shared Decision Making in Pediatric Rheumatology).
AHRQ 10/01/11-09/30/16 $849,999
1U19HS021114
Pl: Lannon
Center Collaborator: Lipstein

Pursuing Perfection in Pediatric Therapeutics
AHRQ 09/30/2011-08/31/16 $555,555
U19HS021114
Pl: Lannon
Co-Investigator: Morgan DeWitt

Resilience in Emergency Department Workers Following Workplace Violence
Robert Wood Johnson Foundation 09/01/12-08/31/15 $349,979
Pl: Gillespie
Co-Investigator: Byczkowski

Resuscitation Using Novel Impedance Threshold Device in Pediatrics
NIH/NHLBI SBIR Grant 08/01/12-07/31/14 $369,638
2R44 HL083541-03A1
Pl: Lurie
Center Collaborator: Marino

Shared Decision Making to Improve Care and Outcomes for Children with Autism
CCHMC Place Outcomes Research Award 07/01/13 – 06/30/15 $60,000
Co-PI’s: Anixt and Brinkman

Shared Decision Making In Pediatric Chronic Conditions: Biologics in IBD and JIA
NIH
Pl: Lipstein

Social networks and adherence in adolescents with CF
Place Outcomes Award 07/01/12-06/30/14 $120,000
Pl: Grossoehme
Spiritual Intervention in a Medical Home for Patients with Sickle Cell Disease
NIH 2010-2013 $810,610
R01HD059879-01
PI: YI
Co-Investigator: Britto

STAT-ED Suicidal Teens Assessing Treatment after an Emergency Department Visit
DHHS, CDC 09/30/12-09/29/15 $1,198,415
1R01CE002129-01
PI: Grupp-Phelan
Co-Investigator: Byczkowski

Transitional Telehealth Home Care: REACH
National Institute of Nursing Research 09/21/11 – 06/30/16 $696,557
2 R01 NR002093
PI: Medoff-Cooper
Center Collaborator: Marino

Understanding Mechanisms of Fontan Failure and Key Predictors for Patient Outcome
AHRQ 02/01/10-01/31/14 $116,903
1 R01 HL098252-01
PI: Yoganathan
Center Collaborator: Marino

**Grants in Review**

RCT of the In Vivo Intervention for Youth with Asthma CCC
R01HL114550 07/01/12-06/30/17
NIH
PI: Michael Seid
Co-Investigator: Britto

A Social Ecological CBPR Approach for Addressing Latino Child Health Disparities
1R24MD008052-01 01/01/13-12/31/15
NIH
PI: Lisa Vaughn
Co-Investigator: Britto

Adolescent Controlled Text Messaging to Improve Asthma Medication Adherence in Primary Care
1R21HL119826-01 07/01/13-06/30/15
NIH
PI: Britto

Developing New Technologies to Improve ADHD Medication Continuity
R34 MH101155-02 04/01/14-03/31/17
NIMH
PI: Brinkman