Kaiser Permanente
Research



Smarter Medicine

From prevention to treatment and beyond

Department of Research & Evaluation

2015 Annual Report

KAISER PERMANENTE®

Vision

The Department of Research & Evaluation has an integral role in the success of Kaiser Permanente Southern California by conducting high-quality, innovative translational research that benefits the health of its members and the communities from which they come.

Mission

The mission of the Department of Research & Evaluation is to initiate and conduct high-quality, public-sector health services, epidemiologic, behavioral, and clinical research that has a demonstrable positive impact on the health and well-being of Kaiser Permanente Southern California members and the general population.



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Message from the Senior Director



"It's about integrating individual clinical expertise and the best external evidence."

That's the opening line of a seminal editorial on "Evidence-based medicine: what it is and what it isn't," published in *The BMJ* in 1996. Two decades later, experts and institutions around the world are still grappling with the best ways to integrate individual expertise and evidence. It's not a simple task.

Kaiser Permanente has been a leader in promoting evidence-based medicine. Our organization has a robust infrastructure to bring evidence into the hands of our clinicians. Regional and national programs develop clinical guidelines and assess new technology. Our comprehensive electronic health record, Kaiser Permanente HealthConnect®, provides evidence-based best practice alerts. Our research program plays an integral role, finding new evidence to address important clinical questions.

At Kaiser Permanente, it's about continuous learning.

Learning starts with questions. Is it safe to give my surgical patients the flu vaccine? Is there a better way to screen people with diabetes for retinopathy? Will robotic surgery improve outcomes for patients?

Answering these questions requires the right type of expertise—both scientific and clinical. Our Southern California research team has deep and broad expertise in health services research and implementation science, behavioral research, clinical trials research, epidemiologic research, and biostatistics research.

Our clinician partners and researchers come from a wide range of specialties and subspecialties. Clinical operations teams, such as the Surgical Outcomes and Analysis Department and the Complete Care Support Programs, are vital partners both in the conduct of research and in its translation back into practice.

And our research staff bring diverse talents, from project management to programming and statistical methodology. They are the backbone of our research program, supporting research projects and clinical trials throughout Southern California.

It's about smarter medicine, from prevention to treatment and beyond.

Our research studies span the full spectrum of care, from prevention to treatment and beyond. Together, we examine the safety and effectiveness of vaccines for vulnerable populations, compare the effectiveness of different surgical techniques and technologies, and find smarter ways to care for patients after cancer.

We extend our capabilities through clinical trials networks and research partnerships. These collaborations are helping us develop better ways to detect lung cancer, care for women with pelvic floor disorders, and understand diabetes in young people.

Research can validate innovative programs. Evaluations of the Eye Monitoring Center and the online Personal Action Plan helped to demonstrate their value. These programs earned the 2015 David M. Lawrence Patient Safety Award and 2015 James A. Vohs Award for Quality.

