

Division Data Summary

Research and Training Details

Number of Faculty	9
Number of Joint Appointment Faculty	8
Number of Support Personnel	129
Direct Annual Grant Support	\$4,560,071
Peer Reviewed Publications	50

Division Photo



Row 1: S Iyer, L Goldenhaar, A Carle, E Morgan Dewitt, H Kaplan, U Kotagal, M Britto, H Tubbs-Cooley, J Anderson
Row 2: L Dynan, C Froehle, E Alessandrini, C Lannon, F Ryckman, P Margolis
Row 3: R Kahn, KJ Phelan, P Brady, D Hooper, D Buten, M Seid

Significant Publications

Fairbrother GL, **Carle AC**, Cassidy A, Newacheck PW. **The impact of parental job loss on children's health insurance coverage.** *Health Aff (Millwood)*. 29(7):1343-9. Jul 2010.

This publication details how children with private health insurance are more than six and a half times as likely to lose coverage in the three months after one or both of their parents loses a job, compared to children whose parents remain employed. In the current economic environment, this finding is especially troubling. Study results estimate that for every 1,000 jobs lost, 311 privately insured children lose coverage and more than 45 percent of the poorest and most vulnerable of privately insured children became uninsured and concludes that much more effort is needed to quickly enroll children in public health insurance programs when their parents suffer a job loss.

Kaplan HC, Brady PW, Dritz MC, Hooper DK, Linam WM, Froehle CM, Margolis P. The influence of context on quality improvement success in health care: a systematic review of the literature. *Milbank Q*. 88(4):500-59. Dec, 2010.

This publication identifies several contextual factors shown to be important to QI success, although the current body of literature lacks adequate definitions and is characterized by considerable variability in how contextual factors are measured across studies. It provide recommendations on QI success, including that research should focus on identifying and developing measures of context tied to a conceptual model that examines context across all levels of the health care system and explores the relationships among various aspects of context.

Crandall W, Kappelman MD, Colletti RB, Leibowitz I, Grunow JE, Ali S, Baron HI, Berman JH, Boyle B, Cohen S, Del Rosario F, Denson LA, Duffy L, Integlia MJ, Kim SC, Milov D, Patel AS, Schoen BT, Walkiewicz D, **Margolis P.**

ImproveCareNow: The development of a pediatric inflammatory bowel disease improvement network.

Inflamm Bowel Dis. 17(1):450-7. Jan, 2011.

This article discusses the significant variation in diagnostic testing and treatment for inflammatory bowel disease

and how quality improvement science methods can help address unwarranted variations in care and outcomes. It provides a overview of the ImproveCareNow Network and the prototype for a model of improving subspecialty care that includes three components: 1) creating enduring multicenter collaborative networks of pediatric subspecialists, 2) sharing of performance data collected in patient registries, and 3) training in quality improvement. Initial results suggest improvements in both care processes and outcomes that suggest that practice sites are learning how to apply quality improvement methods to improve the care of patients.

Hooper DK, Carle AC, Schuchter J, Goebel J. Interaction between tacrolimus and intravenous nicardipine in the treatment of post-kidney transplant hypertension at pediatric hospitals. *Pediatr Transplant.* 15(1):88-95. Feb, 2011.

This publication examines TAC, which is commonly prescribed in KTX recipients, though overexposure can be nephrotoxic. CIVN, used to treat post-KTX hypertension, may inhibit TAC metabolism resulting in overexposure and potential toxicity. It presents two case reports and analysis of 2068 KTXs from the PHIS to characterize post-KTX intravenous anti-hypertensive use and to determine whether CIVN in TAC-treated patients would predict "immunosuppressive drug causing adverse effects in therapeutic use".

Iyer SB, Schubert CJ, Schoettker PJ, Reeves SD. Use of quality-improvement methods to improve timeliness of analgesic delivery. *Pediatrics.* 127(1):e219-25. Jan, 2011.

Despite its high prevalence, pain often is poorly managed in the emergency department. This article details how improvement science and quality-improvement methods can reduce delays associated with opioid delivery for children presenting to the emergency department with clinically apparent extremity fractures. By applying quality-improvement and process improvement methodology, the study team identified key drivers for the rapid delivery of systemic opioids to patients with clinically apparent extremity fractures and significantly improved the timeliness of analgesic delivery for this subgroup of patients.

