

Education in Pediatrics Across the Continuum (The EPAC Project)

Vision Statement: To create a model of medical education and training seamlessly spanning the UME/GME continuum which is focused on each learner's individual achievement of the defined competencies and milestones which constitute the professional activities of a pediatrician.

Sponsors:

Deborah Powell, M.D.

Dean Emeritus, University of Minnesota School of Medicine
Associate Vice President for New Models of Medical Education
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Carol Carraccio, M.D., M.Ed

Director of Competency-Based Education
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Carol Aschenbrener, M.D.

Chief Medical Education Officer
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Robert Englander, M.D., MPH

Senior Director of Competency-Based Learning and Assessment
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Partners in the Project:

Accreditation Council for Graduate Medical Education
Association of American Medical Colleges
American Board of Pediatrics

Consultants:

Timothy Brigham, M.Div, Ph.D.

Dr. Brigham is the Senior Vice President of Education at the Accreditation Council for Graduate Medical Education. He brings expertise in the area of GME and program accreditation.

Steven Clyman, M.D.

Executive Director, National Board of Medical Examiner's (NBME) Center for Innovation. Dr. Clyman has been a pioneer in assessment of physician competence and adds expertise in the areas of both individual assessment and program evaluation.

Susan Day, M.D.

Dr. Day is the Chair of the Department of Ophthalmology at the California Pacific Medical Center and the immediate past Chair of the Board of Directors of the ACGME. She brings expertise in the area of program accreditation.

Joe Gilhooly, M.D.

Dr. Gilhooly is a Professor of Pediatrics, Vice Chair for Education, and the Director of Fellowship Education at the Oregon Health Sciences University. He is the current Chair of the Pediatric Residency Review Committee. In the latter role, Dr. Gilhooly is working on the next iteration of the program requirements and the Pediatric RC is interested in the concept of EPAs

David Hirsh, M.D.

Dr. Hirsch is the Co-Creator and Co-Director of the Cambridge Integrated Clerkship. Dr. Hirsch provides expertise in the area of longitudinal medical curriculum development and implementation through his work on the Cambridge Integrated Clerkship.

M. Douglas Jones, Jr. M.D.

Dr. Jones is the immediate past Chair of the Board of Directors of the American Board of Pediatrics. He also co-directed the Residency Review and Redesign Project in Pediatrics which was the precursor to the Initiative for Innovation in Pediatric Education. He brings expertise in the area of innovation in medical education in pediatrics.

Linda Perkowski, Ph.D.

Dr. Perkowski is the Associate Dean for Curriculum and Evaluation at the University of Minnesota. She provides expertise in educational assessment and program evaluation.

Jan Theodorus (Olle) ten Cate, M.D.

Dr. ten Cate is a Professor of Medical Education at the Center for Development and Research in Medical Education at the University Medical College of Utrecht, the Netherlands. He provides expertise in the conceptualization, establishment and implementation of Entrustable Professional Activities (EPAs) as tools to establish competence in the clinical context. The Pediatric Redesign Group has decided to utilize EPAs as the framework for this program.

Linda Lewin, M.D.

Dr. Lewin is Associate Professor and Associate Chair for Educational Programs at the University Of Maryland School of Medicine. She has led educational programs in primary care, professionalism, and ethics, and has served as chair of several national initiatives to create competency based models of reporting learner progress through medical school and residency training. In her current role she oversees all aspects of education in her department and co-leads a Primary Care Track program in the School of Medicine, and her current research initiatives revolve around development and testing of tools to improve communication skills in medical students and residents.

Dorene Balmer, Ph.D.

Dr. Balmer is an Associate Professor in the Department of Pediatrics, Section of Academic General Pediatrics, at Baylor College of Medicine, and the Associate Director of the Center for Research, Innovation and Scholarship in Medical Education at Texas Children's Hospital (TCH). Dr. Balmer started her professional career as a clinical nutritionist at The Children's Hospital of Philadelphia, and entered medical education in pediatrics after a post-doctoral research fellowship at the University of Pennsylvania and an education generalist position at Columbia University's Center for Education Research and Evaluation. At TCH, Dr. Balmer collaborates with pediatric faculty, residents, fellows and other stakeholders around program evaluation and educational research. Dr. Balmer shares her passion for qualitative inquiry in medical education through professional presentations, publications, and national organizations.

