

2015 Research Annual Report

Hospital Medicine

RESEARCH AND TRAINING DETAILS



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Faculty	31
Joint Appointment Faculty	9
Support Personnel	14
Direct Annual Grant Support	\$742,464
Direct Annual Industry Support	\$14,017
Peer Reviewed Publications	122

CLINICAL ACTIVITIES AND TRAINING

Staff Physicians	8
Clinical Fellows	7
Inpatient Encounters	25,731

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Research Highlights

Reducing the Trauma of Hospitalization

Hospitalization saves lives and speeds recovery from severe illnesses, but remains a stressful, disruptive, and traumatic experience for children and families. While much of the stress of hospitalization—missed school and work, parents needing to split time between kids in and out of the hospital—is outside the hospital team's direct influence, many things in

modern hospitals increase stress and reduce opportunities for rest and recovery. For example, hospital monitors noisily alarm more than 100 times per patient per day on average, most commonly for reasons that do not need any action. Feeding pumps, IV pumps, and nurse call buttons add to the noise in patient rooms. Too often nurses and doctors fail to introduce themselves, plan with families for discharge, or provide a safety net post-hospital discharge.

Division members are systematically addressing these issues to reduce the trauma of hospitalization. Drs. [Amanda Schondelmeyer](#), [Angela Statile](#), [Jeffrey Simmons](#), and [Patrick Brady](#) performed a quality improvement intervention, which significantly reduced the number of patients that were kept on monitors after they started to improve from respiratory illness. Dr. [Ndidi Unaka](#) is leading a team that has developed “baseball card style” business cards that will allow physicians to introduce themselves to families and children in a way that is fun and engaging. Getting back to life post-hospitalization is challenging for many families and Drs. [Samir Shah](#) and [Jeffrey Simmons](#) lead a research team that is evaluating the effect of a home nursing visit post-hospital discharge. The division faculty’s work aims to improve both the experience of hospitalization and the transition back to home for the children and families for whom they care.

Destination Excellence

In October, [Dr. Christine White](#) was named the medical director of the Center for Destination Excellence. In order to serve the rising number of patients and families who travel to Cincinnati Children’s Hospital Medical Center and to address their individual complexities, the Center of Destination Excellence was launched with a dedicated focus on this vulnerable patient population. In her role as the medical director, Dr. White will work closely with the Department of Strategy and Growth to help set our strategic and operational plans. She will also partner with medical and surgical divisions to develop processes for safe intake, care and discharge for patients travelling to our institution from other states or countries for care.

Caring for Adults at a Children's Hospital

Survival into adulthood is now common for many diseases that were historically fatal in childhood, such as congenital heart disease, extreme prematurity and childhood cancer. Many of these adult “survivors” still receive care from specialists at Cincinnati Children’s. In 2014 the Division of Hospital Medicine debuted the Hospital Medicine Adult Care (HMAC) service staffed by physicians trained in both Internal Medicine and Pediatrics. These specialized hospitalists provide consultative care to help manage adult medical conditions in patients over 21 years of age who require admission to Cincinnati Children’s to receive care from pediatric specialists. Common reasons for consultation include essential hypertension, type II diabetes, and tobacco dependence. HMAC physicians have also developed protocols to address adult-related medical emergencies such as chest pain, stroke and pulmonary embolism; these protocols are available on the new adult care website on Centerlink. HMAC physicians have also led development and implementation of an adult early warning system to facilitate the identification of adults at risk for clinical deterioration and are developing a simulation program to ensure care providers at Cincinnati Children’s maintain competence in caring for adults and adult-related medical emergencies. Finally, HMAC works closely with the physicians from the Division of Adolescent and Transition Medicine to help facilitate transition of these patients to outpatient adult care providers when appropriate.

Excellence, Leadership, and Innovation in Medical Education and Teaching

The Division of Hospital Medicine has a strong history of leadership, innovation and excellence in medical education. Over the past 10 years six faculty members from the division have won the Faculty Teaching Award from the graduating senior residents, including 2015 recipient [Dr. Ndidi Unaka](#). In 2013, just months after celebrating its first anniversary as an official division, Hospital Medicine won the Division Teaching Award from the graduating residents. Via its various service lines at the Burnet and Liberty campuses our faculty members have over 500 learner encounters annually and are involved in facilitating in various teaching activities for the department, including resident morning report and noon conference, medical student small group sessions, professional development series for fellows and faculty development sessions through the Office of Faculty Development. Many faculty within the division have a career focus in medical education; scholarship includes innovative work in milestone assessment of learners and teachers, health literacy, teaching

approaches during family centered rounds, residents as teachers, teaching QI methodology to trainees, transitions in care and improving the communication skills of medical students and residents. The division holds close ties to the General Pediatrics Medical Education Fellowship at Cincinnati Children's and the IMSTAR Medical Education Fellowship in the **UC Department of Medical Education**; these programs are committed to training fellows in medical education theory, leadership and scholarship. Along with faculty in the **Division of General Pediatrics**, HM faculty lead Cincinnati Children's multi-disciplinary Medical Education Scholarship Team (MEST).

