

# MEDICAL SCHOOL HOTLINE

## Medical School Affects the Career Location of Pediatric Resident Graduates

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According to the Hawai'i Physician Workforce Assessment Project, Hawai'i currently has a physician shortage of 600, with an impending shortage of up to 1,600 physicians by the year 2020. A way to offset this growing situation is by supporting University of Hawai'i residency programs to train future physicians. To better understand the contributions that these residency programs make to the community the history, alumni data, and program highlights of the University of Hawai'i Pediatric Residency Program (UHPRP) are explored.

### History of UHPRP

There is a long and colorful history of UHPRP with the first group of residents trained in 1955. The residency program was a one-year program located at Kaula Children's Hospital. At that time, three residents made up the entire program. Over the next two years, the number of residents increased to eight house staff physicians. The training period was extended to two years. There was no pediatric faculty. Two visiting professors helped to train the residents. From its humble beginnings, the program has grown to include every pediatric specialty with 24 pediatric residents and 83 faculty members. These physicians care for children in the intensive care units, emergency departments, in-patient wards, and outpatient clinics at Kapi'olani Medical Center for Women and Children (KMCWC), the only children's hospital in Hawai'i.

In 1967, the John A. Burns School of Medicine (JABSOM) was established. The UHPRP has been linked to the medical school ever since. The pediatric teaching program was expanded under the direction of Dr. Ralph Platou who was the first Chair of Pediatrics. In 1971, Dr. Sherrel Hammar arrived as Director of Outpatient and Adolescent services, and in 1973 he was appointed Chair. Dr. Hammar developed the residency into a three year accredited program. In 1975 this program met the requirements for the American Board of Pediatrics. Continuing his strong leadership, from 1996 to 1999, Dr. Hammar served as interim Dean of JABSOM. He helped to guide the school towards its present level of excellence.

A major change occurred for the program in 1978, when the pediatric residency program and hospital moved to its present-

day location at KMCWC. The merger produced a premier example of a successful hospital collaboration. This laid the groundwork for a more recent development whereby KWCMC, Pali Momi, Straub, and Wilcox hospitals united under Hawai'i Pacific Health Corporation (HPH). Both KMCWC and HPH have supported the pediatric residency program for over 35 years. The financial strength of this large merger has insured continued support of training programs for the pediatricians in Hawai'i.

### UHPRP Alumni

Since 1975, the Department of Pediatrics has maintained an alumni database that tracks all resident graduates of the program. Initially this database was used to examine the number of publications by our resident graduates; however data is now extended to track UHPRP alumni careers. The database is now used to study the different career choices and specialties that graduates have chosen over the years (see Table 1). The alumni database revealed that 259 pediatricians have graduated from the program since 1975 through 2011. To further track our graduates, their career choices were categorized into the types of pediatric careers. A majority of the residents (59%) went into general practice, while the remaining residents (41%) went on to further training. This included 9% who went into both internal medicine and pediatrics, and 6% going into psychiatry and pediatrics. The data reveals that 27% of UHPRP residents went into pediatric subspecialty fellowships following the completion of their residency. As shown in Table 1, UHPRP graduates undertook a wide variety of subspecialties, which provides much needed expertise to the pediatric community (specialization allows for a higher level of care that leads to the improvement of health outcomes for the pediatric population). The location of practice of the alumni pediatricians was examined using Internet search engines and information from the department of Pediatrics. It was found that two thirds (67%) of the physicians who graduated from the residency program remained in Hawai'i to practice (n=174). The impact of these 174 pediatricians is significant considering that the average pediatrician cares for approximately 1,564 patients. This would

Table 1. Career Choice for the Pediatric Resident Graduates of the Hawai'i Residency Program.	
Career Choice	Total
Adolescent	4
Allergy	2
Anesthesia	4
CDC Fellowship	1
Pediatric Critical Care	5
Dermatology	1
Development	6
Emergency Medicine	12
Medicine and Pediatrics	23
Neonatology	6
NIH Fellowship	1
Pediatrics-Categorical	152
Pediatric Cardiology	5
Pediatric Endocrinology	2
Pediatric Hematology	5
Pediatric Infectious Disease	2
Pediatric Nephrology	1
Pediatric Neurology	4
Pediatric Pulmonary	3
Pediatric Rheumatology	3
Physiatry	1
Psychiatry and Pediatrics	15
Sports Medicine	1
<b>Total</b>	<b>259</b>

The career choices for the graduates of the Hawai'i Pediatric Residency program were tabulated to illustrate the variety of the different pediatric subspecialties pursued by our graduates. This represents the graduates from 1975 to 2011.

amount to the program's pediatricians potentially caring for 272,136 children or 89% of Hawai'i's pediatric population as projected by 2011 census data. This data shows that UHPRP has made an impact on the majority of the state's children.

The database also revealed that the medical school attended has an impact on where students choose to go for their residency, and eventually where they choose to practice. The alumni database was useful in studying some of these concepts. The majority of these graduates (51%) attended medical school at JABSOM. The remaining residents attended medical school either in the continental US (36%), or were international medical graduates (13%). Thus, the role a local medical school plays in supplying quality medical students for the local residency program is apparent. It was estimated that it was four times more likely that the graduating resident from JABSOM, would remain in Hawai'i to practice after residency (odds ratio 4.3 [P-value <.001] with 95% CI [2.4-7.9]). It is concluded that the pediatric residents who attend JABSOM were more likely to stay in Hawai'i to practice. The implication of this finding is

that our resident recruitment process should begin early in our medical school to maintain the number of pediatricians needed to care for Hawai'i's children.

