

Division Details

Division Data Summary

Research and Training Details

Number of Faculty	10
Number of Joint Appointment Faculty	12
Number of Support Personnel	175
Direct Annual Grant Support	\$3,592,152
Peer Reviewed Publications	35

Division Photo



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

Significant Accomplishments

Ohio Children's Hospitals' Solutions for Patient Safety

With leadership from Stephen Muething, MD, the Anderson Center aims to build patient and clinician network communities to work together in order to improve care and outcomes. This year the Ohio Children's Hospitals' Solutions for Patient Safety received \$4.3 million from the Center for Medicare & Medicaid Innovation (CMMI) to spread the existing safety programs in the original eight Ohio hospitals to an additional 25 Phase I early adopter pediatric hospitals, forming a national network of 33 hospitals devoted to safety improvement. OCHSPS was the only pediatric-focused hospital network to receive grant support from the CMMI this year. In January, the network will add 50 hospitals.

In the 33 hospitals, leadership is committed to working together toward shared goals, being transparent, acting with a sense of urgency, and to not competing on safety. The network takes an "All Teach, All Learn" approach, following the philosophy that network hospitals share all information and learning within and beyond the network in order to lift collective safety performance.

Next year, the hospitals will focus on outcomes and learning through testing to reduce hospital acquired conditions by 40 percent, reduce preventable readmissions by 20 percent, to reduce serious safety events by 25 percent by end of 2013.

Model for Understanding Success in Quality

As a grantee of Robert Wood Johnson Foundation's *Pursuing Perfection* program, Cincinnati Children's effectively improved quality in several areas. However, it was clear that quality improvement (QI) projects vary greatly in their results. Based on the *Pursuing Perfection* experience and QI methods in other industries, a group of investigators from the Anderson Center were convinced that variation in the success of QI initiatives

was a not a result of ineffective QI methods, but was due to variation in implementation contexts.

Investigators led by Heather Kaplan, MD, MSCE, have developed a new model that organizations and implementation researchers can use to study, understand and optimize contextual factors that impact a QI project's likelihood of success. The team reviewed the literature and received input from a panel of QI experts from healthcare and industry to develop the Model for Understanding Success in Quality (MUSIQ). This model identifies 25 contextual factors across multiple levels of the healthcare system and hypothesizes how these factors influence QI success. The team has conducted preliminary tests of the validity of MUSIQ in 74 QI projects and they have developed collaborations with researchers around the world to continue refining and testing the model.

Improving Measurement of Self-Reported Health (Dr. Esi Morgan-Dewitt)

The Patient Reported Outcomes Measurement Information System (PROMIS[®]) is improving the way we assess health from the patient's perspective. Cincinnati Children's is a site in the NIH PROMIS[®] group of researchers, using measurement science to develop patient reported outcomes measures that are informative and responsive to change in well-being. PROMIS[®] items assessing areas of physical, mental and social health may be administered in paper format, or as a computerized test, which uses algorithms to select the most informative questions for a patient based on responses to earlier questions. The goal with either method is to measure self-reported health more efficiently, with patients answering fewer questions than with more traditional self-report health measures. Administering PROMIS[®] scales on electronic devices increases ease of use both for researchers and patients.

Esi Morgan Dewitt, MD, MSCE, leads a team of Cincinnati Children's researchers who are conducting validation studies of PROMIS in children with juvenile idiopathic arthritis, chronic pain, and cerebral palsy. The team also is developing new pediatric measures of pain behaviors and pain quality. This project will enable researchers to incorporate PROMIS[®] measures into research, and clinicians to follow patient progress and measure change in outcomes of importance to patients over time.

Division Highlights

Anderson Center External Advisory Council

In early 2012 the Anderson Center began efforts toward convening an External Advisory Council to provide ongoing insight and guidance around strategic issues that would arise as the Anderson Center continued to grow and evolve. As envisioned, the ideal group would be comprised of thought leaders with expertise across a number of spectrums - technology, innovation, and systems thinking. True to this idea, Louise Liang (Kaiser Permanente), Frank Moss (MIT Media Lab), Paul Batalden (Dartmouth), and former Secretary of the Treasury Paul O'Neill agreed to sit on the Council and help drive the Anderson Center's vision to reality by challenging our thinking, stretching our aspirations, guiding our strategic direction and exposing us to new ideas and innovations.