Division Highlights

Overview

This year closes the first fiscal year of operations for the James M. Anderson Center for Health Systems Excellence. The AC centers focus accelerated on both new knowledge generation and its application in the delivery of care. As part of the Anderson Center's FY11 operating plan, we focused on building our funding and outputs in support of this mission. The effort was very successful. External revenue related to the Anderson Center's research activities grew in FY11 to almost \$6Million, representing a 15% increase over FY10, and continues the significant growth in research that began in FY09. In addition, faculty affiliated with the Anderson Center submitted 58 manuscripts for publication and 17 new grant proposals, an increase in both from the previous year.

Patient Safety

Patient safety remained a top priority for both the Anderson Center and the organization this year. This year safety team under Dr. Steve Muething's leadership instituted daily safety briefs, established baseline metrics for serious preventable harm, and spread successful trip-fall interventions. Leveraging major funding received in FY10 they successfully launched Solutions for Patient Safety (SPS), a collaborative of all 8 Children's Hospitals in Ohio with a singular focus on the elimination of serious harm. To date SPS has achieved a 60% reduction in surgical site infections in designated procedures and a 34.5% reduction in overall adverse drug events.

Capacity Management

Dr. Fred Ryckman led the Capacity Management team in their effort to improve productivity using existing

assets. This system-wide flow team spread a discharge prediction tool to reduce system delays, launched six programs aimed at reducing cost in the operating room, and achieved reliable check out procedures in 80% of divisions.

Chronic Care Systems

Chronic care systems, under the leadership of Dr. Maria Britto, exceeded goals for the year, with chronic care improvement teams meeting 83% of their FY11 targets. Efforts around embedding individual disease-based outcome measures into EPIC were very successful, resulting in 54% of conditions having 2 measures reliably collected in the EPIC system. At the close of FY11, we have 26 disease-based teams working to improve the care of children with chronic diseases.

Population Health

Under the direction of Dr. Robert Kahn, four teams continued work in the Population Health area in FY11. The Infant Mortality team successfully identified prematurity hot spots in Price Hill that are ripe for intervention testing in the coming year. Obesity and Asthma teams developed key drivers for their programs and developed baseline data in these areas. The Injury team worked to define their population.

Capacity Building

This year Anderson Center also continued to advance our mission to build the next generation of improvement leaders through our Intermediate Improvement Science Series (I²S²), Advanced Improvement Methods (AIM), and Rapid Cycle Improvement Collaborative (RCIC) course offerings. To date, I²S² has graduated over 300 internal leaders trained in executing quality improvement in their area. Through AIM, we have trained 84 faculty and fellows, as well as national faculty from other universities, in the theory and application of advanced quality improvement methodology including complex study designs to evaluate specific causal impact of interventions. We initiated the RCIC to support our next level of improvement capability building efforts. In addition, the Quality Scholars program, started 4 years ago and led by Dr. Evaline Alessandrini, continued to grow and diversify this year. The Anderson Center graduated four quality scholars and added several new scholars from numerous divisions and diverse specialties, including a nurse researcher, a psychologist, and a speech pathologist.

Health Services Research

As one of the cores within the Anderson Center, Health Services Research (HSR) is focused on developing a creative and robust portfolio of health services, outcomes, comparative effectiveness, and quality improvement (QI) research projects across the medical center that brings together researchers, patients and clinicians to create new knowledge and innovations about how to improve care and outcomes for children, families and communities.

In FY11, HSR leader Dr. Peter Margolis with colleagues across CCHMC, continued development of the HSR Matrix as a tool to better connect research leaders across the organization. This year the Matrix team made progress toward improving the sense of common purpose among HSR researchers at CCHMC. The community-building effort of the HSR Matrix facilitated cross-sharing of ideas that uncovered many opportunities for increased collaboration across our institutional research projects. A five year plan for development of HSR faculty across the organization and core methodologists within the Anderson Center was approved.

