2013 Research Annual Report

James M. Anderson Center for Health Systems Excellence

Division Details

Division Data Summary

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<tr>
<th>RESEARCH AND TRAINING DETAILS</th>
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<tr>
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Significant Accomplishments

Health Services Research Supports Learning Health Systems

The Health Services Research Matrix at Cincinnati Children’s links researchers, patients and clinicians to improve care and outcomes for children, families, and communities. An integral part of the HSR Matrix is to support learning health systems to help patients and providers work together to choose care based on evidence. One such learning health system is the Ohio Perinatal Quality Collaborative (OPQC), a statewide network dedicated to improving perinatal health and reducing preterm births. Since 2008, the OPQC’s focus on reducing elective scheduled deliveries before 39 weeks has prevented an estimated 950 NICU admissions; avoiding about $19 million in unnecessary costs. We also support the Pediatric Rheumatology Care and Outcomes Improvement Network (PR-COIN), a national group of experts who collaborate on improved management of juvenile idiopathic arthritis. PR-COIN has created a shared decision making tool for providers, patients, and parents.

Shared Decision Making Delivers Evidence-Based, Family-Centered Care

Shared decision making (SDM) has emerged as a best practice in situations where there are multiple medically reasonable options that differ in ways that matter to families. Clinicians share information about options and patients and parents share their goals, values and preferences. Together, a plan is developed to best fit the patient’s needs. Decision aids are evidence-based tools that improve patient/family knowledge, decrease their uncertainty, and improve alignment between their preferences and the treatment plan. While decision aids have grown in use in adult settings, their application has been limited in pediatrics.
William Brinkman, MD, MEd, MSc, a member of our Evidence and Measures Team, is leading efforts to support SDM throughout Cincinnati Children’s. Brinkman and colleagues recently published findings that show parents of children newly diagnosed with ADHD were better informed and more involved in decision making after receiving an SDM intervention. The intervention materials were developed in partnership with Professor Mike Zender and his graduate students at the University of Cincinnati College of Design, Architecture, Art, and Planning (DAAP). This study was funded by a CCHMC Place Outcomes Research Award.

Building on this success, Brinkman and colleagues have collaborated with investigators in more clinical settings. In Adolescent Medicine, Lea Widdice, MD, has employed a decision aid that has increased knowledge and support for receiving human papillomavirus vaccines. Meanwhile, Esi Morgan DeWitt, MD, MSCE, Ellen Lipstein, MD, MPH, and Carole Lannon, MD, MPH, collaborated to develop a successful decision aid for use in managing juvenile idiopathic arthritis. For more information about SDM tools, please visit: www.cincinnatichildrens.org/shareddecisions

Mentoring Program Supports Young Investigators

The HSR Matrix mentoring program promotes the career development of young investigators in health services research. Fifteen junior investigators from 13 pediatric, surgical and patient services divisions are currently in the program. Major outcomes measures for the program were developed in collaboration with mentors and mentees, the Office for Faculty Development and the Education and Learning group in Human Resources. Measures track on-time promotion, retention, success at meeting research goal, career satisfaction and feedback about the program. In FY 2013, the HSR Matrix hosted 12 speakers and two community learning events with national and international leaders addressing topics ranging from methodology to community building and innovative care strategies. Especially popular talks came from Bruce Marshall, MD, Vice President of Clinical Affairs at the Cystic Fibrosis Foundation and Mark Schuster, MD, PhD, Vice Chair for Health Policy at Boston Children’s Hospital.

Research Highlights

The Anderson Center “Getting to Scale” Symposium

In March, 2013, the Anderson Center held its first ever external symposium, “Getting to Scale”. We invited world-class thinkers from a variety of sectors to address the challenges of scaling; spreading our innovations and interventions to large populations to exponentially increase their impact. The program featured prominent experts on scale from both healthcare and non-healthcare industries presenting brief, “thought bomb” case-studies based upon their experiences as well as highly interactive sessions with leaders from across healthcare. The speakers included Nana Twum-Danso (Fives Alive), Bob Jesse (Veterans Health Administration), Claudia Kotchka (P&G), Louise Liang (Kaiser), and Bonny Simi (JetBlue). Joe McCannon (100,000 Lives Initiative) and Bob Sutton (an author and highly innovative thinker on the theories of scale at Stanford) moderated the event and shared their expertise on scale as well. Using OCHSPS as a case study, international thought leaders assessed the challenges and tradeoffs of going to scale. Participants walked away with practical applications of lessons learned across many industries that they could apply to their individual business situations.

