

Innovation in Pediatric Education: Promoting and Undergoing Transformational Change

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The Residency Review and Redesign Project (R³P), a 4-year study of pediatrics training supported by the American Board of Pediatrics (ABP) Foundation, concluded with recommendations to develop a process to foster ongoing innovation in education rather than a product such as a curriculum that could quickly become outdated.¹ To that end, the ABP began funding the Initiative for Innovation in Pediatric Education (IIPE) program in 2009 with the purpose of stimulating and facilitating innovation in pediatric education.² As a program, the IIPE comprised a director and a project support team who answered to the IIPE oversight committee. Just as the IIPE represented the natural evolution of R³P, so too another natural evolution is unfolding: the IIPE is transforming into the Pediatrics Milestones Assessment Collaborative (PMAC), a joint project of the National Board of Medical Examiners, the Association of Pediatric Program Directors (APPD), and the ABP.³

This report coincides with a time of transition in which we (the authors) look back over the past 5 years to examine the events and activities that shaped the IIPE program and to celebrate its consequences. Borrowing from the wisdom of Kierkegaard, we also examine what can best be “understood backward,” that is, emergent core values that we could not have known in advance but that may inform similar efforts “living forward.”

WHAT EVENTS AND ACTIVITIES SHAPED THE IIPE PROGRAM?

Strategic Relationships That Catalyzed Growth

Two strategic partnerships emerged shortly after the IIPE's inception. First, IIPE partnered with the APPD to build the APPD Longitudinal Educational Assessment Research Network (LEARN); this network supports study design, analysis, and data archiving in multisite educational research projects.⁴ The second partnership emerged in response to the Accreditation Council for Graduate Medical Education's requirement that each specialty define and refine the core competencies in the context of the specialty and develop milestones for performance for each competency.⁵ The IIPE partnered with the Pediatrics Milestones Working Group, encouraging innovative methods to test the Pediatrics Milestones in vivo. A subsequent partnership between the National Board

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Dr Balmer gathered, collated, and analyzed the qualitative data contained in this work; wrote relevant parts of the manuscript based on the data; edited the remainder of the manuscript; and worked collaboratively with Dr Carraccio to rewrite the manuscript to address reviewer comments; Dr Carraccio gathered and synthesized information from the principal investigators of the Initiative for Innovation in Pediatric Education projects and confirmed with them that the manuscript accurately represented their work and accomplishments; wrote parts of the manuscript relevant to this role and edited the remainder of the manuscript; and worked collaboratively with Dr Balmer to rewrite the manuscript to address reviewer comments; and both authors approved the final manuscript as submitted.

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of Medical Examiners and APPD LEARN led to a feasibility pilot study of Milestones assessment. The pilot's success laid the foundation for a national study of Pediatrics Milestones that would evolve as the PMAC.³

Factors That Inhibited Growth

Aspects of IIPE's structure as well as contextual factors inhibited growth. For example, the IIPE Review Committee adopted rigorous standards from the academic field of medical education research for approval of innovation projects. However without external funding provided by the IIPE, project leaders were unable to secure local resources that would help them meet these standards. Additionally, there appeared to be a general reluctance among pediatric residency program directors, the IIPE's primary audience, to innovate when new accreditation requirements were evolving.⁶

Response to Catalysts and Inhibitors

To address potential inhibitors, the IIPE leadership provided additional resources beyond the project support team (ie, a primer to assist program directors with the application process and research methodology and Web site to facilitate multiinstitutional partnerships). When these resources did not increase the number of project submissions, IIPE leadership turned their attention to catalysts such as national collaborative projects, which would eliminate the need for robust local resources and increase the number of pediatric residency program directors who could participate. Hence, the decision to redirect resources and segue the IIPE into the PMAC was proposed by the IIPE director and approved by the IIPE oversight committee and ABPF, facilitating the formation of the PMAC and the initiation of the national study of Milestones in the summer of 2014.

WHAT WERE THE CONSEQUENCES OF THE IIPE PROGRAM?

The IIPE program endorsed 8 projects with project leaders from 15 institutions. The project titles, institutions, awards, and diffusion of their innovations are noted in Table 1. The IIPE fostered scholarship that met high standards for quality and innovation, as evidenced by 27 peer-reviewed publications and 60 national presentations to date. Projects covered a range of activities such as studying care transitions through tool development as well as team training, developing curricula for consultation and referral skills, and creating a pilot program to transition trainees from medical school to residency, and on to fellowship or practice based on competence rather than time. Spin-off projects generated from the original IIPE-endorsed projects are delving deeper into the phenomenon of interest (eg, exploring the interplay between residents' awareness of their own limits and handoff behaviors in the Children's Hospital of Philadelphia/University of Michigan project). Others are applying the original intervention to a different population (eg, Boston Children's consortium applying their I-PASS study [standardized, evidence-based handoff program] to medical students). The IIPE facilitated collaborations within project teams (eg, the Boston consortium project had >50 faculty-collaborators across 10 sites), across project teams (eg, another IIPE project team borrowed from the University of Rochester's project focusing on self-determination theory to enhance learner motivation), and beyond project teams (eg, the Children's National Medical Center/University of Colorado project is informing the joint efforts of the ABP and the Association of American Medical Colleges to develop consultation and referral trustworthy professional activities).⁷ The collaborations