This year Anderson Center HSR researchers and staff worked with a number of CCHMC teams, including our own Anderson Center Learning Networks group, on a number of research partnerships, including:

Group	Areas of Collaboration
GI	<ul style="list-style-type: none"> • C3N grant: <ul style="list-style-type: none"> • Delivery system design • Development of new informatics capabilities • Comparative effectiveness research • Studies in Pediatric Liver Transplantation Learning Network
Biomedical informatics	<ul style="list-style-type: none"> • Enhanced Registries grant
General and Community Pediatrics	<ul style="list-style-type: none"> • National networks of communities focused on early childhood development • Population-focused screening and development activities in Price Hill
Rheumatology	<ul style="list-style-type: none"> • Pediatric Rheumatology—Care and Outcomes Improvement Network Learning Network • Comparative effectiveness research
Neonatology	<ul style="list-style-type: none"> • Ohio Perinatal Quality Collaborative Learning Network

In addition, the HSR core hosted several prominent speakers for open presentations on HSR topics.

Learning Networks

The Anderson Center Learning Networks core, led by Dr. Carole Lannon, aims to build collaborative networks that enable patients and families, clinicians, researchers, and communities to work together in a compelling process of quality improvement, innovation and discovery. The goal for these networks is to measurably improve care and outcomes for children. The Learning Networks core primarily focused this year on planning a collaborative-based approach to allow for scalable, results-driven infrastructure to support CCHMC's initiative to launch 10 multi-site networks by 2015. The current portfolio of Learning Networks spans a broad reach of conditions, settings, and geographical locations, including:

State

Ohio Perinatal Quality Collaborative (OPQC). This statewide effort aims to reduce preterm births and improve outcomes of preterm newborns. Initial projects reduced bloodstream infections by 20% in hospitalized premature infants (24 NICUs) and decreased near term deliveries without medical indications by more than 16,000 births to date (20 OB units). These projects produced an estimated savings to Ohio of at least \$11 million in annual total costs.

Solutions for Patient Safety (SPS). All 8 children's hospitals in Ohio are participating in this project to improve outcomes in surgical site infections and medication safety with funding by Cardinal Health and the Ohio Business Roundtable. Resultant reductions in infection rates have saved an estimated 3,576 children from unnecessary harm and over \$5.2 million in health care costs.

National

ImproveCareNow (ICN). This network has documented an increase in patients with inactive disease from 48% to 75% over three years. Building on the ICN foundation of 30 teams are two important research efforts: 1) an NIH-funded Transformative TR01 using an open- science framework to develop a *Collaborative Chronic Care Network* (C3N); and 2) AHRQ *Enhanced Registries* grant to support the development of the data collection and management infrastructure that will allow data to be entered *once*—during the clinical encounter—and then accessed securely for patient care, quality improvement, and research.

The National Pediatric Cardiology Quality Improvement Collaborative. Teams from 47 pediatric cardiology centers, representing most of all pediatric surgical centers that repair complex congenital heart disease in the United States, are focused on infants with complex congenital heart disease with to improve 1) care transitions at discharge; 2) interstage nutrition and growth; and 3) care coordination with the family, referring cardiologist, and primary care medical home. This is the first collaborative improvement effort in pediatric cardiology and participation provides credit towards US News and World Report ranking.

Pediatric Rheumatology—Care and Outcomes Improvement Network (PR-COIN). Eleven hospital teams have just begun working together as part of a collaborative that began in June 2011 and is focused on improving outcomes of children with juvenile idiopathic arthritis using specific disease management strategies for chronic illness care.

Faculty Members

Uma Kotagal, MBBS, MSc, Professor

*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

Director, Quality Scholars Program in Health Care Transformation

Research Interests Outcomes and risk-adjustment in pediatric emergency care. Quality of ambulatory services for vulnerable children. Health system interventions for improvement.

Adam Carle, MA, PhD, Assistant Professor

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

Linda Dynan, PhD, Adjunct

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

Anthony Goudie, PhD, Assistant Professor

Member, Child Policy Research Center

Research Interests Identifying barriers (systems and policy) to effectively treating vulnerable pediatric populations. Studying mediating factors associated with treating chronic conditions.