In April, the Anderson Center held the first meeting of the External Advisory Council. As anticipated, the discussions and observations were tremendously insightful, and provided the unbiased, reflective opinions needed as the Center continues planning for the future. The dialogue honed in on several areas of focus in the upcoming year, including looking at how to better leverage technology to drive innovation, finding ways to develop innovative approaches that more fully engage patients and families, and how we will effectively sustain

our improvement momentum. Following the meeting, Anderson Center leaders have worked to integrate these themes into the Anderson Center operational plans and strategic prioritization for 2013, as well as align efforts in these areas with broader organizational goals. Moving into next year, we will continue to engage the Executive Advisory Council members as we implement these plans and will reconvene the group in the spring of 2013.

Safety

Under the leadership of Dr. Steve Muething,

- Solutions for Patient Safety received \$4.3 million from the Center for Medicare & Medicaid Innovation to spread the existing safety programs in the original 8 Ohio hospitals to an additional 25 Phase I early adopter pediatric hospitals across the nation,
- The Anderson Center helped CCHMC meet our strategic plan goal for employee safety with significant reduction in OSHA recordable injuries, and
- We initiated Human factors work with initial effort focusing on monitoring reliability.

Chronic and Complex Disease

Under the leadership of Dr. Uma Kotagal, we had several significant accomplishments in this area:

- In support of the CCHMC strategic plan, the Anderson Center completed the Care Coordination and Outcomes rollout design in partnership with Information Services and Patient Services, and
- We also completed the Care Integration Pilot in 2 conditions, Liver Transplant and IBD.

Community Health

- In support of the CCHMC strategic plan, Dr. Robert Kahn led efforts develop effective core pop health infrastructure teams to coach and measure outcomes improvement in prematurity/infant mortality, asthma, obesity, young child injury prevention, and early child development.
- In addition, we executed frequent PDSA testing in community agencies, with some by community partners including PHHC, CPS, Norwood Health Dept, Literacy West, and Javonte Woods youth group,
- We tested a community organizing framework in Norwood that led to safety improvements in 70+ homes, and
- We developed proposal in conjunction with IHI and community lead agencies for funding QI strategies in the community for better health and social outcomes

Productivity

Dr. Fred Ryckman led several notable and successful initiatives this year:

- Physiologically Ready for Discharge: We developed processes and procedures to identify ready criteria and achieved 60% target of discharging patients within 2 hours. Significantly reduced Length of Stay for the six conditions selected to participate in the trial when following the new process.
- Capacity Planning for the Future:
 - ICU Bed Prediction Project: We completed first system-wide analysis of ICU capacity that incorporated planned growth by Division and/or condition.
 - Heart Institute Capacity Planning: We developed in-depth simulation model that identified bed needs for Floor, ICU, and Recovery bays that incorporated current demand and projected growth by diagnosis.
- ED to Inpatient Flow Failures: We made process improvements to reduce median % of patients waiting more

than one hour for admission from 35% to 18%.

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 three community-building events (two HSR Open Houses in September and a workshop on Leading Effective Research Programs) and hosted 19 speakers for the HSR Matrix.
- We also strengthened collaborations with other CCHMC divisions through grant submissions and projects (Pulmonary, Rheumatology, GI, General Pediatrics, Cardiology, Neonatology).

Learning Networks

Under the leadership of Dr. Carole Lannon,

- The Anderson Center continued efforts toward fulfilling the CCHMC strategic plan around Learning Networks, this year building an effective Learning Networks core infrastructure and initiating a learning collaborative among 5 CCHMC-supported networks.
- In addition, we used our 'learning networks theme' to successfully compete for pediatric Center for Education and Research in Therapeutics (CERTs); CCHMC was one of only 6 Centers funded, and the only pediatric CERT, and
- We sponsored National Collaborative Improvement Networks meeting and National Meeting on Building Capacity in Quality and Safety in collaboration with the American Board of Pediatrics.