### UHPRP Program Highlights

There are many reasons why sixty-seven percent of UHPRP graduates decided to stay in Hawai'i to practice. The program has had an excellent continuity clinic where pediatric residents can follow their own patients through their three years of residency. As part of the program, teams of first, second, and third year residents were developed. Each of these teams was assigned to care for a particular community. The teams continue to be responsible for these children when they were admitted to hospitals. These teams served children from Kalihi Palama, Waimanalo, Kalihi Kokua Valley, and the Wai'anae Coast Comprehensive Health Centers. The upper level residents were team leaders and were responsible for these patients as well as the junior residents in their groups. The third year residents were on call for and were responsible for any of these patients coming into the emergency department or inpatient wards for six months at a time on a daily and nightly basis. When a national call for the reduction of resident work hours was instituted, this type of day and night coverage was not possible. With this change, the residents lost this valuable opportunity to be responsible for a community population, yet their personal quality of life improved. Within the department, there is a group interested in re-developing this team concept for continuity clinic, and to do this within the 80-hour work week, which is the national accreditation standard.

Some of the programs in place to encourage positive experiences for the medical students by the Department of Pediatrics include supporting interest groups, providing mentorship opportunities, and encouraging small group classes. The Pediatric Interest Group, which occurs during the student's pre-clinical first and second year, has been supported by the faculty and department. In the clinical years, each third year student is assigned a pediatric faculty member as an advisor and mentor during their clinical rotations. The students meet weekly with faculty members during their clinical pediatrics block. This activity is designed to support both the student's personal and professional growth. Through this relationship with a Pediatrics faculty member, the student expands their network and may be encouraged to remain in Hawai'i to practice. Many students start to realize that an important aspect of training is developing a network of specialists needed to properly care for their patients. An advantage of going to residency where the student did their medical school training is that many of their mentors during this training become a part of their personal network. It is easier to discuss patient care with a mentor or former teacher, which strengthen relationships that prove to be valuable into later years of practice.

To have 107 JABSOM graduates successfully apply, and finish a specialty fellowship is an accomplishment considering that UHPRP is a small program. Most of these graduates did not have difficulty getting into their top choice for fellowship.

Being from a smaller program may be advantageous to our residents since many of those applying can be mentored by attending physicians who are in the specialty that the resident wishes. This is an example of the network developed by the training physician that begins from the time resident graduates are in medical school. Faculty physicians can mentor the resident graduates throughout the entirety of training and even into practice.

The trust between attending specialists and future graduates is formed during the trainee's early development that carries over to the patients who are cared for by both specialists and future graduates. Mentorships do not end when the training program is finished. These personal relationships benefit not only the trainees but the advisors as well. These interactions enrich the careers of the residents, faculty, and community pediatricians. It helps in patient care by allowing open and trusted consultation between physicians.

Current pediatric residents who completed medical school at JABSOM cite many reasons for staying in Hawai'i to train. First and foremost was the caliber and collegiality of the faculty and staff which is enhanced by the small size of the program. Second is the diverse patient population at KWCMC. It is a busy hospital. The volume of patients is nearly always at a maximum, thus allowing residents to have more than adequate patient rosters. Being at the gateway of the Pacific provides the residents an opportunity to care for patients with unique and often rare pathology, which stimulates the academic learning process. Third, since the program usually does not have fellows, the students and residents can interact directly with the attending specialists. These close-knit and easily accessible interactions help to strengthen relationships that can last throughout one's career.

In larger programs, the students and residents often interact only with the training fellow who has less experience to offer than an attending faculty. Additionally, residents mentioned they had gotten to know the attending very well, and it was evident that these faculty truly enjoyed teaching. Residents also felt that the diverse backgrounds of the faculty further broadened their perspectives on patient care.

## Conclusion

Pediatrics and medical care in general have become increasingly complex. As a result in improvements in technology, and a decrease in mortality in pediatric medicine, there have been increases in morbidity from complex conditions. In turn, improvements in medical technology and pharmacology have increased the need for pediatric subspecialists who have received advanced training to care for these complicated cases. The need for well-trained general pediatricians and specialists is an important aspect of providing for the needs of an entire state. Many of the pediatric subspecialty training programs are

now three-year programs and involve intense training in one area of pediatrics. Research is often an important aspect of this training and many physician scientists are developed from these training programs. Good clinical outcomes and cutting edge treatment are important aspects for further training, and these specialists then return home to offer these advanced procedures and knowledge to the local community. This not only benefits the children and their families, but also benefits general pediatricians who see improved care of complex medical and surgical conditions for their patients.

The continued recruitment of quality physicians will require pro-active strategies and processes. It has been noted that resident graduates were more likely to remain and practice in Hawai'i if they had gone to JABSOM, the local medical school. This point underscores the importance of a strong medical school to support the health care needs of the community. Without either JABSOM or the pediatric residency programs, the number of pediatricians that choose to practice in Hawai'i may be affected and the children in Hawai'i may not have the quality of care that they receive today. The partnership between the medical school and residency programs is vital to maintain an adequate number of pediatricians in our community to care for our *keiki* (children) population. It is important that the program continues to provide postgraduate training to benefit the local community. One could question, "are the residents graduating from this program good physicians and pediatricians?" Nationally, this is an area of deep concern and it is difficult to study this component objectively and quantitatively. There is the additional concern with the reduction of work hours mandated by national accreditation boards to help insure patient safety concerns. Despite the fact that clinical duty hours are restricted and less experience occurs, residents continue to develop into excellent physicians. The faculty feels comfortable with the level of care offered by JABSOM graduates, since they have been observed in clinical roles and have interacted with them as fellow specialists.

## Conflict of Interest

None of the authors identify a conflict of interest.

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