Carole Lannon, MD, MPH, Professor

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 t

Keith E. Mandel, MD, Assistant Professor

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

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.

Kieran J. Phelan, MD, MSc, Associate Professor

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.

Joint Appointment Faculty Members

Maria Britto, MD, MPH, Professor

Adolescent Medicine

Research Interests Health care quality, especially for adolescents with chronic illness

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.

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.

Monica Mitchell, PhD, Associate Professor

Behavioral Med & Clin Psychology

Research Interests Community based participatory research, health disparity research, nutrition and health research, translational research, sickle cell disease research

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

Stephen Muething, MD, Professor

General and Community Pediatrics

Research Interests Patient Safety, Reliability, Adverse Events

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.

Significant Accomplishments

The Chronic Care Innovation Lab

The Chronic Care Innovation Lab focused on improving asthma control for a cohort of 60 teens whose asthma had been poorly controlled the past year. We combined sequential application of our full set of evidence-based tools for medical and environmental therapy with enhanced self-management support; enhanced outreach by phone, text and collaboration with schools; and addressed barriers. To address prevalent and important barriers to asthma care, we developed, tested and implemented throughout the lab, with >95 percent reliability, tools to improve medication access for patients without insurance; to connect patients to transportation for medical appointments; and to simplify connections to mental health services. These interventions were spread to the entire Teen Health Center and are available for implementation elsewhere at Cincinnati Children's. Overall, 60 percent of the cohort had a clinically meaningful improvement in asthma control compared to a baseline of 25 percent for a similar cohort the previous year.

We continue to collaborate with external partners. Students at the University of Buffalo's Center for Socially Relevant Computing are working with us to develop a teen friendly, fully wearable air-quality sensor that would warn teens with asthma when they enter environments with elevated dust, mold and other pollutants.

Collaborative Chronic Care Networks (C3N)

Collaborative Chronic Care Networks, or C3Ns, are learning health systems. They combine data registries, reliable and accountable delivery systems and technology to harness individual motivation and collective vision to improve both individual and system health. The C3N continued to work with ImproveCareNow in creating the most comprehensive database of children with Crohn's and ulcerative colitis. It created an information "commons" to overcome academic, economic and policy barriers so that it is easier to share information and products that enable everyone involved to collaborate in health improvement innovation. The team helped the ImproveCareNow network of 30 pediatric gastroenterology care centers increase the proportion of children and adolescents with Crohn's disease and ulcerative colitis in remission from 55 percent to 76 percent without new medications.

With the initial \$8 million grant from the National Institutes of Health, we assembled a diverse team of experts from medicine and numerous other sectors who created an initial network of more than 100 patients, clinicians and researchers contributing to the IBD C3N. These teams designed and put 14 prototypes into testing. ImproveCareNow and C3N also won a \$12 million grant from the Agency for Healthcare Research and Quality to build the data and informatics infrastructure for the ImproveCareNow's C3N data network.

Capturing Clinical Outcomes from the Electronic Health Record

Anderson Center faculty and staff from the outcomes systems group worked with clinical divisions to embed

process and outcome measures of clinical care into Epic, our electronic health record. As each division began to use Epic in its ambulatory clinics, faculty and staff from the outcomes systems group worked with clinicians to identify top conditions for tracking outcomes and defining measures for each condition.

Data elements for measures were embedded in Epic with help from the Department of Information Services and are collected at the point of care not only by physicians and nurses, but sometimes by patients and parents themselves. We identified 67 conditions and defined more than 400 measures. Data and run charts are being generated for 35 conditions and 200 measures. Half of these are process-of-care measures, with the remaining representing patient outcomes. One third of the outcome measures are patient-reported measures including health function and quality of life.

This work represents our strategic initiative to develop and embed tools for measuring and improving outcomes for 100 diseases and complex disorders. It also serves a key infrastructure component of our research since we now have validated measures that track the impact of our system interventions.

