

Resident research improves patient care



Dr. Joshua May and Dr. Jacqueline Nguyen

At the Kaiser Permanente Los Angeles Medical Center, pediatric resident Jacqueline Nguyen, MD, wanted to know how flu shots affected young patients with asthma. With help from her resident research advisor, she dug into data from electronic health records and found that flu vaccination reduced hospitalization rates for respiratory issues by 25% over the 6-year period studied.

“Residency research allowed me to investigate questions that I wanted to answer,” Dr. Nguyen said, “especially during flu season, when many families can be skeptical about the benefits of flu vaccination.”

Dr. Nguyen is emblematic of a growing number of residents throughout Kaiser Permanente Southern California who have helped improve clinical practice.

In addition to Dr. Nguyen’s work, research by residents in the Pediatrics Department at the Los Angeles Medical Center has led to better booking of follow-up appointments and fewer unexpected intubations among pediatric ICU patients.

Graduate medical education research informs practice

“Our graduate medical education research program provides a real-life world for residents to experience research,” said Joshua May, MD, associate program director of the pediatric residency program at the Los Angeles Medical Center. “Their research experience is much more practical than in many places and can set them up for a strong future career.”

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bring the perspective of a doctor who is always aware of areas for improvement and looking for ways to make things better,” he added.

At Kaiser Permanente, physician and scientist research is continually improving the quality of care to patients and the community. Medical residents add to this learning cycle by using their fresh eyes to spot potential improvements and conducting research. They often present that work to physicians and the wider medical community, at conferences and through publications.

The group that oversees medical residencies in the United States, the Accreditation Council for Graduate Medical Education, requires residents to engage in scholarly activity during their education. The activity can vary greatly from resident to resident and program to program.

Resident research program formalized 5 years ago

KPSC formalized its research program for residents in 2015 when it hired 2 people to oversee the program. The aim was to provide structure and programming for research during residencies. At any given time, there are about 400 residents and fellows in the program.

Kristen R. Ironside, MA, the research program manager for graduate medical education at the Los Angeles Medical Center, said she believes they’ve “started to shift the culture of research within the residency space.”

“We spent a lot of time training faculty who are now research champions within their departments,”



Dr. Bechien Wu

she said. “We’ve given them the confidence to do research projects and to teach, and by doing so, we’ve created new pathways for research.”

New mentorship program increases research potential

In 2019, the Regional Research Committee introduced a new pilot program to fund research: a graduate medical education mentorship grant. The grant supports faculty mentors to develop research projects that are suitable for collaboration with residents and post-doctoral students.

“There’s true alignment between our graduate medical education and our organizational goals of conducting patient-oriented research,” said Bechien U. Wu, MD, MPH, chair of the committee. “From day 1, all our research efforts are oriented toward identifying areas where we can improve care for our members. The faculty mentors are the bridge for guiding the trainees and identifying some of those key questions so the residents and post-docs can be successful now and in the future.”

The RRC funded 2 mentorship projects in 2019. John J. Sim, MD, area research chair for the Los Angeles Medical Center, and second-year fellow Thet Aung, MD, focused on a study

called “Polycystic kidney disease characteristics and comparative outcomes within a real-world environment.”

They looked at whether there are racial or ethnic differences in the prevalence and progression in polycystic kidney disease. Researchers found that non-Hispanic whites and blacks had higher rates than Asians and Hispanics. The researchers used the work as preliminary data for a successful industry grant proposal. They are also using this study cohort to collaborate on a project with the radiology residency program.

Mingsum Lee, MD, PhD, is program director for the cardiology fellowship training program at the Los Angeles Medical Center. She worked with second-year cardiology fellow Cheng Chen, MD, on a study called “Acute myocardial infarction associated with the use of prescription medications.”

They created a database of patients with acute myocardial infarction (AMI) that cardiology fellows could use to study questions they encountered in clinical practice. Dr. Chen was particularly interested in the safety of triptans, which are medications used to treat migraine headaches.



Dr. John Sim and Dr. Thet Aung

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Some concerns had been raised about a possible association between triptans and AMI. Through his research, Dr. Chen showed that treatment with triptan was not associated with a significantly increased risk of AMI.

The projects were so successful that the RRC enthusiastically supported expanding the 2019 pilot into a fully funded project in 2020.

Scientist appointed as research liaison

In 2019, the Department of Research & Evaluation designated one of its researchers, Annette L. Adams, PhD, MPH, as research navigator. She serves as the first point of contact in R&E for clinician researchers. She also partners with the graduate medical education research program managers Ironside and Davida Becker, PhD, MSc.

“Most of my work so far has been consulting on study design,” Dr. Adams explained. “When people share a proposal or an idea, we talk about it and I try to gather information that our statistical unit will need to implement the project.”

She also works with the clinicians and residents to think about decisions such as how to define illnesses and what co-variables might be important to consider.



Dr. Annette Adams

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Residency bolstered by research

Dr. Jacqueline Nguyen, who studied how flu shots affected young patients with asthma at the Los Angeles Medical Center, plans to become an outpatient general pediatrician with an emphasis on urgent care. She said one of the most memorable moments from her residency was when she received her preliminary data results.

“It made me realize the sheer impact and wealth of information that Kaiser Permanente has to draw upon,” she said. “I’ll never forget how my mentors, attendings, and colleagues reacted to my results. I understood how significant they were because they were so applicable to our daily practice.”