Safety

Under the leadership of Dr. Steve Muething, we identified multi-factorial causes of the deterioration in safety
culture and process reliability, and are partnering with senior leadership to design and begin work on Operational Excellence so that Safety is not a separate initiative, but a focus of everyone as part of their jobs every day. We are also working to spread this high reliability culture to other Children’s Hospitals nationwide. The Ohio Children’s Hospital Solutions for Patient Safety (OCHSPS) has seen a 50% reduction in the Serious Safety Event rate and serious harm index in Ohio, beginning reductions in serious harm for 33 hospitals in Phase I and expansion to 76 hospitals with 43 hospitals joining in Phase II. OCHSPS has been nationally recognized as a leading hospital engagement network.

Chronic and Complex Disease

Chronic and complex disease represents a formidable challenge, but is arguably the most important work we do with the most significant and far-reaching impact not only on the health of children, but on the healthcare system as a whole. Under the leadership of Dr. Jennifer Lail, and in partnership with Patient Services, the Care Coordination and Outcomes Initiative has worked with innovative clinical areas to change the way we deliver chronic care to a more holistic and coordinated approach. Thirteen conditions developed registry and outcomes measures, deployed needs stratification and care support, as well as self-management and pre-visit planning. As a result, this collaboration achieved 20% improvement in outcomes for six conditions; double our projections for FY2013. We look forward to improving outcomes with additional condition-based teams as part of Wave 2 in FY2014.

Community Health

In partnership with various community agencies, Dr. Robert Kahn led initiatives to reduce unintentional injuries, infant mortality, asthma ED visits, and address childhood obesity. As a result of their diligence, there was a 70% reduction in unintentional injuries in the Norwood intervention homes, and improved QI capacity in the community with six school and health center teams participating in RCIC. Additionally, in partnership with PI and ECS, we were awarded $3.2M in grant funding from Bethesda, Inc. to drive breakthrough results in infant mortality for our region.

Productivity/Flow

Dr. Fred Ryckman accomplished significant results in Productivity and Flow this year, with the achievement of 80% discharged when Physically Ready, the validation of bed models, and the maintenance of system delay rates even with a record high census. His area also led early work on the development of GARDIANS (Global Automated Risk Detection Interface and Network System) for Operational Excellence. GARDIANS serves as a front-line tool that comprehensively and efficiently presents information to enable front-line leaders to identify and mitigate risk for flow failures, patient and family experience failures, and safety events. Most importantly, Peri-Op completed 940 days without a serious safety event.

Learning Networks

Under the leadership of Dr. Carole Lannon and Dr. Peter Margolis, significant accomplishments were realized in our learning networks, including the development of Learning Networks Core infrastructure which enabled the extension of support by the five existing networks to 170 sites in 41 states and two countries. Dr. Lannon has led the continued collaboration with ABP, including a national invitational meeting focused on promoting and sustaining the network model in June 2013, and a grant with ABP to highlight networks as part of the maintenance of certification program.

Significant improvements in outcomes among the national networks such as the Improve Care Now (ICN) and Chronic Care Collaborative (C3N) networks and the demonstration of a robust network infrastructure for
research, e.g. the ability to replicate important trials using data collected by these networks, has garnered national recognition by funding agencies interested in proliferating this success. As a result, Dr. Margolis has led the collaboration regarding C3N with the Patient Centered Outcomes Research Institute pertaining to PCORI funding strategies.

Health Services Research

This year, Dr. Peter Margolis led efforts to strengthen and integrate health services teaching and knowledge throughout the organization. In support of this, the Anderson Center hosted 12 speakers and two community learning events, as well as established a research mentoring program.