Division Publications

1. Alessandrini E, Varadarajan K, Alpern ER, Gorelick MH, Shaw K, Ruddy RM, Chamberlain JM. **Emergency department quality: an analysis of existing pediatric measures.** *Acad Emerg Med.* 2011; 18:519-26.
2. Baker-Smith CM, Neish SR, Klitzner TS, Beekman RH, 3rd, Kugler JD, Martin GR, Lannon C, Jenkins KJ, Rosenthal GL. **Variation in postoperative care following stage I palliation for single-ventricle patients: a report from the Joint Council on Congenital Heart Disease National Quality Improvement Collaborative.** *Congenit Heart Dis.* 2011; 6:116-27.
3. Brady PW, Conway PH, Goudie A. **Length of intravenous antibiotic therapy and treatment failure in infants with urinary tract infections.** *Pediatrics.* 2010; 126:196-203.
4. Britto MT, Byczkowski TL, Hesse EA, Munafo JK, Vockell AL, Yi MS. **Overestimation of impairment-related asthma control by adolescents..** *J Pediatr.* 2011; 158:1028-1030.
5. Britto MT, Tivorsak TL, Slap GB. **Adolescents' needs for health care privacy.** *Pediatrics.* 2010; 126:e1469-76.
6. Brown DW, Connor JA, Pigula FA, Usmani K, Klitzner TS, Beekman RH, 3rd, Kugler JD, Martin GR, Neish SR, Rosenthal GL, Lannon C, Jenkins KJ. **Variation in preoperative and intraoperative care for first-stage palliation of single-ventricle heart disease: a report from the Joint Council on Congenital Heart Disease National Quality Improvement Collaborative.** *Congenit Heart Dis.* 2011; 6:108-15.
7. Byczkowski TL, Kollar LM, Britto MT. **Family experiences with outpatient care: do adolescents and parents have the same perceptions?.** *J Adolesc Health.* 2010; 47:92-8.
8. Byczkowski TL, Munafo JK, Britto MT. **Variation in use of Internet-based patient portals by parents of children with chronic disease.** *Arch Pediatr Adolesc Med.* 2011; 165:405-11.
9. Conway P, Goodrich K, Machlin S, Sasse B, Cohen J. **Patient-centered care categorization of U.S. health care expenditures.** *Health Serv Res.* 2011; 46:479-90.
10. Conway PH. **How the Recovery Act's Federal Coordinating Council paved the way for the Patient-Centered Outcomes Research Institute.** *Health Aff (Millwood).* 2010; 29:2091-7.
11. Conway PH, VanLare JM. **Improving access to health care data: the Open Government strategy.** *JAMA.* 2010; 304:1007-8.
12. Crandall W, Kappelman MD, Colletti RB, Leibowitz I, Grunow JE, Ali S, Baron HI, Berman JH, Boyle B, Cohen S, del Rosario F, Denson LA, Duffy L, Integlia MJ, Kim SC, Milov D, Patel AS, Schoen BT, Walkiewicz D, Margolis P. **ImproveCareNow: The development of a pediatric inflammatory bowel disease improvement network.** *Inflamm Bowel Dis.* 2011; 17:450-7.