Alan Schwartz, Ph.D.

Dr. Schwartz is Professor and Associate Head of the Department of Medical Education and Research Professor of the Department of Pediatrics at the University of Illinois at Chicago. His research focuses on medical education, research methodology, and medical decision making. He is the Director of the Association of Pediatric Program Directors Longitudinal Educational Assessment Research Network (APPD LEARN), a collaborative educational research network of over 120 Pediatrics residency programs, and Editor-in-Chief of the journal Medical Decision Making. He formerly served as the quantitative expert in the IIPE project support team, and edited the ABP Program Director's Committee Primer on Assessment in Graduate Medical Education.

Thomas Rebbecchi, M.D.

Dr. Rebbecchi is Vice President for Assessment Programs at the National Board of Medical Examiners (NBME) and responsible for Medical School examinations, product development and public engagement. Prior to assuming this role, Dr. Rebbecchi served as the Medical Director for the Step 2 Clinical Skills examination with the Educational Commission for Foreign Medical Graduates (ECFMG). He is a graduate of the Robert Wood Johnson Medical School and completed his residency in Emergency Medicine at the Medical College of Pennsylvania. He is a Diplomat of the NBME and the American Board of Emergency Medicine. He continues to have an active practice of medicine at the Cooper University Hospital and is an Associate Professor of Emergency Medicine at the Cooper Medical School of Rowan University.

Tara Kennedy, M.D., Ph.D., FRCPC

Dr. Kennedy is a Developmental Pediatrician who works as the Clinical Leader of Pediatric Autism Rehabilitation Services at the Stan Cassidy Centre for Rehabilitation in Fredericton, New Brunswick. She is an Assistant Professor of Pediatrics at Dalhousie University. She has a Master's of Education degree from the Ontario Institute for Studies in Education, and completed a PhD program in Medical Education at the University of Toronto, with a focus on clinical training and supervision of medical trainees. She is actively involved in educational programs in the field of Child Development for medical trainees, physicians, and other health care professionals across North America.

Background:

Since the publication of the Flexner report in 1910,¹ and its operationalization in the 1930s, medical schools have been structured in a time-based four year curriculum, with two years devoted primarily to basic sciences and two years to the clinical sciences. Graduate Medical Education has also been structured as time-based programs, with pediatric residency training based on a three year curriculum. The 1990s saw the introduction of the tenets of competency-based medical education at the undergraduate medical education (UME) level through the Medical Student Objectives Project (MSOP)² sponsored by the AAMC and at the graduate medical education (GME) level through the Outcome Project³ sponsored by the Accreditation Council for Graduate Medical Education (ACGME). These projects sought to redefine the progression along the educational continuum based on the expected outcomes for individuals in the six core competencies of a practicing physician: Patient Care, Medical Knowledge, Professionalism, Interpersonal and Communication Skills (ICS), Systems-Based Practice (SBP) and Practice-Based Learning and Improvement (PBLI). Sub-competencies within these six domains have been defined, and individual specialties have adopted specialty-specific language. Over the course of the past decade, the American Board of Medical Specialties (ABMS) has also focused on the competencies with the adoption of the Maintenance of Certification (MOC) Program, designed to insure that physicians both continue to demonstrate competence and, ultimately, growth within the six domains over the course of their careers. Finally, the Federation of State Medical Boards has also made demonstration of competence the primary tenet of their Maintenance of Licensure program.

While much progress has been made, the prevailing structure of both UME and GME continues to be both time- and tradition-based and thus at odds with a primary tenet of competency-based education, which is the attainment of competence by the individual learner within their own timeframe. The demonstration of competence must serve to both elucidate the transitional milestones (e.g. from undergraduate to graduate medical education or from supervised to supervising resident) and allow advancing responsibility for the learner without direct supervision.