Hospital Medicine - Liberty Campus Expansion

Hospital Medicine has partnered with a multidisciplinary group in preparing healthcare providers for the opening of the expanded **Liberty Campus hospital**, which now includes 42 inpatient rooms. Collaborating groups included **Patient Services**, the **Simulation Center**, **Intensive Care (PICU)**, and **Anesthesia**, and the **Center for Telehealth**. Several key strategies helped providers prepare for and maintain skills in emergency management of critically ill children. A simulation course provided hands on learning with a focus on teamwork during medical codes. An airway management course equipped providers to handle patients with difficulty breathing. The Cincinnati Children's Simulation Center has dedicated training space at the Liberty Campus to provide continuing education. Telemedicine consultation with critical care or medical or surgical subspecialty services permits real-time bedside collaboration. Additionally, daily scheduled telemedicine rounds between hospital medicine and critical care physicians will expand the capability of the Liberty Campus to care for patients with even greater medical complexity.

Lillian Ambroggio, PhD and Samir S. Shah, MD, MSCE

Academic-Community Research Partnership Award

A multidisciplinary team, led by Drs. **Lillian Ambroggio** and **Samir S. Shah**, received the Academic-Community Research Partnership Award from the **Center for Clinical and Translational Science Training**. This award honors excellence in leadership, collaboration and health promotion in the Greater Cincinnati/Northern Kentucky region, specifically for advancing health and wellness in children in the community. This project focused on implanting evidence-based care for children with pneumonia diagnosed in the office setting. Team members included **Dr. William Brinkman** as well as physicians from multiple community practices, including Drs. Paul Korn, Marcie Strasser, **Camille Graham**, Charles Cavallo, and Katherine Brady.

Amanda Schondelmeyer, MD, MSc

Pediatric Grand Prize Winner, Society of Hospital Medicine Choosing Wisely Competition

Dr. Amanda Schondelmeyer, hospital medicine fellow, led a team that received the inaugural **Pediatric Grand Prize at the Choosing Wisely Competition sponsored by the Society of Hospital Medicine**. Children hospitalized with respiratory conditions such as asthma and bronchiolitis often receive monitoring by pulse oximetry to detect low oxygen levels. However, exuberant monitoring practices may not benefit the patient and may contribute to longer hospitalizations. Her project, titled "Reducing continuous pulse oximetry use in children with wheezing," reduced the time children with asthma or bronchiolitis received monitoring by pulse oximetry. *Choosing Wisely* is an initiative of the American Board of Internal Medicine focused on reducing non-value added care. Team members included Drs. **Patrick Brady**, **Jeffrey Simmons**, and **Angela Statile**.

Andrew Beck, MD, MPH and Samir S. Shah, MD, MSCE

Division faculty, Drs. **Andrew Beck** and **Samir S. Shah**, along with Dr. Todd Florin from the **Division of Emergency Medicine**, received the Pediatric Hospital Medicine Abstract Research Award from the Section on Hospital Medicine at the American Academy of Pediatrics National Conference and Exhibition (October 2014) for their study titled "Geographic variation in hospitalization for pediatric lower respiratory tract infections across one county."

Angela Statile, MD, MEd

Dr. Angela Statile, assistant professor of pediatrics, led a multidisciplinary team that received the Top Abstract Award at annual Institute for Healthcare Improvement Scientific Symposium held in Orlando, FL. Medically complex children pose significant challenges to providing timely and efficient discharge from the hospital. The project, titled “Optimizing Discharge Efficiency in Medically Complex Pediatric Patients,” used a novel approach to helping patients get home sooner. Rather than focusing on discharging patients by a specific time of day, **Dr. Statile** and her team focused on discharging patients within two hours of meeting individualized safe discharge criteria. Within nine months of starting interventions, Dr. Statile and her team were able to discharge 80% of children within two hours of meeting their safe discharge goals. Key interventions included care coordination rounds with a multidisciplinary care team. Additional division team members included Drs. **Amanda Schondelmeyer**, **Joanna Thomson**, **Laura Brower**, and **Christine White**.

Patrick Conway, MD, MSc

Institute of Medicine

Dr. Patrick Conway, associate professor of pediatrics and Deputy Administrator for Innovation and Quality and the Chief Medical Officer of the Centers for Medicare and Medicaid Services, was elected to the Institute of Medicine (IOM). The IOM recognizes individuals who have demonstrated outstanding professional achievement. Election to the IOM is considered one of the highest honors in the fields of health and medicine.

Grant Mussman, MD, MHSA

Dr. Grant Mussman, assistant professor of pediatrics, was inducted into the Upsilon Phi Delta honor society, Xavier University Chapter. The mission of the Upsilon Phi Delta Honor Society is to recognize, reward, and encourage academic excellence in the study of health administration.