13. DiGiuseppi C, Jacobs DE, Phelan KJ, Mickalide AD, Ormandy D. **Housing interventions and control of injury-related structural deficiencies: a review of the evidence.** *J Public Health Manag Pract.* 2010; 16:S34-43.
14. Donovan EF, Besl J, Paulson J, Rose B, Iams J. **Infant death among Ohio resident infants born at 32 to 41 weeks of gestation.** *Am J Obstet Gynecol.* 2010; 203:58 e1-5.
15. Fairbrother G, Cassidy A, Ortega-Sanchez IR, Szilagyi PG, Edwards KM, Molinari NA, Donauer S, Henderson D, Ambrose S, Kent D, Poehling K, Weinberg GA, Griffin MR, Hall CB, Finelli L, Bridges C, Staat MA. **High costs of influenza: Direct medical costs of influenza disease in young children.** *Vaccine.* 2010; 28:4913-9.
16. Fairbrother G, Simpson LA. **Measuring and reporting quality of health care for children: CHIPRA and beyond.** *Acad Pediatr.* 2011; 11:S77-84.
17. Fairbrother GL, Carle AC, Cassidy A, Newacheck PW. **The impact of parental job loss on children's health insurance coverage.** *Health Aff (Millwood).* 2010; 29:1343-9.
18. Fiks AG, Alessandrini EA, Forrest CB, Khan S, Localio AR, Gerber A. **Electronic medical record use in pediatric primary care.** *J Am Med Inform Assoc.* 2011; 18:38-44.
19. Fiks AG, Localio AR, Alessandrini EA, Asch DA, Guevara JP. **Shared decision-making in pediatrics: a national perspective.** *Pediatrics.* 2010; 126:306-14.
20. Grosseohme DH, Ragsdale J, Cotton S, Wooldridge JL, Grimes L, Seid M. **Parents' religious coping styles in the first year after their child's cystic fibrosis diagnosis.** *J Health Care Chaplain.* 2010; 16:109-22.
21. Grosseohme DH, Ragsdale J, Wooldridge JL, Cotton S, Seid M. **We can handle this: parents' use of religion in the first year following their child's diagnosis with cystic fibrosis.** *J Health Care Chaplain.* 2010; 16:95-108.
22. Hooper DK, Carle AC, Schuchter J, Goebel J. **Interaction between tacrolimus and intravenous nicardipine in the treatment of post-kidney transplant hypertension at pediatric hospitals.** *Pediatr Transplant.* 2011; 15:88-95.
23. Iyer SB, Schubert CJ, Schoettker PJ, Reeves SD. **Use of quality-improvement methods to improve timeliness of analgesic delivery.** *Pediatrics.* 2011; 127:e219-25.
24. Kaplan HC, Brady PW, Dritz MC, Hooper DK, Linam WM, Froehle CM, Margolis P. **The influence of context on quality improvement success in health care: a systematic review of the literature.** *Milbank Q.* 2010; 88:500-59.
25. Kaplan HC, Lannon C, Walsh MC, Donovan EF. **Ohio statewide quality-improvement collaborative to reduce late-onset sepsis in preterm infants.** *Pediatrics.* 2011; 127:427-35.
26. Kaplan HC, Lorch SA, Pinto-Martin J, Putt M, Silber JH. **Assessment of surfactant use in preterm infants as a marker of neonatal intensive care unit quality.** *BMC Health Serv Res.* 2011; 11:22.
27. Kaplan HC, Tabangin ME, McClendon D, Meinzen-Derr J, Margolis PA, Donovan EF. **Understanding variation in vitamin A supplementation among NICUs.** *Pediatrics.* 2010; 126:e367-73.
28. Kappelman MD, Crandall WV, Colletti RB, Goudie A, Leibowitz IH, Duffy L, Milov DE, Kim SC, Schoen BT, Patel AS, Grunow J, Larry E, Fairbrother G, Margolis P. **Short pediatric Crohn's disease activity index for quality improvement and observational research.** *Inflamm Bowel Dis.* 2011; 17:112-7.
29. Kwon JM, Guillet R, Shankaran S, Laptook AR, McDonald SA, Ehrenkranz RA, Tyson JE, O'Shea TM, Goldberg RN, Donovan EF, Fanaroff AA, Poole WK, Higgins RD, Walsh MC. **Clinical seizures in neonatal hypoxic-ischemic encephalopathy have no independent impact on neurodevelopmental outcome: secondary analyses of data from the neonatal research network hypothermia trial.** *J Child Neurol.* 2011; 26:322-8.
30. Lannon C, Peterson LE, Goudie A. **Quality measures for the care of children with otitis media with effusion.** *Pediatrics.* 2011; 127:e1490-7.