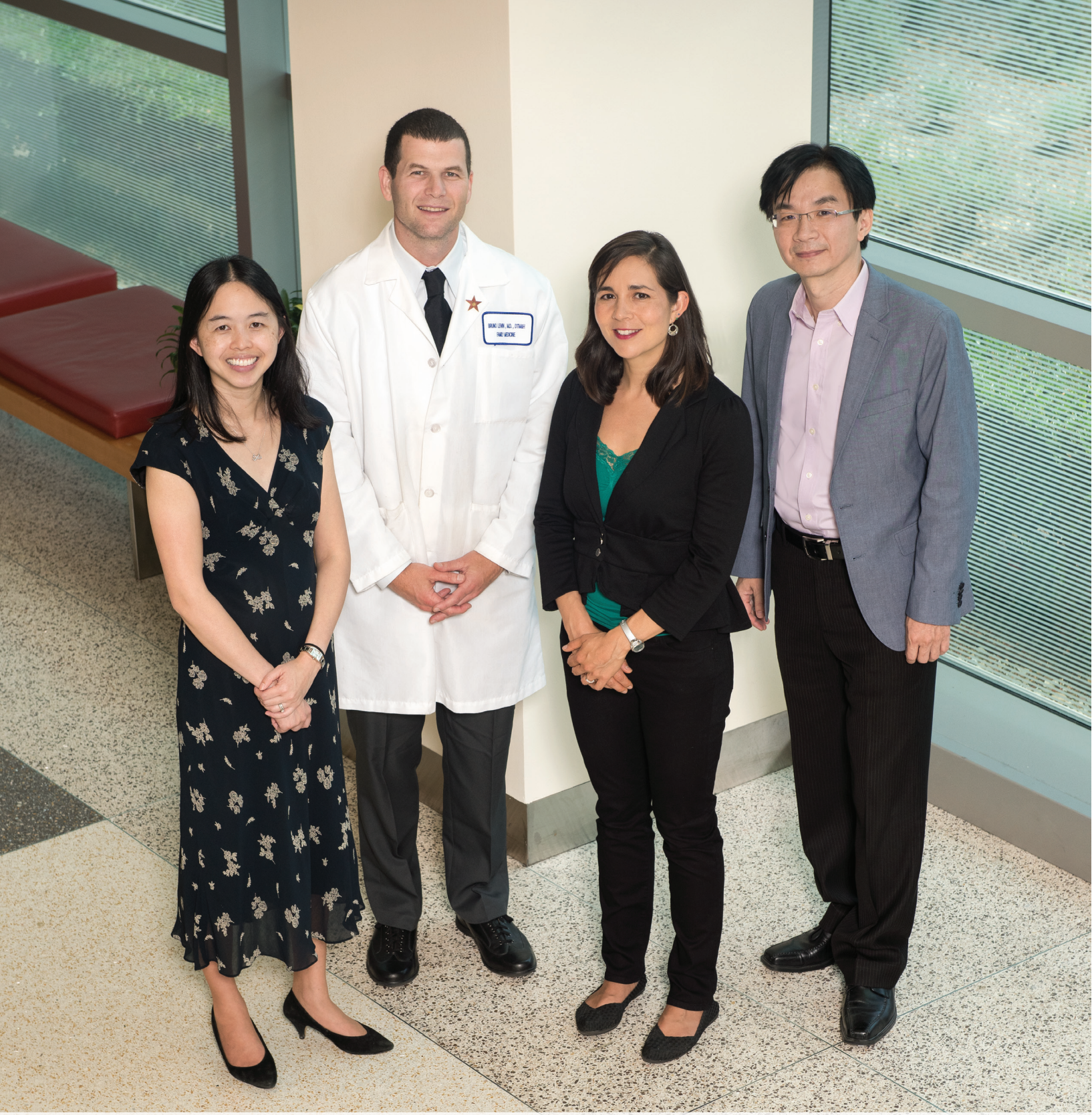
Kaiser Permanente's approach to evidence-based medicine is about finding smarter ways to practice medicine. We are a learning health care organization, constantly looking for innovations that will benefit our members and make health care better and more affordable for the communities we serve. Every day, we make medicine smarter.



Steven J. Jacobsen, MD, PhD | Senior Director of Research



Research Highlights



Center for Vaccine Safety and Effectiveness Research

Vaccine research leads to smarter recommendations

The Kaiser Permanente Southern California Center for Vaccine Safety and Effectiveness Research gives physicians confidence to recommend immunizations to the youngest, the oldest, and the most vulnerable of patients.

Day to day, physicians see sick patients, often prescribing them medications to make them healthy. When physicians administer vaccines, though, the patient is usually already healthy. The idea is to keep them that way. So, before recommending vaccines, physicians seek extra assurance that the immunizations meet the highest levels of safety and effectiveness.

That's why the Kaiser Permanente Southern California Center for Vaccine Safety and Effectiveness Research is so important. It gives physicians confidence to recommend immunizations to the youngest, the oldest, and the most vulnerable of patients.

Senior Director of Research Steven Jacobsen, MD, PhD, said the program focuses on vaccine safety, vaccine effectiveness, and barriers to appropriate vaccination.

"At the end of the day, we are trying to figure out how to best launch and execute our vaccine programs," Dr. Jacobsen said.