Samir S. Shah, MD, MSCE

Dr. Samir Shah, division director and the James M. Ewell professor of pediatrics, received the Miller-Sarkin Mentoring Award from the Academic Pediatric Association. This award recognizes Dr. Shah for providing outstanding mentorship to learners or colleagues, both locally and nationally, and for serving as a model to others who aspire to mentor others as they mature. Dr. Shah received the award in May at the Pediatric Academic Societies’ Annual Meeting in San Diego, CA.

Ndidi Unaka, MD

Dr. Ndidi Unaka, assistant professor of pediatrics and Associate Residency Program director, received the Faculty Teaching Award from the graduating senior resident class for her exceptional teaching ability and commitment to resident education.

Christine White, MD, MAT

Dr. Christine White received the Cincinnati Children’s Junior Faculty Clinical Care Achievement Award. She is associate professor of pediatrics. Medical director of the Hospital Medicine Burnet Campus Service, and medical director of Destination Excellence. Dr. White led creation of the new complex care inpatient team (yellow team), an achievement that supports the hospital’s strategic plan to improve flow and value for this high-risk group. Dr. White’s research has focused on improvement science specifically implementing novel interventions to improve discharge efficiency.

Additionally, Drs. **Ndidi Unaka** and **Christine White** were invited to serve on **Dr. Margaret Hostetter**’s Department Leadership Council as Next Generation Leaders. In their roles, Dr. Unaka will partner with Dr. Tom Dewitt, the associate chair for education, and Dr. White will partner with Dr. Derek Wheeler, associate chair for clinical affairs.

Anita Shah, DO

Dr. Anita Shah, hospital medicine fellow, received a Legislative Conference Scholarship from the American Academy of

Pediatrics.

Amy Rule, MD

Dr. Amy Rule, hospital medicine fellow, received a grant from the Child Health Foundation to develop a novel approach to improving provide skills in neonatal resuscitation at Tenwek Hospital in Kenya.

Samir S. Shah, MD, MSCE and Jeffery M. Simmons, MD, MSc

The Hospital-to-Home Outcomes Study (H2O): Improving the Fluidity of Patient Transitions

The transition from hospital to home can be stressful for patients and their families. The H2O study, funded by the Patient-Centered Outcomes Research Institute and led by Drs. Samir S. Shah and Jeffery M. Simmons, seeks to determine whether a home nurse visit following hospital discharge can improve patient outcomes. The study team also includes division members Drs. Katherine Auger, Andrew Beck, Angela Statile, and Christine White, as well as co-investigators from Patient Services and the Division of Biostatistics and Epidemiology. The study team is using a novel approach called “short-term, focused engagement,” which allow families to provide feedback on their hospital experience and challenges they experienced in the days following hospital discharge, and offer suggestions on how to make the home nurse visit most useful for families.

Jennifer O'Toole, MD, MEd and Aarti Patel, MD

Improving Communication to Reduce Medical Errors

Family engagement in medical decision-making is an important aspect of hospital care. However, the manner in which physicians, nurses, and families interact on medical rounds and during the course of the day is not well structured. Furthermore, communication is not usually tailored to the preferences and health literacy levels of diverse families and patients. In 2014 the I-PASS Institute, funded by \$2 million grant from the Patient Centered Outcomes Research Institute (PCORI), embarked upon the Patient and Family Centered I-PASS Study. This study will determine if improving communication among physicians, nurses, and families, and integrating families into all aspects of decision-making will improve patient safety and the patient/family experience during hospitalization. Drs. Jennifer O'Toole and Aarti Patel, along with nursing leaders from one of our hospital medicine units, are serving as the Cincinnati Children's site investigators and are leading the implementation of the innovative intervention here at Cincinnati Children's. The intervention for this project includes health literacy training, structured team communication techniques on rounds, simulation training, faulty development efforts, a written rounds report for patients and families and an innovative campaign to reinforce the intervention.

Significant Publications

Brady PW, Zix J, Brilli R, Wheeler DS, Griffith K, Giaccone MJ, Dressman K, Kotagal U, Muething S, Tegtmeier K.

Developing and evaluating the success of a family activated medical emergency team: a quality improvement report. *BMJ Qual Saf*. 2015 Mar;24(3):203-11.

Mom knows best: Medical response teams bring critical care resources to assist in the rapid identification and treatment of worsening hospitalized patients. Many hospitals, however, fear allowing patients and families to directly call this team may result in over-calling that may distract clinicians from other ill patients. In this study, the largest to evaluate family calling of the medical response team, Dr. Brady and colleagues described both the development and implementation of the family activation process at Cincinnati Children's as well as the outcomes of the family calls. Families called uncommonly and often recognized significant deterioration that led to ICU transfer; these findings support better partnerships with families at Cincinnati Children's and broadly.