Evidence and Measurement

Under the leadership of Dr. Evie Alessandrini, significant strides were made in health care awards. Reporting to US News and World Report was improved, including closer links to improvement priorities with a concomitant 48% rate of gap closures, and resulting in a #3 overall ranking, and a #1 ranking in cancer care. The survey strategy and coordination with clinical areas resulted in a Parents’ Magazine rank of #3 (#4 in 2009), with all six subspecialties ranked in top three (all 7-9 in 2009). Additionally, Cincinnati Children’s was one of only two hospitals nationally to win the LeapFrog/URAC web transparency.

The Leadership Academy

The Leadership Academy also made significant strides in both internal and external capability and capacity building. The external I2S2 course was launched with nine external candidates in current classes, with a course of external participants only (19 confirmed) scheduled for October. We increased the overall project total and early testing of PDSA’s in both I2S2 and RCIC resulting in improved project results, as well as increased the percentage of teams achieving improvement (five or above) in RCIC from 60 to 88%.

Division Publications


39. Margolis PA, Peterson LE, Seid M. **Collaborative Chronic Care Networks (C3Ns) to Transform Chronic Illness Care.** *Pediatrics.* 2013; 131 Suppl 4:S219-23.


59. Zuckerman B, Margolis PA, Mate KS. Health services innovation: the time is now. JAMA. 2013; 309:1113-4.

Faculty, Staff, and Trainees

Faculty Members

**Uma Kotagal, MBBS, MSc**, Professor

  **Leadership** Director, Health Policy and Clinical Effectiveness; Senior Vice President, Quality and Transformation

  **Research Interests** Using research methods and analysis to understand, diagnose and implement sustainable changes in care practices so as to meet all dimensions of the patients and families.

**Evaline Alessandrini, MD, MSCE**, Professor

  **Leadership** Director, Quality Scholars Program in Health Care Transformation


**Adam Carle, MA, PhD**, Assistant Professor

  **Research Interests** Utilizing statistical methods to improve health outcomes measurement, focus on children with special health care needs

**Nancy Daraiseh, PhD**, Assistant Professor

  **Research Interests** CPE Nursing Operations, environmental safety in healthcare and industrial engineering

**Linda Dynan, PhD**, Adjunct

  **Research Interests** Racial disparities in health outcomes, hospital efficiency, and inpatient quality and safety

**Jennifer Lail, MD**, Associate Professor

  **Research Interests** Chronic and complex care; coordination of care

**Carole Lannon, MD, MPH**, Professor

  **Leadership** Co-Director, Center for Health Care Quality

  **Research Interests** To learn what and how improvement science methods achieve best results in improving healthcare and outcomes. To understand what improvement science methods can help target specific practice segments.

**Keith E. Mandel, MD**, Assistant Professor

  **Leadership** Vice President of Medical Affairs, Tri State Child Health Services Inc.; Leader, Physician-
Hospital Organization (PHO); Leader, PHO Asthma Initiative; Co-leader, PHO Children with Special Healthcare Needs Initiative; Co-leader, CCHMC External Quality Consulting; Co-leader, Ratings and Rankings Committee; Co-Leader, Business Case for Quality Committee

**Research Interests** Aligning pay-for-performance programs/financial incentives with large-scale quality improvement initiatives, assessing the financial impact of quality improvement initiatives

**Peter Margolis, MD, PhD**, Professor  
**Leadership** Co-Director, Center for Health Care Quality; Co-Director, Health Services Research Matrix; Acting Director, Quality Scholars Fellowship in Transforming Health Care

**Research Interests** Integrating public health and quality improvement methods to design, develop and test interventions to improve the outcomes of care for populations of children and adults.

**Steve Muething, MD**, Associate Professor  
**Leadership** Co-leader for the Ohio Children’s Hospital Solutions for Patient Safety

**Research Interests** Patient Safety, Reliability, Adverse Events

**Kieran J. Phelan, MD, MSc**, Associate Professor  
**Leadership** Evidence-Based Clinical Practice Guidelines

**Research Interests** Effects of home visitation and housing on pediatric injury epidemiology and control, chronic disease management, and the psychology of parental supervision and health care decision making.

