

MEDICAL SCHOOL HOTLINE

Addressing Physician Shortage in Hawai'i - Kaua'i Medical Training Opportunities

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<https://doi.org/10.62547/GRQB2504>

In 1993, the Medical School Hotline was founded by Satoru Izutsu PhD (former vice-dean UH JABSOM), it is a monthly column from the University of Hawai'i John A. Burns School of Medicine and is edited by Kathleen Kihmm Connolly PhD; HJH&SW Contributing Editor.

Abbreviations

HHSC = Hawai'i Health Systems Corporation
HPH = Hawai'i Pacific Health
JABSOM = John A. Burns School of Medicine
KMTT = Kaua'i Medical Training Track

A recent report published by the Association of American Medical Colleges (AAMC) projects a significant physician shortage in the US, with estimates ranging from 13 500 to 86 000 physicians by 2036. This estimate accounts for increases in graduate medical education funding and positions, and is based on physician supply determinates, population demographics (growth and aging), supply of other health care professionals (eg, advanced practice registered nurses and physician associates), and other trends in health care such as a focus on population health.¹ For the state of Hawai'i, according to the Hawai'i Physician Workforce Report 2023 (Hawai'i/Pacific Basin Area Health Education Center), currently there is a 21% physician shortage statewide.² Shortage is calculated by dividing the availability of physicians over demand. The shortage on neighbor islands is even greater at 30% to 43% as compared to O'ahu.² Based on a rating scale comparing state shortage ratio to the national mean (C grade), the state of Hawai'i was awarded a D grade (± 1 SD) for projected physician shortage in 2030.³

For those living in rural and medically underserved areas, the growing physician shortage poses a greater threat as these populations are already experiencing higher incidences of disease with poorer outcomes.^{4,5} Health conditions such as heart disease, cancer, stroke, diabetes, and unintentional death are disproportionately higher in rural communities where access to health care is already difficult due to geographic, economic, social and physician workforce factors.^{4,5} Specialty care in rural areas is often sparse to non-existent, and primary care physicians often have to treat a wide variety of patients with limited resources.⁵

Kaua'i County, which makes up the entire island of Kaua'i, is the second most rural county in the state of Hawai'i. Across the state, 13.9% of the population lives in rural areas. Kaua'i County is federally designated as rural.⁶ According to a state report in 2020, 42% of the county's population live in rural areas, which on Kaua'i accounts for 96.2% of the island's total land area.⁷ The total physician shortage for the county is currently estimated at 30%.² For many specialties, Kaua'i residents must travel off island due to no availability of specialty care on island. This includes care in the following specialties: allergy and immunology, neonatology, pediatric cardiology, endocrinology, pulmonology, rheumatology, pediatric gastroenterology, and pediatric hematology and oncology.²

In addressing the physician shortage in rural and medically underserved areas, a multifaceted approach is needed. One approach is to increase the physician workforce by providing more educational and training opportunities geared towards rural populations. Training and educational experiences in rural areas has shown to be a strong predictor to practicing medicine in those areas, even stronger than having a rural background.^{8,9} To provide rural educational experiences, the John A. Burns School of Medicine (JABSOM), has developed and launched the Kaua'i Medical Training Track (KMTT). This is a medical education rural training track on the island of Kaua'i. The KMTT offers a unique longitudinal opportunity for students to live and train within the Kaua'i community for a total of fifteen months throughout all 4 years of medical school with an additional curricular focus on the health care needs of Kaua'i patients. Additionally, the KMTT provides a foundation to expand residency rotation opportunities and establish a family medicine residency program on Kaua'i, which is currently seeking accreditation.

Kaua'i Medical Training Track

The KMTT is funded by a \$10 million grant from Dr. Priscilla Chan and Mark Zuckerberg family and is designed to help address the physician shortage and directly improve the health and wellness of the people of Kaua'i. The KMTT, which is currently in the fourth of 6 total years, consists of a cohort of up to 6 students each year from the incoming class who will spend a significant portion of their training throughout medical school on the island of Kaua'i. Medical students with strong interest in rural health, and/or connections to Kaua'i or another neighbor island are given high preference for the track. KMTT offers scholarships covering 4-year full tuition and fees. Airfare, ground transportation, and lodging while on Kaua'i are provided by KMTT funding. Scholarship recipients commit to practicing medicine on Kaua'i in the 4 years following residency or fellowship training in any specialty. The first cohort of students started in 2022.

Kaua'i On-Island Student Experiences

During the first semester, students start with 2 weekend trips to Kaua'i to learn about the island and participate in community service activities. This is followed by a 4-day visit to Lana'i to explore how other rural communities and their health systems navigate the challenges of rural health care. Throughout preclinical first and second years of medical school, students complete an MD-program "unit" on island mentored by a Kaua'i based faculty member. In addition to their classroom-based coursework, students learn about the Kaua'i community, participate in service learning, and practice their clinical skills. The third cohort of students, who are in the first year of medical school, will be living on Kaua'i during their fourth academic block which takes place over 9 weeks in Spring 2025. During the summer, this cohort will spend an additional 4 weeks on Kaua'i engaged in clinical shadowing, research, or public health activities.

During the clinical third and fourth years of medical school, students live on Kaua'i for their outpatient clerkship semester and experience several additional clinical rotations and electives. Over the past 2 years, the curriculum has refined clinical skills education and added more in-person activities such as personal advising with faculty, public health activities with the Kaua'i District Health Office, and exposure to a greater variety of clinical shadowing opportunities.

