

# The Pediatrics Primary Care Residency Program at the University of North Carolina

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The Pediatrics Primary Care Residency Program at the University of North Carolina School of Medicine will graduate its first class in 2014. Funded by the Health Resources and Services Administration through the Patient Protection and Affordable Care Act, this innovative program has a unique curriculum that offers several benefits, but sustainability of the program remains a challenge.

Like medical practice, graduate medical education is changing dramatically. Because of changes in regulations limiting duty hours and increasing expectations for documentation, residency schedules are more demanding than in the past. At the same time, the knowledge base in the literature has expanded and can overwhelm the resident learner. Greater pressure to be productive reduces residents' contact with attending physicians, and increasing faculty subspecialization raises questions about the relevance of general training. In large programs with rotation schedules that place residents in different clinical settings every 4 weeks, mentoring relationships between faculty members and residents have little time to develop.

In an effort to meet workforce needs, US medical schools have expanded class sizes, and new medical schools have opened [1]. Although more physicians are being taught, shortages will not be adequately addressed unless residency training positions are available for these graduates. In addition to the need for more residency slots, pediatric graduate medical education must take into account that today's patient population is more medically and socially complex than in the past, and residents in pediatric primary care must be prepared to provide a medical home for these patients [2]. Also, because of changes in medical practice, the knowledge and skills needed to succeed in a primary care practice after residency differ from those needed to succeed in a pediatric subspecialty fellowship.

One strategy for preparing physicians to function effectively in a more complex work environment is to focus their education. The pediatric education community has recognized this, and as of July 1, 2013, the American Medical Association's Residency Review Committee for Pediatrics requires that each resident have "individualized" training for at least 6 of the 36 months of required training; training during those 6 months should be determined by the

learning needs and career plans of each resident [3]. The Department of Pediatrics at the University of North Carolina (UNC) School of Medicine has begun to individualize training in a variety of ways. Although the department has 29 interns training in pediatrics each year, there are 6 different match lists to fill those spots, and within the categorical program, residents can choose from 4 different concentrations (Table 1).

In this commentary we would like to highlight one particular UNC program, the Pediatrics Primary Care Residency Program, which has an innovative curriculum that recognizes and addresses the challenges of today's graduate medical education. This program provides an individualized education focused on the learner's needs and offers a smaller setting that ensures mentorship. The curriculum is tailored to produce practicing pediatricians who will be better prepared

**TABLE 1.**  
Types of Pediatric Residency Programs at the University of North Carolina School of Medicine

Combined residency in internal medicine and pediatrics (6 interns per class)
Pediatric primary care residency (4 interns per class)
Categorical pediatrics residency (16 interns per class)
Tracks available at the end of the internship:
Clinician scientist track
Global health, public health, and advocacy track
Critical care/hospitalist track
General pediatrics track
Child neurology residency (1 intern per class)
Combined residency in pediatrics and anesthesiology (1 intern per class)
Pediatric preliminary year (1 intern per class)
For residents entering radiology, dermatology, or some other field requiring 1 year of internship, with the intention of having a career focusing on the care of children in that field
Note. Programs are chosen at the time of the Residency Match.

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to enter primary care and to provide high-quality care for children in a medical home setting.

### **Development of the UNC Pediatrics Primary Care Residency**

The Department of Pediatrics at UNC has had a long-standing collaborative relationship with the Pediatric Teaching Program at Cone Health in Greensboro, North Carolina. Residents from UNC rotate through Cone Health's community hospital to see general pediatrics cases and to gain experience at Guilford Child Health, an award-winning, public-private partnership clinic that serves high-need, low-resourced children in Guilford County. Co-locating providers of primary care and subspecialty services with social workers, mental health providers, and nutrition professionals gives patients access to most services in their medical home. UNC adjunct faculty members teach and practice in these settings. We felt that the site was underutilized for teaching future pediatricians, but residency requirements demand

that all pediatrics residents receive training from a significant number and variety of subspecialist pediatricians, who usually practice in children's hospitals and academic health centers. Cone Health does not have the subspecialty faculty to house its own pediatric residency, but it is an outstanding place to collaboratively build a focused track. In this track, generalist pediatric education is concentrated in the clinics, nursery, and hospital setting in Greensboro, and subspecialty teaching takes place in Chapel Hill.