**Denise White, PhD**, Assistant Professor  
**Research Interests** Space utilization, capacity, and flow

**Joint Appointment Faculty Members**

**Anne Boat, MD**, Associate Professor (Anesthesia)  
**Research Interests** Patient and Family Experience

**Patrick Brady, MD**, Assistant Professor (General Pediatrics)  
**Research Interests** Safety; risk prediction and mitigation

**Maria Britto, MD, MPH**, Professor (Adolescent Medicine)  
**Research Interests** Health care quality, especially for adolescents with chronic illness

**Dennis Drotar, MD**, Professor (Behavioral Medicine and Clinical Psychology)  
**Research Interests** Care coordination and self-management

**Craig Froehle, PhD**, Associate Professor (UC College of Business)  
**Research Interests** Operational technologies, services management, healthcare (or health care) operations, process improvement

**Srikant Iyer, MD, MPH**, Assistant Professor (Emergency Medicine)  
**Research Interests** Organizing systems and processes in emergency medicine to deliver ideal care and improve patient outcomes.

**Robert Kahn, MD**, Associate Professor (General Pediatrics)  
**Research Interests** Population health; infant mortality, asthma, obesity, injury prevention

**Heather Kaplan, MD, MSCE**, Assistant Professor (Neonatology)  
**Research Interests** Identifying and examining strategies for improving the implementation of evidence into practice and studying quality improvement as a mechanism of promoting the uptake of research findings and
improving patient outcomes.

**Esi Morgan Dewitt, MD, MSCE, Assistant Professor (Rheumatology)**

**Research Interests** Improving measurement of child health status using patient-reported outcomes, comparative effectiveness of therapeutics, application of quality improvement science

**Michael Seid, PhD, Professor (Pulmonary Medicine)**

**Research Interests** Measuring and improving pediatric health care quality and health-related quality of life for chronically ill children and understanding the interactions between vulnerable chronically ill children and the health care system, the barriers to care faced by these populations, and policies and programs to overcome these barriers to care.

### Grants, Contracts, and Industry Agreements

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MEDTAPP Statewide Quality Improvement Manager
Ohio Department of Job and Family Services (Centers for Medicaid and Medicare Services)(Ohio State University)
G-1213-07-0343 07/06/12-06/30/15 $148,637

MEDTAPP - Perinatal Quality Project
Ohio Department of Job and Family Services (Centers for Medicaid and Medicare Services)(Ohio State University)
G-1213-07-0343 07/01/12-06/30/13 $384,052

MEDTAPP - Perinatal Quality Project
Ohio Department of Health (Ohio State University)
FAM-32320-02a 07/01/12-06/30/13 $168,939

OHA Perinatal Hospital Engagement Network Content Expert
Department of Health and Human Services (Ohio Hospital Association)
HHSM 500-2012-00021C 10/01/12-12/31/13 $85,000

State-Based Prenatal Quality Collaborator
Centers for Disease Prenatal Control and Prevention (Ohio Department of Health)
U38 DP 003787 12/01/11-06/30/13 $130,739

MANDEL, K

Accelerating Improved Care for Children with Asthma
American Academy of Pediatrics
03/01/11-04/01/13 $43,529

North Carolina IMPACT: Advancing and Spreading Primary Care Transformation
Department of Health and Human Services (University of North Carolina)
U18 HS 020940 09/30/12-09/29/13 $4,706

AF4Q - NPO Consulting
Robert Wood Johnson Foundation (George Washington University)
07/24/2012-08/31/2013 $81,150

MARGOLIS, P

Aligning Forces for Quality
The American Board of Medical Specialties Research & Education Foundation (George Washington University)
09/01/10-08/31/13 $385,917

Open Source Science: Transforming Chronic Illness Care
National Institutes of Health
R01 DK 085719 09/30/09-08/31/14 $976,303

ImproveCareNow Improvement Collaborative
ImproveCareNow, Inc.
07/01/11-06/30/13 $510,000

MUETHING, S

Ohio Children’s Hospital Solutions for Patient Safety Learning Network
Ohio Children’s Hospital Association Foundation
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Current Year Direct $7,916,074

Total $7,916,074