The primary impetus for this project is to test the hypothesis that progression from entrance to medical school to completion of residency can be guided and assessed as a comprehensive medical education program using a competency-based framework. The pediatric community, relatively advanced in its understanding and definition of competence, will serve as the pilot specialty to test this hypothesis. Five medical schools and their associated pediatric residency programs representing a diverse group geographically and structurally, will make up the initial cohort.

Project Goals:

Primary Goal: Establish a model for true competency-based medical education through variable-time, meaningfully assessed demonstration of competence across the UME-GME continuum.

Secondary Goals:

- 1) Demonstrate the successful creation of competent physicians with a more focused, learner-centered approach (i.e. pediatric focused UME, and career focused GME) by showing preparedness for practice of graduates. (Note: This goal directly addresses a goal of the Carnegie Report of 2010⁴ by allowing individualization of the learning pathway with a focus on pediatrics after the establishment of desired outcomes-EPAs, competencies, and Milestones)
- 2) Improve the meaningfulness of the work at the UME and GME levels for a subset of learners known to desire a career in pediatrics at entrance to medical school.
- 3) Insure that learners meet traditional achievement standards (such as passing the boards) to provide needed flexibility for change in career plans (e.g. no adverse effects to opting out of the program).
- 4) Test the utility of Entrustable Professional Activities and the Pediatric Milestones in establishing performance standards across the UME and GME continuum and determining readiness for transitions from UME to GME and GME to practice.
- 5) Build and sequence a curriculum in pediatrics to address a true continuum of medical education from UME through GME which may serve as a model for other specialties.
- 6) Allow learners to advance beyond competence during the training years in their individual areas of focus.

Project Teams

1) University of California at San Francisco

- Michele E. Long, M.D. (Team Leader)
- H. Carrie Chen, M.D, M.S.Ed
- Daniel West, M.D.
- Abhay Dandekar, M.D.

2) University of Colorado/Denver Children's Hospital

- Jennifer B. Soep, M.D. (Team Leader)
- Carol Okada, M.D.
- Alexandria Forte, BA
- Janice L. Hanson, PhD, Ed.S
- J. Lindsey Lane BM, BCh
- Tai M. Lockspeiser, M.D.
- Adam Rosenberg, M.D.

3) University of Minnesota

- John S. Andrews, M.D. (Team Leader)
- Emily Borman-Shoap, M.D.
- Katherine Murray, M.D.
- Patricia Hobday, M.D.
- Dani Hans, BA
- Kathleen Brooks, M.D., MBA, MPA
- Robert Acton, M.D.

4) University of Utah

- James F. Bale, Jr., M.D. (Team Leader)
- Adam Stevenson, M.D.
- Kristin Randall
- Brian Good, M.D.
- Danielle Roussel, M.D.
- Tiffany Glasgow, M.D.

References:

- 1) Flexner A. *Medical Education in the United States and Canada*. New York, NY: Carnegie Foundation for the Advancement of Teaching; 1910.
- 2) *Learning Objectives for Medical Student Education: Guidelines for Medical Schools*. Association of American Medical Colleges: Washington, DC: 2010.
- 3) Outcomes Project (<http://www.acgme.org/Outcome>). The Accreditation Council for Graduate Medical Education, Chicago, IL, 2001.
- 4) Cooke M, Irby DM and O'Brien BC. *Educating Physicians: A Call for Reform of Medical School and Residency*. Carnegie Foundation for the Advancement of Teaching. Jossey-Bass: San Francisco: 2010.
- 5) Ogur B, Hirsh D, Krupat E, Bor D. The Harvard Medical School-Cambridge integrated clerkship: an innovative model of clinical education. *Academic Medicine*, 2007: 82 (4); 397-404.
- 6) Hirsh DA, Ogur B, Thibault GE, Cox M. Continuity as an organizing principle for clinical educational reform. *N Engl J Med* 2007;356:858-66.
- 7) Kegan, Robert. *The Evolving Self*. Harvard University Press, 1982. [ISBN 0674272315](#)