With the passage of the Patient Protection and Affordable Care Act in 2010, grants from the Health Resources and Services Administration (HRSA) became available for primary care residency expansion [4]. This opportunity catalyzed the initiation of the UNC Pediatrics Primary Care Residency Program, which was funded with a \$3.7 million award to support 4 incoming interns per year for 5 years. This award provides salaries and benefits for the residents and covers their educational expenses; grant funds cannot be used to support faculty time or program administration.

For each of the 3 years since it began operating, the program has successfully filled all offered positions through the National Resident Matching Program. The first class will not graduate until June 2014, so data are limited, but the program appears to be meeting the goal of producing primary care providers, especially those who will practice in underserved areas. Currently all 12 of the residents who are enrolled in the first, second, or third year of the program intend to pursue a career in primary care pediatrics.

### **Curriculum**

The curriculum of the Pediatrics Primary Care Residency Program is unique. Each resident spends at least 6 months per year in the Cone Health system, during which time they have daily contact with a small group of 8 general academic pediatricians. These residents have continuity clinic at Guilford Child Health, which is now a federally qualified health center. The clinic experience of the pediatrics primary care residents is very different from that of residents

who participate in a traditional continuity clinic. Most pediatrics residents spend only 1 half-day per week in the continuity clinic, but pediatrics primary care residents work and learn in the continuity clinic across many rotations. That experience allows for longitudinal exposure to the same patient population. And because the pediatrics primary care residents work in newborn nursery, clinic, and hospital settings, they often have the opportunity to follow the same patient across multiple clinical venues. Thanks to the longitudinal design of the curriculum, the pediatrics primary care residents spend approximately 50% more time at their home continuity practice site than do categorical pediatrics residents.

Another unique aspect of the pediatrics primary care residency program is that required experiences in adolescent medicine, behavior and development, advocacy, and acute care are delivered longitudinally rather than in blocks. Pediatrics primary care residents have the opportunity to see their own continuity patients with pediatrics

subspecialists by following those patients to their consult visits. As part of their advocacy and outreach experiences, residents participate in a variety of community programs to learn about community-based health care resources for patients.

With a smaller resident-to-faculty ratio, these learners have more opportunities to tailor their experiences based on relationships. Regular self-assessment reveals which skills residents still need to learn, and the continuity of faculty relationships allows for feedback on skill development. Residents also have the opportunity to develop relationships with one another as peers and with faculty members who support the residents' commitment to primary care pediatrics. Monthly lunches for residents are followed by seminars that address topics essential to the systems-based practice necessary when providing care in a medical home. Residents also are taught relevant skills in population health, including quality improvement techniques, and they are required to do an advocacy project. A month-long rural health experience is also required.

The residents in the Pediatrics Primary Care Program rotate in Chapel Hill at the North Carolina Children's Hospital to receive subspecialty education and exposure to tertiary care management, including education in pediatric and neonatal critical care, childhood cancer care, management of complex congenital heart disease, organ transplantation, and other conditions requiring subspecialty management. This rotation also allows the pediatrics primary care residents to interact socially with the large group of graduate medical learners at UNC.

The benefits of continuity in the educational setting have been well described by Hirsh and colleagues [5]. Continuity of care with patients allows students to learn about evolution of disease and promotes awareness of responses to recommendations. Continuity of curricular setting and of faculty relationships provides additional benefits for learners' development and continued optimism. Similar to experimental models being considered in other primary care specialties, this model aims to make the continuity clinic experience of residency more fulfilling and educational [6].

## Outcomes

The UNC Pediatrics Primary Care Residency Program will increase the number of pediatricians graduating this year in North Carolina from approximately 70 to 74, an increase of nearly 6%. In addition, all 4 graduates of the UNC Pediatrics Primary Care Residency Program plan to practice primary care, and each is actively considering opportunities in underserved areas.