Keren R, **Shah SS**, Srivastava R, Rangel S, Bendel-Stenzel M, Harik N, Hartley J, Lopez M, Seguias L, Tieder J, Bryan M, Gong W, Hall M, Localio R, Luan X, deBarardinis R, Parker A, Pediatric Research in Inpatient Settings Network.

Comparative Effectiveness of Intravenous vs Oral Antibiotics for Postdischarge Treatment of Acute Osteomyelitis in Children. *JAMA Pediatr.* 2015 Feb;169(2):120-8.

First, do no harm: osteomyelitis, a common bone infection, requires a long course of antibiotic treatment. Historically, these infections were treated with antibiotics administered through an intravenous (IV) catheter called a peripherally-inserted central venous cathether or PICC. PICC use is inconvenient in the home setting and places the child at risk for PICC complications such as infection or blood clots. This multicenter study, using data from 33 children's hospitals, found that there was no difference in treatment failure rates when children received long-term antibiotics by mouth vs. PICC. However, children receiving antibiotics by PICC were three times more likely than children receiving oral antibiotics to return to the hospital because of treatment-related complications, typically because of a problem with the PICC. These findings suggest that oral antibiotics should preferentially be used after hospital discharge for children with bone infections.

Daymont C, Bonafide C, **Brady PW**. Heart rates in hospitalized children by age and body temperature. *Pediatrics*. 2015 May;135(5):e1173-81.

Better understanding fast heart rates: Normal heart rates in children change as kids get older. For example, a heart rate of 160 beats per minute may be normal in a newborn infant but signal critical illness in a teenager. Additionally, heart rate increases with fevers, but it was not previously known what level of increase was expected and what may be a higher increase due to a severe infection like septic shock. This study used one year of vital signs at two large children's hospitals to determine how heart rate related to temperature at a variety of different ages. These data differed from previously published references, and provide valuable data to assist clinicians in identifying febrile hospitalized children that need further evaluation and treatment.

Schondelmeyer AC, **Simmons JM**, Statile AM, Hofacer K, Smith R, Prine L, **Brady PW**. Using quality improvement to reduce continuous pulse oximetry use in children with wheezing. *Pediatrics*. 2015 Apr;135(4):e1044-51.

Choose wisely: This study used quality improvement methods to reduce medically unnecessary continuous pulse oximetry monitoring in children admitted with asthma and bronchiolitis as recommended by the Pediatric Hospital Medicine section of the American Board of Internal Medicine *Choosing Wisely* campaign. Excess time on continuous pulse oximetry was reduced by >70% through simple interventions focused on clarity and awareness of criteria for using continuous pulse oximetry. Examples of interventions included staff education, changes to electronic health record order sets, and handoff checklists. In addition, there were no apparent negative consequences to shorter continuous pulse oximetry monitoring as determined by transfers to the intensive care unit, medical emergency team calls, or readmissions. These findings suggest that simple interventions can reduce excess continuous pulse oximetry monitoring in this patient population, and that a more judicious approach to pulse oximetry monitoring is safe.

Starmer AJ, Spector ND, Srivastava R, West DC, Rosenbluth G, Allen AD, Noble EL, Tse LL, Dalal AK, Keohane CA, Lipsitz SR, Rothschild JM, Wien MF, Yoon CS, Zigmont KR, Wilson KM, **O'Toole JK**, Solan LG, Aylor M, Bismilla Z, Coffey M, Mahant S, Blankenburg RL, Destino LA, Everhart JL, Patel SJ, Bale Jr. JF, Spackman JB, Stevenson AT, Calaman S, Cole FS, Balmer DF, Hepps JH, Lopreiato JO, Yu CE, Sectish TC, Landrigan CP for the I-PASS Study Group. **Changes in medical errors after implementation of a handoff program.** *N Engl J Med.* 2014 Nov 6;371(19):1803-12.

Preventing errors through structured handoff communication: Miscommunications during handoffs are a leading cause of serious medical errors. This prospective intervention study, conducted at nine children's hospitals across North America, implemented a novel "handoff bundle" during the transition of patient care from one resident physician to another. Implementation of the I-PASS handoff bundle at the nine sites, including Cincinnati Children's, was associated

with a 30 percent decrease in preventable adverse events (medical errors resulting in harm to patients). The reduction in medical errors and adverse events occurred without increasing the time required to complete handoff communications or an impact on the time resident physicians spent with patients. This handoff process is now standard for patients who receive care from the Division of Hospital Medicine.