Leadership Academy

Under the leadership of Dr. Evie Allesandrini, the Leadership Academy continued to oversee and grow successful QI training programs:

- Quality Scholars had the largest number of applicants (10) in the 5 years of the program's history and have accepted the largest incoming class. The program welcomed 5 new scholars, and a first scholar from the Department of Surgery.
- RCIC: We completed 6 RCICs with a total of 352 participants; total of 67 teams/projects. A median of 88% of RCIC Projects demonstrated at least modest improvement by Graduation.
- I2S2: 55 new students completed the program, with 86% achieving modest results and 74% achieving significant results or better. One project scored a 9 (the highest possible score). This was our second 9 ever, exceeded a national benchmark in ED radiology turnaround time.

Division Publications

1. Alessandrini EA, Alpern ER, Chamberlain JM, Shea JA, Holubkov R, Gorelick MH. **Developing a diagnosis-based severity classification system for use in emergency medical services for children.** *Academic Emergency Medicine.* 2012; 19:70-8.
2. Belanoff CM, McManus BM, Carle AC, McCormick MC, Subramanian SV. **Racial/ethnic variation in breastfeeding across the US: a multilevel analysis from the National Survey of Children's Health, 2007.** *Matern Child Health J.* 2012; 16 :S14-26.
3. Bethell C, Forrest CB, Stumbo S, Gombojav N, Carle A, Irwin CE. **Factors promoting or potentially impeding school success: disparities and state variations for children with special health care needs.**

Matern Child Health J. 2012; 16 Suppl 1:S35-43.

4. Black MH, Anderson A, Bell RA, Dabelea D, Pihoker C, Saydah S, Seid M, Standiford DA, Waitzfelder B, Marcovina SM, Lawrence JM. **Prevalence of asthma and its association with glycemic control among youth with diabetes.** *Pediatrics.* 2011; 128:e839-47.
5. Brinkman WB, Hartl J, Rawe LM, Sucharew H, Britto MT, Epstein JN. **Physicians' shared decision-making behaviors in attention-deficit/hyperactivity disorder care.** *Arch Pediatr Adolesc Med.* 2011; 165:1013-9.
6. Brinkman WB, Sherman SN, Zmitrovich AR, Visscher MO, Crosby LE, Phelan KJ, Donovan EF. **In their own words: adolescent views on ADHD and their evolving role managing medication.** *Acad Pediatr.* 2012; 12:53-61.
7. Britto MT. **Society for Pediatric Research Presidential Address 2011: improving child health outcomes--from 65 roses to high reliability.** *Pediatr Res.* 2012; 71:311-4.
8. Britto MT, Munafo JK, Schoettker PJ, Vockell AL, Wimberg JA, Yi MS. **Pilot and feasibility test of adolescent-controlled text messaging reminders.** *Clin Pediatr (Phila).* 2012; 51:114-21.
9. Carle AC, Cella D, Cai L, Choi SW, Crane PK, Curtis SM, Gruhl J, Lai JS, Mukherjee S, Reise SP, Teresi JA, Thissen D, Wu EJ, Hays RD. **Advancing PROMIS's methodology: results of the Third Patient-Reported Outcomes Measurement Information System (PROMIS((R))) Psychometric Summit.** *Expert Rev Pharmacoecon Outcomes Res.* 2011; 11:677-84.
10. Carle AC, Dewitt EM, Seid M. **Measures of health status and quality of life in juvenile rheumatoid arthritis: Pediatric Quality of Life Inventory (PedsQL) Rheumatology Module 3.0, Juvenile Arthritis Quality of Life Questionnaire (JAQQ), Paediatric Rheumatology Quality of Life Scale (PRQL), and Childhood Arthritis Health Profile (CAHP).** *Arthritis Care Res (Hoboken).* 2011; 63 Suppl 11:S438-45.
11. Chima RS, Schoettker PJ, Varadarajan KR, Kloppenborg E, Hutson TK, Brilli RJ, Repaske DR, Seid M. **Reduction in hypoglycemic events in critically ill patients on continuous insulin following implementation of a treatment guideline.** *Qual Manag Health Care.* 2012; 21:20-8.
12. Crandall WV, Boyle BM, Colletti RB, Margolis PA, Kappelman MD. **Development of process and outcome measures for improvement: lessons learned in a quality improvement collaborative for pediatric inflammatory bowel disease.** *Inflamm Bowel Dis.* 2011; 17:2184-91.
13. Cullinan MP, Palmer JE, Carle AD, West MJ, Seymour GJ. **Long term use of triclosan toothpaste and thyroid function.** *Sci Total Environ.* 2012; 416:75-9.
14. Fieldston ES, Alpern ER, Nadel FM, Shea JA, Alessandrini EA. **A qualitative assessment of reasons for nonurgent visits to the emergency department: parent and health professional opinions.** *Pediatr Emerg Care.* 2012; 28:220-5.
15. Fiks AG, Mayne S, Localio AR, Alessandrini EA, Guevara JP. **Shared decision-making and health care expenditures among children with special health care needs.** *Pediatrics.* 2012; 129:99-107.
16. Goudie A, Carle AC. **Ohio study shows that insurance coverage is critical for children with special health care needs as they transition to adulthood.** *Health Aff (Millwood).* 2011; 30:2382-90.
17. Grosseohme DH, Opiari-Arrigan L, VanDyke R, Thurmond S, Seid M. **Relationship of adherence determinants and parental spirituality in cystic fibrosis.** *Pediatr Pulmonol.* 2012; 47:558-66.
18. Heaton PC, Schuchter J, Lannon CM, Kemper AR. **Impact of drug label changes on propofol use in pediatrics for moderate conscious sedation.** *Clin Ther.* 2011; 33:886-95.
19. Hilliard ME, Rohan JM, Carle AC, Pendley JS, Delamater A, Drotar D. **Fathers' involvement in preadolescents' diabetes adherence and glycemic control.** *J Pediatr Psychol.* 2011; 36:911-22.
20. Huang IC, Leite WL, Shearer P, Seid M, Revicki DA, Shenkman EA. **Differential item functioning in quality of life measure between children with and without special health-care needs.** *Value Health.* 2011; 14:872-83.
21. Kaplan HC, Provost LP, Froehle CM, Margolis PA. **The Model for Understanding Success in Quality**