across and beyond teams were initiated at the annual meetings of key faculty from all projects with the IIPE director and project support team. The IIPE cultivated mentoring relationships—some serendipitous, others intentional (eg, linking junior and senior faculty on quality improvement projects at University of Vermont). From the perspective of the participants, the IIPE fostered institutional culture change (eg, elevating the stature of education scholarship to form an Academy at University of Utah and moving away from traditional, predetermined curricula toward individualized, career-driven tracks at the University of Colorado).

WHAT WERE EMERGENT CORE VALUES OF THE IIPE PROGRAM?

As opposed to a priori guiding principles that help steer a program, emergent values enhance understanding of the past and can be applied to future efforts. Three core values emerged from systematic review of existing evaluation reports⁶ and minutes from annual meetings with IIPE leadership and project team leaders: contribution, community, and progress. The value of contribution—that is, a sense of duty in “giving back”—was rooted in R³P and was fundamental in advancing the work of the IIPE participants. Through the process of innovative change that was the IIPE, individuals contributed to trainees, faculty, institutions, the fields of pediatrics and medical education, and children and caregivers as stakeholders in health care. By coming together on individual projects and as a multiproject enterprise, the IIPE spoke to the shared value of community—a motivation to work toward shared interests and mutual goals. By fostering innovation, IIPE embraced the value of progress—a commitment to support the growth of individuals, educational programs, and institutions.

TABLE 1 The IIPE Projects' Accomplishments

Project Title	Sponsoring Institution	IIPE Endorsement	Awards/Diffusion of Innovation
Academy of Pediatric Education and Learning	University of Utah	2009	Expanded to the level of the medical school as the "Academy of Health Science Educators"
Education in team-based collaborative care and transfer of care to improve resident education and quality of care	University of Michigan/Children's Hospital of Philadelphia	2009	Local grant; spread of team training beyond physician teams to include allied health professional teams in the institution
I-PASS Handoff Study Collaborative	Boston Children's Hospital/Harvard Medical School (primary site) Cincinnati Children's Hospital Medical Center/University of Cincinnati College of Medicine Hospital for Sick Children/University of Toronto Lucile Packard Children's Hospital/Stanford University School of Medicine Doernbecher Children's Hospital, Oregon Health and Science University Primary Children's Hospital/Intermountain Healthcare/University of Utah School of Medicine St. Louis Children's Hospital/Washington University School of Medicine in St. Louis St Christopher's Hospital for Children/Drexel University College of Medicine Benioff Children's Hospital, University of California, San Francisco, School of Medicine Walter Reed National Military Medical Center/Uniformed Services University of the Health Sciences	2009	Department of Health and Human Services Grant; Patient Centered Outcomes Research Institute Grant; Agency for Healthcare Quality Grant; Ray E. Helfer Award for Innovation in Education; spread throughout other academic health centers in the region
Structured extended career-centered block time in a pediatric residency program	University of Colorado	2009	Spin-off project on individualized learning plans awarded APPD Special Projects Grant
A longitudinal curriculum to enhance the autonomy of residents in self-evaluation and self-improvement	University of Rochester	2010	Elements of curriculum adopted by another IIPE project institution; spin-off project adapted by general academic fellow
The referral and consultation process: ensuring the competence of graduating residents	Children's National Medical Center and University of Colorado	2011	Curriculum adopted by another IIPE project institution
Longitudinal quality improvement curriculum: a team-based approach	University of Vermont	2011	Local grant; Curriculum adopted by another academic health center
Education in Pediatrics Across the Continuum	Association of American Medical Colleges for 4 implementation sites: (1) University of California, San Francisco; (2) University of Colorado; (3) University of Minnesota; (4) University of Utah	2013	Josiah Macy Jr. Foundation Grant

CONCLUSIONS

The R³P lives on through the IIPE, which in turn will live on as the PMAC. We viewed this time of transformation as an opportunity to examine factors and relationships that shaped the IIPE program and to celebrate its success. We also viewed transformation as an opportunity to "understand backward" by looking beyond the catalysts, inhibitors, and consequences

to find emergent core values that made the IIPE what it was so we could apply this understanding to future work. Although many involved in the previous phases of transformation will stay on board as the IIPE segues to the PMAC, we anticipate many more will contribute to transformation going forward. Informed by emergent core values of IIPE, we invite our readers to form a community of practice that is

committed to contributing to the advancement of pediatric education and supporting the progress and growth of our trainees and of ourselves.

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