31. Margolis PA, DeWalt DA, Simon JE, Horowitz S, Scoville R, Kahn N, Perelman R, Bagley B, Miles P. **Designing a large-scale multilevel improvement initiative: the improving performance in practice program.** *J Contin Educ Health Prof.* 2010; 30:187-96.
32. McGrady ME, Cotton S, Rosenthal SL, Roberts YH, Britto M, Yi MS. **Anxiety and asthma symptoms in urban adolescents with asthma: the mediating role of illness perceptions.** *J Clin Psychol Med Settings.* 2010; 17:349-56.
33. McManus BM, Carle A, Acevedo-Garcia D, Ganz M, Hauser-Cram P, McCormick M. **Modeling the social determinants of caregiver burden among families of children with developmental disabilities.** *Am J Intellect Dev Disabil.* 2011; 116:246-60.
34. McManus BM, Carle AC, Acevedo-Garcia D, Ganz M, Hauser-Cram P, McCormick MC. **Social determinants of state variation in special education participation among preschoolers with developmental delays and disabilities.** *Health Place.* 2011; 17:681-90.
35. McPhail GL, Ednick MD, Fenchel MC, VanDyke R, Chima A, Amin RS, Seid M. **Improving follow-up in hospitalised children.** *Qual Saf Health Care.* 2010; 19:e35.
36. McPhail GL, Weiland J, Acton JD, Ednick M, Chima A, VanDyke R, Fenchel MC, Amin RS, Seid M. **Improving evidence-based care in cystic fibrosis through quality improvement.** *Arch Pediatr Adolesc Med.* 2010; 164:957-60.
37. Muething SE, Conway PH, Kloppenborg E, Lesko A, Schoettker PJ, Seid M, Kotagal U. **Identifying causes of adverse events detected by an automated trigger tool through in-depth analysis.** *Qual Saf Health Care.* 2010; 19:435-9.
38. Navathe AS, Conway PH. **Optimizing health information technology's role in enabling comparative effectiveness research.** *Am J Manag Care.* 2010; 16:SP44-7.
39. Nylund CM, Goudie A, Garza JM, Fairbrother G, Cohen MB. **Clostridium difficile infection in hospitalized children in the United States.** *Arch Pediatr Adolesc Med.* 2011; 165:451-7.
40. Oh W, Fanaroff AA, Carlo WA, Donovan EF, McDonald SA, Poole WK. **Effects of delayed cord clamping in very-low-birth-weight infants.** *J Perinatol.* 2011; 31 Suppl 1:S68-71.
41. Pasquali SK, Sun JL, d'Almada P, Jaquiss RD, Lodge AJ, Miller N, Kemper AR, Lannon CM, Li JS. **Center variation in hospital costs for patients undergoing congenital heart surgery.** *Circ Cardiovasc Qual Outcomes.* 2011; 4:306-12.
42. Phelan KJ, Khoury J, Xu Y, Liddy S, Hornung R, Lanphear BP. **A randomized controlled trial of home injury hazard reduction: the HOME injury study.** *Arch Pediatr Adolesc Med.* 2011; 165:339-45.
43. Poehling KA, Fairbrother G, Zhu Y, Donauer S, Ambrose S, Edwards KM, Staat MA, Prill MM, Finelli L, Allred NJ, Bardenheier B, Szilagyi PG. **Practice and child characteristics associated with influenza vaccine uptake in young children.** *Pediatrics.* 2010; 126:665-73.
44. Schidlow DN, Anderson JB, Klitzner TS, Beekman RH, 3rd, Jenkins KJ, Kugler JD, Martin GR, Neish SR, Rosenthal GL, Lannon C. **Variation in interstage outpatient care after the Norwood procedure: a report from the Joint Council on Congenital Heart Disease National Quality Improvement Collaborative.** *Congenit Heart Dis.* 2011; 6:98-107.
45. Shah SS, Hall M, Newland JG, Brogan TV, Farris RW, Williams DJ, Larsen G, Fine BR, Levin JE, Wagener JS, Conway PH, Myers AL. **Comparative effectiveness of pleural drainage procedures for the treatment of complicated pneumonia in childhood.** *J Hosp Med.* 2011; 6:256-63.
46. Simpson LA, Peterson L, Lannon CM, Murphy SB, Goodman C, Ren Z, Zajicek A. **Special challenges in comparative effectiveness research on children's and adolescents' health.** *Health Aff (Millwood).* 2010; 29:1849-56.
47. VanLare JM, Conway PH, Rowe JW. **Building academic health centers' capacity to shape and respond to**