Or as Lina Sy, MPH, the senior research project manager in the vaccine program, puts it: "When you think of prevention, you think of vaccines. Immunizations are an important part of our care."

Vaccinating surgical patients for the flu

Often the discoveries within the vaccine program are made because of the close collaboration between physicians and researchers.

With the flu vaccine, some surgeons were reluctant to immunize surgery patients in the hospital due to concerns it could cause a fever or other issues that might mimic complications of surgery. Kalvin C. Yu, MD, chief integration officer for KPSC, saw the issue when he reviewed vaccination numbers. Gunter Rieg, MD, the regional infection control officer based at the Kaiser



Permanente South Bay Medical Center, saw it on the hospital floor. They both knew there was a place to get answers at KPSC: the Department of Research & Evaluation.

"The hypothesis comes from the bedside," Dr. Rieg said. "And the answers from the research."

Researcher Sara Tartof, PhD, MPH, is part of a group of infectious disease specialists who meet regularly from across the Southern California Region. She was able to frame the research question, get funding from the Centers for Disease Control and Prevention–supported Vaccine Safety Datalink, and conduct the research with the input of physicians.

The study found that surgical patients who received the flu vaccine during their hospital stay had no increased risk of emergency department visits or subsequent hospitalizations in the week following discharge, compared with surgical patients who did not receive the vaccine.

"What our research can do is educate physicians, and promote smarter medicine," Dr. Tartof said.

Bruno Lewin, MD, a family practice physician at the Los Angeles Medical Center, said that getting the message across to surgeons was easier after the research findings were published.

"It's much harder to argue with data that come from your own patients," Dr. Lewin said.

Page 5: Sheila Butts, Jacqueline Redeemer, Dr. Lara Durna, Dr. Reina Haque

Previous page: Lina Sy, Dr. Bruno Lewin, Dr. Sara Tartof, Dr. Hung Fu Tseng

Above: Dr. Bruno Lewin, Dr. Sara Tartof



Dr. Yu said one of the advantages of Kaiser Permanente is that questions can be answered relatively quickly. And then the findings are shared and implemented. He noted that the study also led to a better understanding of when surgeons were most comfortable administering the vaccine: the day of discharge.

"This is really one of the instances that shows that physicians and researchers can work together to improve public health," Dr. Yu said.

By July 2016, Dr. Rieg had already shared the study with more than a half dozen surgical chief groups in advance of the next flu season. He focused on the safety of the vaccine, and introduced the idea that it might even better protect patients in the post-surgical period.

"I really expect a clear increase in the number of surgical patients being vaccinated for the flu," Dr. Rieg said. "It's something to build on as years go by."

Improving HPV vaccination rates

Human papillomavirus immunization has had unique issues because the immunizations are recommended for those ages 9 years through young adulthood and HPV is passed through sexual contact, which affects the conversation between doctors and their teen patients and parents.

The virus affects both males and females and can cause health problems, including genital warts and cancers of the cervix, anus, and throat.

The CDC recommendation for the HPV4 vaccine for boys went through several changes over the years, including from "permissive use" to "routine use." A 2015 study found that rate of the HPV4 vaccination among boys enrolled in KPSC increased as the guidelines grew more encouraging: from 1.6% in 2009 to 18.5% in 2013.

"By identifying the gaps in the initiation and completion rates of the HPV4 vaccine series, we hope to help physicians determine which populations need more intervention to improve our vaccination rates," said the study's lead author, Rulin Hechter, MD, PhD.

Researcher Sharon M. Hudson, PhD, MA, looked at the issue of HPV vaccination of young people from a different perspective. What distinguishes medical centers with higher rates of the HPV immunization series completion from those with lower rates?

She said higher immunization rates were often a result of a "teamwork/pro-HPV culture."

"In the higher-completion medical centers, just about everybody recognized the importance of HPV series completion and entire departments worked together to achieve this goal. They had the attitude: It's just what you do," Dr. Hudson said. "In the lower-completion medical centers, the team working on it was a doctor and nurse."

She noted the medical centers with higher completion rates were more proactive, making appointments for patients rather than telling them to make appointments themselves. This became the norm because of the support physicians received from all levels of their department—from the staff to the chiefs.