- (MUSIQ): building a theory of context in healthcare quality improvement.** *BMJ Qual Saf.* 2012; 21:13-20.
22. Linam WM, Margolis PA, Atherton H, Connelly BL. **Quality-improvement initiative sustains improvement in pediatric health care worker hand hygiene.** *Pediatrics.* 2011; 128:e689-98.
 23. Lipstein EA, Brinkman WB, Britto MT. **What is known about parents' treatment decisions? A narrative review of pediatric decision making.** *Med Decis Making.* 2012; 32:246-58.
 24. McManus BM, Carle AC, Poehlmann J. **Effectiveness of part C early intervention physical, occupational, and speech therapy services for preterm or low birth weight infants in Wisconsin, United States.** *Acad Pediatr.* 2012; 12:96-103.
 25. Parshall MB, Carle AC, Ice U, Taylor R, Powers J. **Validation of a three-factor measurement model of dyspnea in hospitalized adults with heart failure.** *Heart Lung.* 2012; 41:44-56.
 26. Saldana SN, Hooper DK, Froehlich TE, Campbell KM, Prows CA, Sadhasivam S, Nick TG, Seid M, Vinks AA, Glauser TA. **Characteristics of successful recruitment in prospective pediatric pharmacogenetic studies.** *Clin Ther.* 2011; 33:2072-81.
 27. Schaffer PL, Daraiseh NM, Daum L, Mendez E, Lin L, Huth MM. **Pediatric inpatient falls and injuries: a descriptive analysis of risk factors.** *J Spec Pediatr Nurs.* 2012; 17:10-8.
 28. Seid M. **Predictors of health-related quality of life in children and adolescents with juvenile idiopathic arthritis.** *Arthritis Care Res (Hoboken).* 2012; 64:652.
 29. Seid M, D'Amico EJ, Varni JW, Munafa JK, Britto MT, Kercksmar CM, Drotar D, King EC, Darbie L. **The in vivo adherence intervention for at risk adolescents with asthma: report of a randomized pilot trial.** *J Pediatr Psychol.* 2012; 37:390-403.
 30. Superina R, Magee JC, Brandt ML, Healey PJ, Tiao G, Ryckman F, Karrer FM, Iyer K, Fecteau A, West K, Burns RC, Flake A, Lee H, Lowell JA, Dillon P, Colombani P, Ricketts R, Li Y, Moore J, Wang KS. **The anatomic pattern of biliary atresia identified at time of Kasai hepatopertoenterostomy and early postoperative clearance of jaundice are significant predictors of transplant-free survival.** *Ann Surg.* 2011; 254:577-85.
 31. 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; 20:895-902.
 32. Waitzfelder B, Pihoker C, Klingensmith G, Case D, Anderson A, Bell RA, Lawrence JM, Mayer-Davis EJ, Imperatore G, Standiford D, Rodriguez BL, Dabelea D, Seid M. **Adherence to guidelines for youths with diabetes mellitus.** *Pediatrics.* 2011; 128:531-8.
 33. Wheeler DS, Giaccone M, Hutchinson N, Haygood M, Demmel K, Britto MT, Margolis PA, Provost LP. **An unexpected increase in catheter-associated bloodstream infections at a children's hospital following introduction of the Spiros closed male connector.** *Am J Infect Control.* 2012; 40:48-50.
 34. Wheeler DS, Giaccone MJ, Hutchinson N, Haygood M, Bondurant P, Demmel K, Kotagal UR, Connelly B, Corcoran MS, Line K, Rich K, Schoettker PJ, Brill R. **A hospital-wide quality-improvement collaborative to reduce catheter-associated bloodstream infections.** *Pediatrics.* 2011; 128:e995-e1004; quiz e1004-7.
 35. Yi-Frazier JP, Hood K, Case D, Waitzfelder B, Anderson A, Bloch CA, Naughton M, Seid M, Imperatore G, Loots B, Bell R, Lawrence JM. **Caregiver reports of provider recommended frequency of blood glucose monitoring and actual testing frequency for youth with type 1 diabetes.** *Diabetes Res Clin Pract.* 2012; 95:68-75.