Because of their more focused training, the residents in the pediatrics primary care track are better trained for primary care than are residents trained via a traditional model in a tertiary care setting. The pediatrics primary care residents have learned to provide team-based collaborative

care, and they have been taught by community pediatricians who have mastered the skills necessary to care for children with complex health care needs. Faculty members have noticed that the pediatrics primary care residents "think like partners in a practice," providing important information to the hospital team when a patient from their continuity team is admitted and providing acute follow-up care as needed for patients when their continuity provider is away.

The cohesive relationships within the small group of committed residents and faculty members allow more opportunities for direct observation and trusting responses to constructive feedback. As a result, pediatrics primary care residents seem to show greater improvement in clinical performance over the course of the residency experience compared with categorical track residents.

These well-trained pediatrics primary care graduates are likely to stay in North Carolina. Currently, at least 3 of the 4 residents who will soon be graduating from this program are hoping to find a practice location in the state. Having 4 new pediatrics primary care providers in the state will increase the capacity for primary care pediatrics by 10,000-15,000 patients per year, based on a standard primary care patient panel size. Given the diverse patient population these trainees have worked with at Guilford Child Health, they are well prepared to make a significant impact on primary care needs wherever they choose to practice.

An unexpected outcome of the program has been increased diversity of the UNC pediatrics residency cohort. Only 6% of the categorical track residents are members of an underrepresented minority, but of the 12 residents thus far enrolled in the pediatrics primary care track, there are 4 African Americans (3 women and 1 man). Research has shown that physicians from underrepresented minorities are more likely to practice in underserved settings [7] (see Table 2).

## Concern for Sustainability

Educating residents is expensive. In our program, providing an annual salary and benefits costs approximately \$70,000 per resident per year. That does not include costs in faculty time, facilities, recruiting costs, or administrative support. The estimated actual cost of graduate medical education is \$143,000 per resident per year [8].

Although all stakeholders seem quite pleased with the results of the UNC pediatrics primary care track, securing sustained funding is challenging. Unfortunately, the HRSA grant will not be renewed. Graduate medical education funding comes largely from the Centers for Medicare & Medicaid Services; because positions in pediatrics are currently capped at UNC, the 4 positions created for the pediatrics primary care residency program do not receive Medicare funding. We are exploring other options for funding, including state, philanthropic, and clinic or hospital support. A recent report on graduate medical education from

**TABLE 2.**  
**Comparison of Pediatric Residency Programs at the University of North Carolina School of Medicine**

	Pediatrics primary care residency	Pediatrics categorical residency
Total number of residents (in the first, second, and third years of the program) in 2013-2014	12	50
Proportion of residents who are men	17%	28%
Proportion of residents who are members of an underrepresented minority	33%	6%
Number of residents who will graduate in 2014	4	17
Number (%) of 2014 graduates intending to enter primary care practice (nonhospitalist)	4 (100%)	6 (35%)
Number of applicants in 2013	259	1072
Number of applicants per available position in 2013	65	67

the Cecil G. Sheps Center for Health Services Research at UNC encourages states to support funding of graduate medical education positions because of the direct impact of such funding on the physician workforce of the state [9].

## Conclusion

Changes in the clinical environment and in the regulations surrounding resident education demand that training programs allow learners to shape their experiences to further their career goals. In this way, educational opportunities will improve residents' effectiveness in practice after training. The UNC Pediatrics Primary Care Residency Program is accomplishing its goal of producing primary care pediatricians. We believe that because of their focused educational experience, continuity both with patients and with small groups of faculty members, and the social support they receive, these residents will enter the workforce better prepared to provide a medical home for children. By training in a community program that is focused on outcomes and good stewardship of health care resources, these primary care pediatricians will have the skills they need to thrive in the new value-based health care environment. The challenges of funding graduate medical education are significant, and there is a risk that this valuable program will have to be discontinued when the money from the current HRSA grant has been spent. *NCMJ*

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