Vaccinating against shingles

Researcher Hung Fu Tseng, PhD, MPH, was at a conference in Taiwan in 2014 when physicians brought him a question. They asked if giving the shingles vaccine to patients with end-stage renal disease and on dialysis was effective, because the immune systems of patients on dialysis aren't as responsive as those of the general population. Back at home, physicians were wondering the same thing. The shingles vaccine contains a live virus, so there is extra concern about giving it to people with poor immune systems.

Above: Dr. Bradley Ackerson, Julisa Oropeza

Next page, above: Dr. John Sim, Jennie Lewis

Next page, below: Dr. Jim Nomura, Erica Yang

"We have a wealth of information here. We want to make the best use of it and bring the best science to the public. And that is certainly not just a job. It's a blessing."

— Hung Fu Tseng, PhD, MPH



"Because of our conservative nature and our motto to 'do no harm,' we naturally defaulted to not giving the vaccine to this patient population," said nephrologist John J. Sim, MD, who is the area research chair at the Los Angeles Medical Center.

About 8,000 KPSC patients have end-stage renal disease. Dr. Sim and other nephrologists at KPSC each manage between 50 and 100 dialysis patients.

Dr. Tseng launched a study that found that elderly patients with end-stage renal disease who received the shingles vaccine were half as likely to develop shingles as those who were not vaccinated.

That's all Dr. Sim needed to hear.

"It was reassuring that the vaccine didn't cause harm and actually benefited this patient population," Dr. Sim said, "and, especially since it was a study from our own clinical practice environment, it gave us confidence to vaccinate."

Vaccine research is important to health

Dr. Tseng said he is deeply gratified that the work he and the KPSC vaccine research team do helps people live healthier lives.

"We have a wealth of information here. We want to make the best use of it and bring the best science to the public," Dr. Tseng said. "And that is certainly not just a job. It's a blessing."

Clinical trial tests *C. diff* vaccine

Kaiser Permanente Southern California is participating in an international clinical trial to prevent infection from the *Clostridium difficile* bacteria. The common and resilient bacterium, which can cause symptoms ranging from mild diarrhea to life-threatening colitis, is a growing public health concern.

The U.S. Food and Drug Administration granted fast-track designation to the study, which is led by vaccine maker Sanofi Pasteur. The investigational vaccine stimulates the immune system to produce antibodies that bind the toxins generated by the *C. difficile* bacteria upon exposure, to prevent clinical disease even if patients become infected with *C. diff*.

"Patients come to the hospital for care for their medical condition. We don't want them to develop a potentially serious or even fatal complication like *C. diff* infection while they are here," said Jim Nomura, MD, site principal investigator for the Cdiffense trial at Kaiser Permanente Southern California and infectious disease specialist at the Kaiser Permanente Los Angeles Medical Center.