Division Publications

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2. Aliu O, Auger KA, Sun GH, Burke JF, Cooke CR, Chung KC, Hayward RA. **The effect of pre-Affordable Care Act (ACA) Medicaid eligibility expansion in New York State on access to specialty surgical care.** *Med Care.* 2014; 52:790-5.
3. Ambroggio L, Test M, Metlay JP, Graf TR, Blosky MA, Macaluso M, Shah SS. **Adjunct Systemic Corticosteroid Therapy in Children With Community-Acquired Pneumonia in the Outpatient Setting.** *J Pediatric Infect Dis Soc.* 2014; 4:21-27.
4. Anderson BL, Guiot AB, Timm NL. **An atypical presentation of atypical Kawasaki disease.** *Pediatr Emerg Care.* 2014; 30:491-2.
5. Antommaria AH. **Intensified conflict instead of closure: clinical ethics consultants' recommendations' potential to exacerbate ethical conflicts.** *Am J Bioeth.* 2015; 15:52-4.
6. Antommaria AH. **Response to open peer commentaries on "an ethical analysis of mandatory influenza vaccination of health care personnel: implementing fairly and balancing benefits and burdens".** *Am J Bioeth.* 2014; 14:W1-4.
7. Antommaria AH, Collura CA, Antiel RM, Lantos JD. **Two infants, same prognosis, different parental preferences.** *Pediatrics.* 2015; 135:918-23.
8. Aronson PL, Thurm C, Alpern ER, Alessandrini EA, Williams DJ, Shah SS, Nigrovic LE, McCulloh RJ, Schondelmeyer A, Tieder JS, Neuman MI, Febrile Young Infant Research C. **Variation in care of the febrile young infant <90 days in US pediatric emergency departments.** *Pediatrics.* 2014; 134:667-77.
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10. Auger KA, Jerardi KE, Sucharew HJ, Yau C, Unaka N, Simmons JM. **Effects of the 2011 duty hour restrictions on resident education and learning from patient admissions.** *Hosp Pediatr.* 2014; 4:222-7.
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Faculty, Staff, and Trainees

Faculty Members

Samir Shah, MD, MSCE, Professor

Leadership Division Director; James M. Ewell Endowed Chair

Research Interests Pediatric infectious diseases and pediatric hospital medicine physician whose research focuses on improving the efficiency and quality of care of children hospitalized with common, serious infections such as pneumonia and meningitis. Ongoing projects include studying the comparative effectiveness of different antibiotics in the treatment of community-acquired pneumonia and developing novel databases to conduct comparative effectiveness research.

Lillian Ambroggio, PhD, Assistant Professor

Research Interests Dr. Ambroggio is an infectious diseases epidemiologist. Her research is focused on improving outcomes for children with pneumonia by developing methods to improve diagnostic accuracy and implementing these methods into clinical practice.

Katherine Auger, MD, MSc, Assistant Professor

Research Interests Pediatric hospitalist whose research focuses on pediatric readmission risk and improving discharge processes to prevent unplanned readmission. Ongoing projects include understanding discharge complexity and the association with readmission as well as developing a readmission risk prediction algorithm.

Lisa Benz, MD, Assistant Professor

Research Interests Use QI methodology to improve communication among providers, patients, and families using family centered care principals to improve medical outcomes for hospitalized children.

Patrick Brady, MD, MSc, Assistant Professor

Research Interests To design and evaluate a highly reliable system to identify, predict, and intervene on hospitalized patients at risk of clinical deterioration.

Patrick Conway, MD, MSc, Associate Professor

Research Interests Understanding healthcare utilization.

Erin Conway-Habes, MD, Instructor

Research Interests Focus on the care of adults in children's hospitals and situational awareness. Ongoing projects include using quality improvement to implement an adult early warning score and simulation based research for acute care medicine.

Craig Gosdin, MD, MSHA, Assistant Professor

Leadership Medical Director, Hospital Medicine Liberty Campus

Research Interests Hospitalists workforce issues, identification of best practices and financial sustainability of hospitalist programs, and cost effectiveness.

Amy Guiot, MD, Assistant Professor

Leadership Associate Director of Medical Student Education

Research Interests Actively involved with the Council of Medical Students of Education in Pediatrics where she serves as a member of the curriculum task force.

Philip Hagedorn, MD, Instructor

Research Interests To harness clinical decision support to improve safety and efficacy of patient care, including the impact of implementing clinical decision rules at the point of care, optimizing alerts presented to users of EHRs and business intelligence systems.

Brian Herbst, MD, Assistant Professor

Research Interests Internal medicine and pediatric hospitalist involved with the development of a simulation curriculum focused on adults in a pediatric institution. Implementation of an early warning scoring system for adults admitted to Cincinnati Children's.

Lori Herbst, MD, Assistant Professor

Research Interests Internal medicine/pediatric hospitalist and palliative care physician; interests include developing a resident end-of-life curriculum, as well as developing strategies to improve communication in the care of patients with medical complexities.

Karen Jerardi, MD, MEd, Assistant Professor

Leadership Director, Pediatric Hospital Medicine Fellowship

Research Interests Primary research interests focuses on medical education research and the development of quality measures for management of children hospitalized with common infections such as urinary tract infection and pneumonia.

Yemisi Jones, MD, Assistant Professor

Research Interests Undergraduate and graduate medical education, using quality improvement methods to reduce waste and standardize inpatient pediatric care. Current projects include examining the changing epidemiology of retropharyngeal abscesses.