- comparative effectiveness research policy**. *Acad Med*. 2011; 86:689-94.
48. Varni JW, Stucky BD, Thissen D, Dewitt EM, Irwin DE, Lai JS, Yeatts K, Dewalt DA. **PROMIS Pediatric Pain Interference Scale: an item response theory analysis of the pediatric pain item bank**. *J Pain*. 2010; 11:1109-19.
49. Vermaire D, Caruso MC, Lesko A, Kloppenborg E, Olivea J, Pruett R, Paul M, Schoettker PJ, Seid M, Varadarajan KR, Conway PH. **Quality improvement project to reduce perioperative opioid oversedation events in a paediatric hospital**. *BMJ Qual Saf*. 2011; .
50. White CM, Schoettker PJ, Conway PH, Geiser M, Olivea J, Pruett R, Kotagal UR. **Utilising improvement science methods to optimise medication reconciliation**. *BMJ Qual Saf*. 2011; 20:372-80.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards	Annual Direct / Project Period	Direct
CARLE, A		
Assessing Measurement Bias Impact		
National Institutes of Health(University of North Florida)		
R15 NR 010631	08/01/09-03/31/12	\$50,820
Healthcare Capital Investment Plan Evaluation of Leadership Training		
Department of Veteran Affairs(University of Cincinnati)		
	10/01/10-09/30/12	\$28,294
DONOVAN, E		
Perinatal Quality Improvement Project and Data Infrastructure Development		
Ohio Department of Health(Ohio State University)		
	01/04/11-06/30/12	\$482,575
FAIRBROTHER, G		
Research to Evaluate the Ohio Medicaid Expansion		
Center for Medicare/Medicaid Services(University of Cincinnati)		
	08/16/08-06/30/11	\$222,645
Prevention and Wellness - Leveraging National Organizations		
Department of Health and Human Services(American Academy of Pediatrics)		
	07/15/10-07/14/12	\$36,058
Child Well-Being Survey		
United Way of Greater Cincinnati		
	01/01/11-12/31/11	\$40,000
Child Well-Being Survey		
The Health Foundation of Greater Cincinnati		
	01/01/11-12/31/11	\$60,000
GOUDIE, A		
Impact on Families Caring for Children with Complex Health Conditions		
Ohio Department of Jobs and Family Services(Ohio State University)		
	11/01/10-06/30/11	\$45,455
Ohio Disability Impact Study		
Ohio Developmental Disabilities Council(Ohio State University)		
	04/01/10-12/31/10	\$13,675
LANNON, C		
Expanding the Ohio Immunization Registry to Include BMI		
Centers for Disease Control and Prevention(Hamilton County General Health District)		
	05/24/10-02/25/12	\$417,353

Pursuing Perfection in Pediatric Therapeutics

Agency for Healthcare Research and Quality

U18 HS 016957 09/01/07-08/31/11 \$341,552

Center of Excellence for Improving Child Health Outcomes

Ohio Department of Jobs and Family Services(University of Cincinnati)

01/12/09-06/30/11 \$168,342

Center of Excellence for Improving Child Health Outcomes

University of Cincinnati

03/28/08-06/30/11 \$168,342

Perinatal Improvement Project

Ohio Department of Jobs and Family Services(Ohio State University)

01/04/11-06/30/12 \$136,726

MARGOLIS, P**Open Source Science: Transforming Chronic Illness Care**

National Institutes of Health

R01 DK 085719 09/30/09-08/31/14 \$1,010,740

Center for Healthier Children, Families & Communities

W. K. Kellogg Foundation(UCLA School of Public Health)

04/01/09-03/30/12 \$138,343

Winning Beginnings

United Way of Greater Cincinnati

04/01/10-12/31/10 \$10,000

PIBDNet Trailblazer Collaborative

The Pedi IBD Network for Res & Improvement

07/01/10-06/30/11 \$319,962

AF4Q Planning Project

American Board of Medical Specialities

07/01/10-06/30/11 \$122,000

AR4Q GWU

American Board of Medical Specialities(George Washington University)

07/01/10-06/30/11 \$156,867

PIBDNet Trailblazer Collaborative

The Pedi IBD Network for Res & Improvement

07/01/10-06/30/11 \$176,139

PHELAN, K**Injury Prevention in a Home Visitation Population**

National Institutes of Health

R01 HD 066115 09/28/10-07/31/15 \$414,183

Current Year Direct \$4,560,071**Total \$4,560,071**