Kaua'i Community Engagement

Community engagement continues to be a foundational objective of the KMTT. At a welcoming reception in August 2023, both cohorts of students met Kaua'i community stakeholders to better understand the health care challenges on Kaua'i. The second-year students worked with Health Services Pathway students at Kaua'i High School to discuss various pathways

into medicine for rural high school students and to practice clinical skills specifically utilized in adolescent patients. As part of National Public Health Week, the first-year students represented JABSOM at the Kaua'i District Health Office Health Fair. They also participated in Teen Health Camp at Kapa'a High School, attended a workshop on Native Hawaiian traditional healing practices, and engaged in land restoration at the McBryde Garden of the National Tropical Botanical Garden.

Kaua'i On-Island Faculty

The excitement and planning for the KMTT resulted in stronger relationships with Kaua'i physicians and health systems, and more clinicians interested in teaching our medical students and residents. There are now 48 total clinical physician faculty in various medical and surgical specialties on Kaua'i. Faculty development continues with sessions that include curriculum specifically tailored to health care in rural areas and simulation-based medical education workshops. Support from health systems on Kaua'i has also expanded and in the 2024-2025 academic year students now have rotations at 5 different sites across the island with physicians from Hawai'i Pacific Health (HPH), Hawai'i Health Systems Corporation (HHSC), and Ho'ola Lāhui, the Federally Qualified Health Center and Native Hawaiian Healthcare System for Kaua'i. Also, KMTT students have participated in meetings to establish a pilot program on Kaua'i to integrate behavioral health into primary care physician practices.

Kaua'i Residency Expansion

Kaua'i Residency Rotation Opportunities

For the last 3 years, efforts have been made to expand residency rotation opportunities on Kaua'i island. Several meetings were held with the JABSOM department chairs, residency and fellowship program directors and their administrative staff to explore what types of future residency rotations would provide an excellent educational experience for their residents. Due to a lack of or insufficient types of medical and surgical specialties, limited breadth of patients, or lower procedural volume, residency rotations in some specialty areas would not meet accreditation requirements. The primary care specialties, such as family medicine, pediatrics, and internal medicine are more conducive to rural rotations in small communities, such as on Kaua'i. Building on the foundation of faculty and clinical learning environment infrastructure built by the KMTT grant, graduate medical education residency elective rotations on Kaua'i were established for the 2023-2024 academic year. New electives were created in pediatrics, family medicine, and obstetrics-gynecology. A total of 7 residents participated in these rotations. While rotations in other specialties such as primary care internal medicine and geriatrics are possible in the 2024-2025 academic year, shortage of housing is a major barrier.

Kaua'i Family Medicine Residency Program

In 2021, the JABSOM family medicine department chair, the residency program director, and the JABSOM associate dean for academic affairs convened stakeholders from HPH, HHSC, the Kaua'i District Health Office, Ho'ola Lāhui, private providers, and Hawai'i Residency Programs to draft a residency curriculum and apply for a grant through the US Health Resources and Services Administration Rural Residency Planning and Development program. To help ensure sufficient dedicated educational leaders for neighbor island medical education, JABSOM worked with the 2022 Hawai'i State Legislature to garner additional faculty resources. The legislature approved a total of 2.0 full-time equivalent (FTE) faculty funding to expand neighbor island training sites. One FTE (a total of 5 part-time positions) is for Kaua'i, given the need for institutional commitment for the core residency program faculty members and need for dedicated faculty in other disciplines. Recruitment is ongoing for several core faculty members who will be dually employed by JABSOM and HPH or HHSC. The state's funding combined with Kaua'i stakeholders' commitment and resources, helped JABSOM secure a 3-year \$750,000 grant in August 2023 to plan for a new JABSOM Family Medicine residency program on Kaua'i island. Affordable housing remains a significant challenge, so the JABSOM continues to work with Kaua'i partners to find solutions.

The proposed residency program is in the process of seeking accreditation. If granted, the first cohort of 4 family medicine residents would first complete the majority of their first year of training on O'ahu in 2025, in specialty areas not available on Kaua'i, then move to Kaua'i in 2026 to complete their remaining 2 years of training. The Kaua'i Family Medicine residents will have a unique combination of outpatient, inpatient, public health, and community-based experiences that will be tailored to the community needs of Kaua'i island. The program aims to grow community advocates and possibly lifetime Kaua'i residents.

Conclusion

The health and welfare of the US is at risk if the physician shortage is not addressed. There is potential for significant negative effects in the future of health care delivery, health

outcomes, and would further widen health disparities in rural and underserved areas. Increased workload for physicians due to workforce shortages will lead to added stress, burnout, and potentially early retirements, which would exacerbate the situation. Solutions must be diverse and multifactorial. Increasing and optimizing telehealth will improve health care, however, in many rural areas, and for elderly, access and utilizing broadband technology may still pose a challenge. Increasing the physician workforce through education and training, which include more exposure to rural medicine, increasing residency positions and scholarship incentives to work in rural and underserved areas, and expanding access to both international medical students and graduates can help address physician shortages.^{4,5} With government legislation and funding, and community support, initiatives such as the KMTT and Family Medicine residency program on Kaua'i island are addressing shortages and providing potential physician workforce.

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