Benjamin Kinnear, MD, Assistant Professor

Research Interests Pediatric and adult hospitalist. Academic interests involve medical education. Also interested in studying the role of bedside ultrasonography for both pediatric and adult hospital medicine providers.

Eric Kirkendall, MD, MBI, Assistant Professor

Leadership Medical Director of Clinical Decision Support; Associate Chief Medical Information Officer

Research Interests Using technology and the electronic health record to improve the quality and safety in care delivering.

Mia Mallory, MD, Associate Professor

Leadership Associate Dean of Diversity and Inclusion, University of Cincinnati College of Medicine

Research Interests Recruitment, retention & support of underrepresented students, residents & faculty. Career development for trainees from students to residents. Mentorship & outreach to local middle & high school students. Promote & support women's faculty initiatives.

Katie Meier, MD, Instructor

Research Interests Pediatric hospital medicine physician who cares for general pediatric and surgical patients. Research interests focus on venous thromboembolism (VTE) prophylaxis and surgical co-management. Ongoing projects include quality improvement initiative to implement VTE prophylaxis in hospitalized patients.

Grant Mussman, MD, Assistant Professor

Research Interests Improve provider awareness of hospital readmissions. Develop strategies to reduce unnecessary readmissions, improve the reliability of verbal handoffs at hospital discharge, reducing unnecessary intervention for patients with acute viral bronchiolitis.

Jennifer O'Toole, MD, MEd, Associate Professor

Leadership Medical Director, Education; Associate Director, Internal Medicine Pediatrics Residency Program; Associate Fellowship Director, General Pediatrics Master Educator Fellowship

Research Interests In handoffs in care, educational innovation for bedside teaching, teaching residents to care for underserved populations and faculty development in medical education. She is the site PI for the I-PASS Handoff Study where she leads faculty development efforts and is a member of the educational team that developed the extensive curriculum for the study.

Michelle Parker, MD, Assistant Professor

Research Interests Translational research in the area of hospital medicine. Main area of interest surround education and application of evidence-based medicine and evidence-based guidelines, with a focus of utilizing quality improvement science to drive outcomes.

Amanda Schondelmeyer, MD, MSc, Assistant Professor

Research Interests Interests are in safely reducing overuse in the healthcare system and eliminate iatrogenic harm through implementation of evidence-based clinical practices for common inpatient pediatric conditions.

Christine Schuler, MD, MPH, Assistant Professor

Research Interests Pediatric hospital medicine physician with an interest in both vaccine preventable diseases as well as the role of weight (i.e. Underweight, overweight, obese) in hospitalized patients. Ongoing projects include examining parent survey data related to HPV vaccine, and examining obesity in the context of asthma.

Erin Shaughnessy, MD, Assistant Professor

Leadership Medical Director of Hospital Medicine Surgical Services; Associate Division Director, Clinical Operations; Senior Medical Director, A6N, A6S and Liberty Campus

Research Interests Resident education, quality improvement, handovers, family centered care, and evidence-based medicine.

Jeffrey Simmons, MD, MSc, Associate Professor

Leadership Associate Director, Clinical Operations and Quality; Associate Safety Officer, James M. Anderson Center for Health Services Excellence

Research Interests Integrate classical clinical research methods and quality improvement science to accelerate the integration of research and research findings into the general inpatient wards.

Angela Statile, MD, Assistant Professor

Research Interests Medical education and quality improvement. Currently implementing an innovative hospital medicine resident conference series. Also involved in several quality improvement initiatives, including projects to improve timely patient discharges and to improve timely patient discharges and to improve compliance with a national pneumonia guideline.

Joanna Thomson, MD, MPH, Assistant Professor

Research Interests Has a special interest in caring for hospitalized children with medical complexity. Research focuses on the impact parents and health systems have on health outcomes for these children.

Ndidi Unaka, MD, Assistant Professor

Leadership Associate Director, Pediatrics Residency Program

Research Interests Centered around resident education, curriculum development and quality improvement.

Brian Volck, MD, Assistant Professor

Research Interests Focus includes global child health; Native American child health; medical education; cross-cultural medicine; medical ethics; poverty, justice and health.

Michael Vossmeyer, MD, FAAP, Associate Professor

Leadership Medical Director Hospital Medicine Community Integration; Senior Medical Director, Hospital Medicine/Operation Excellence

Research Interests Family-centered care, situation awareness and clinical quality improvement.

Christine White, MD, MAT, Associate Professor

Leadership Medical Director Hospital Medicine Burnet Campus; Medical Director, Destination Excellence

Research Interests Quality improvement; efforts to increase medication reconciliation completion. Currently leading institute-wide improvement projects on improving capacity management and the patient/family experience.