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

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

Leadership 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

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.

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.

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 (Behaviorial 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.

Grants, Contracts, and Industry Agreements

Grant and Contract Awards Annual Direct

LANNON, C

Centers for Education and Research on Therapeutics (CERT)

Agency for Healthcare Research and Quality

U19 HS 021114

09/30/11-08/31/16

\$555,555

Children's Mental Health Learning Collaborative

American Academy of Pediatrics(Ohio State University)

02/01/12-06/30/12

\$8,261

Statewide Quality Improvement - MEDTAPP-BEACON Quality Improvement Projects

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

09/26/11-06/30/12

\$227,273

MANDEL, K

CCHMC Strategic Focus on Population Health Improvement

Department of Health and Human Services(Healthbridge)

09/01/10-03/31/13

\$741,275

Technical Assistance Support of the Beacon Communities Program

Department of Health and Human Services(Booz Allen Hamilton)

BAH99878XSB23	01/01/11-09/29/13	\$98,384
MARGOLIS, P		
Center for Healthier Children, Families & Communities		
W. K. Kellogg Foundation(UCLA School of Public Health)		
1638GMA008	04/01/09-03/30/12	\$124,000
Open Source Science: Transforming Chronic Illness Care		
National Institutes of Health		
R01 DK 085719	09/30/09-08/31/14	\$974,194
PHELAN, K		
Injury Prevention in a Home Visitation Population		
National Institutes of Health		
R01 HD 066115	09/28/10-07/31/15	\$394,718
ROSE, B		
Perinatal Quality Improvement		
Ohio State University		
	11/16/11-06/30/12	\$374,650
SEBASTIAN, R		
School Based Health Center Improvement Project		
Department of Health and Human Services(State of Colorado)		
	10/20/11-02/21/12	\$93,842
	Current Year Direct	\$3,592,152
	Total	\$3,592,152