Joint Appointment Faculty Members

Armand Antommaria, MD, PhD, FAAP, Associate Professor (Director of the Ethics Center)

Andrew Beck, MD, MPH, Assistant Professor (General and Community Pediatrics)

Jennifer deSante, MD, MBE, Assistant Professor (Ethics Center)

Thomas Dewitt, MD, Professor (General and Community Pediatrics)

Neera Goyal, MD, Assistant Professor (Neonatology and Pulmonary Biology)

Melissa Klein, MD, Assistant Professor (General and Community Pediatrics)

Stephen Muething, MD, Associate Professor (James M. Anderson Center for Health System Excellence)

Sarah Riddle, MD, IBCLC, FAAP, Adjunct (General and Community Pediatrics)

Andrew Spooner, MD, MS, FAAP, Associate Professor (Chief Medical Information Officer)

Clinical Staff Members

- Ben Bolser, MD
- Deborah Holland, MD
- Brittany Hubbell, MD
- Anna Ipsaro, MD, MBE
- Matthew Kelleher, MD
- Blair Simpson, MD
- Dane Warner, MD
- Christine Wolski, MD

Trainees

- Laura Brower, MD, Cincinnati Children's Hospital Medical Center
- Catherine Forster, MD, Cincinnati Children's Hospital Medical Center
- Erik Hoefgen, MD, Cincinnati Children's Hospital Medical Center
- Aarti Patel, MD, Cincinnati Children's Hospital Medical Center
- Amy Rule, MD, Cincinnati Children's Hospital Medical Center
- Anita Shah, DO, Cincinnati Children's Hospital Medical Center
- Michael Tchou, MD, Cincinnati Children's Hospital Medical Center

Grants, Contracts, and Industry Agreements

Grant and Contract Awards

Annual Direct

Brady, P

Family-Clinician Partnerships to Improve Child Safety in the Hospital

Agency for Healthcare Research and Quality

K08 HS023827

5/1/2015-4/30/2020

\$134,967

O'Toole, J

Bringing I-PASS to the Bedside: a Communication Bundle to Improve Patient Safety and Experience

Patient-Centered Outcome Research Institute (Children's Hospital Boston)

4/15/2014-4/14/2017

\$39,931

Shah, S

PHIS+: Augmenting the Pediatric Health Information System with Clinical Data

Agency for Healthcare Research and Quality (Children's Hospital of Philadelphia)

R01 HS019862 9/30/2010-1/31/2015 \$7,683

Understanding Quality and Costs in Congenital Heart Surgery

National Institutes of Health (University of Michigan)

R01 HL122261 4/1/2014-3/31/2019 \$11,939

Comparative Effectiveness of Prolonged Intravenous Therapy vs. Early Transition to Oral Antimicrobial Therapy for Serious Bacterial Infections in Children

Patient-Centered Outcome Research Institute (Children's Hospital of Philadelphia)

3/1/2013-8/31/2015 \$55,010

Improving Post-Discharge Outcomes by Facilitating Family-Centered Transitions from Hospital to Home

Patient-Centered Outcome Research Institute

5/1/2014-4/30/2017 \$492,934

Current Year Direct **\$742,464**

Service Collaborations

Shah, S

MSC LLC \$14,017

Current Year Direct **\$14,017**

Total \$756,481

Family-Activated Medical Emergency Team Model Demonstrates Wisdom of Loved Ones



Patrick Brady, MD, MSc

PUBLISHED DEC. 14, 2014

BMJ Quality and Safety

Every children's hospital could benefit from a family-activated Medical Emergency Team, (MET) based on results of a seven-year study showing that parents and family members of hospitalized children are capable of identifying complications and medical emergencies that require immediate intervention.

The 4.5-year study of the MET program at Cincinnati Children's found that parents did not overuse a system that empowers them to notify an on-site, multi-disciplinary team if they feel their child's condition is worsening (high fever, breathing difficulties, worsening abdominal pain) or if they feel hospital staff are not responding to their concerns. Parents made an average of 1.2 calls a month (2.9 percent of the total) to the hospital's MET team; 24 percent of which resulted in children being moved to the intensive care unit (ICU). Staff-initiated calls (97 percent of the total) to the MET resulted in 60 percent of children being transferred to ICU.

The study, published Dec. 14, 2014, in *BMJ Quality and Safety*, is accompanied by an editorial by a British father whose son's infection-caused death shortly after birth was linked to the UK hospital staff's inattentiveness to the parents' concerns. He advocates the formation of MET teams in pediatric hospitals worldwide because of the study's positive findings.

Cincinnati Children's adopted the MET program in 2007, supported by in-room posters that inform parents when, why and how to active the team.

Lead author Patrick Brady, MD, MSc, attending physician with the Division of Hospital Medicine, says the study clearly shows some patient needs would have been missed without family-initiated alerts. He urges hospitals to devise their own MET strategies to leverage family expertise.

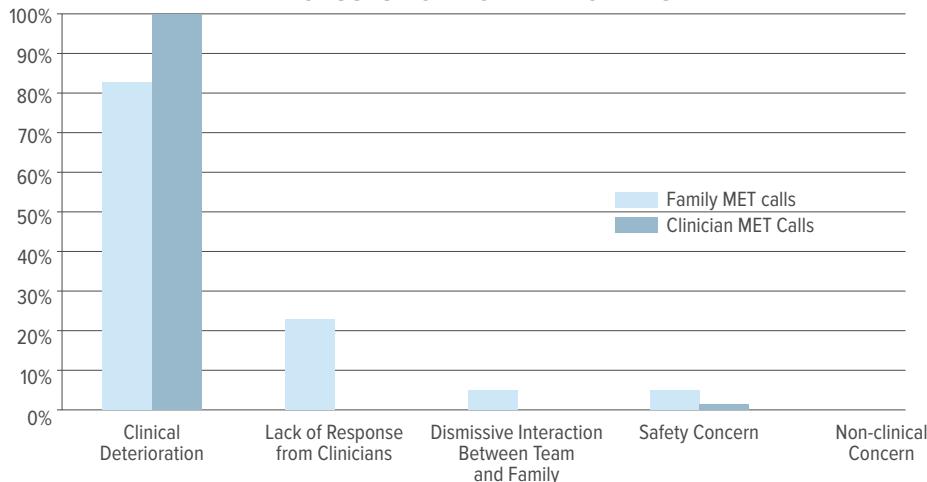
"Given the growing evidence of modest cost and potential benefits, we advocate for testing and adaptation of family-activated METs in all contexts," Brady says.

RESEARCH AND TRAINING DETAILS

Faculty	31
Joint Appointment Faculty	9
Support Personnel	14
Direct Annual Grant Support	\$742,464
Direct Annual Industry Support	\$14,017
Peer Reviewed Publications	122

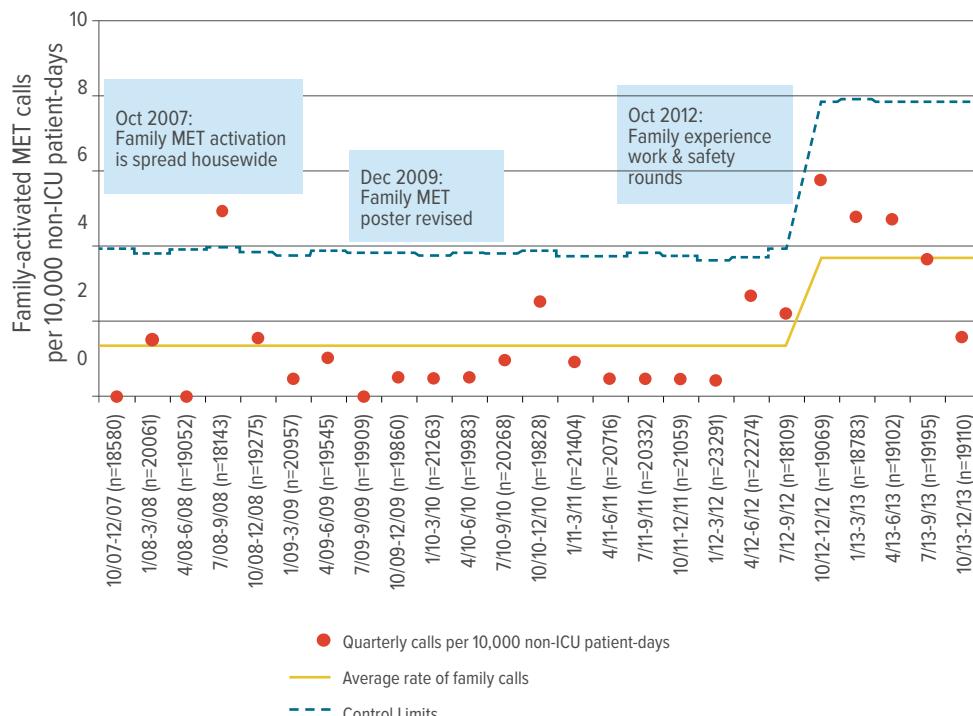
Brady PW, Zix J, Brilli R, Wheeler DS, Griffith K, Giaccone MJ, Dressman K, Kotagal U, Muething S, Tegtmeier K. Developing and evaluating the success of a family activated medical emergency team: a quality improvement report. *BMJ Qual Saf*. 2015;24(3):203-211.

CAUSES FOR ACTIVATING METS



This chart shows the reasons why medical emergency teams (METs) were activated. While clinicians always activated METs to respond to clinical deterioration, families activated METs for multiple reasons, including lack of response from clinicians (23% of calls) and dismissive interactions between care teams and families (5% of calls).

FAMILY ACTIVATED MET CALLS



This chart shows family-activated MET calls over the study period. The changes shown in 2012 reflect increased safety rounds conducted by unit leaders, the addition of a family advocate to daily huddles, and improved detection and mitigation of threats to family experience.