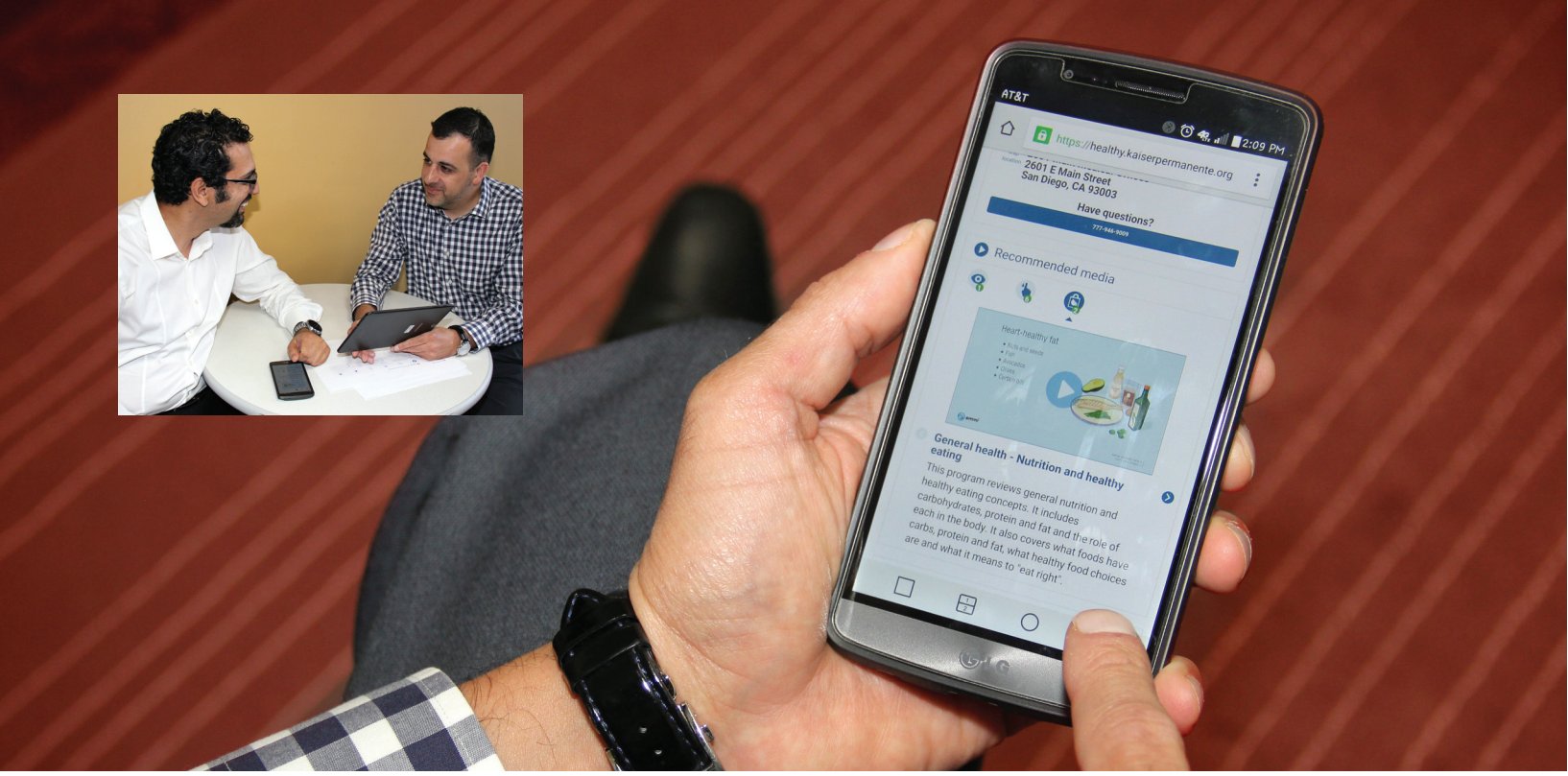
"If this vaccine proves efficacious," he said, "it can help reduce the risk by making sure a patient is immune before entering the hospital."

While this trial focuses on a potential means to prevent hospital-acquired infection, other KPSC studies provide additional perspectives. One study suggests that the community may also play a key role in transmission of *C. diff* and emphasizes the importance of testing for it in outpatient settings. Several others look at the appropriate prescription and use of antibiotics.



As a large integrated health care system, Kaiser Permanente brings a real-world environment to the Cdiffense vaccine study. The large and diverse patient population and vast electronic health record provide an opportunity to help improve patient care at Kaiser Permanente—and beyond.

The potential of the Cdiffense study is promising. Dr. Nomura adds, "offering a vaccine like this, which protects patients from a dangerous infection in high-risk settings, is a great way to practice smarter medicine."



Online Personal Action Plan

A smarter way to engage patients in prevention

What if each of us had a personal reminder system that told us when we needed to get preventive care? Would we do a better job of caring for our own health?

Staff from Kaiser Permanente Southern California's Regional Complete Care team, which manages a collection of centralized programs to address patient health needs, thought this was an intriguing possibility.

About 6 years ago, the team decided to test the idea with a small-scale pilot. Staff distributed a wellness journal to women at Kaiser Permanente's South Bay Medical Center. The compact booklet provided a checklist of common preventive care recommendations. Women could use the list to manage their own health.

It was a good concept, but the paper-based format wasn't scalable. The booklets were expensive to produce and were outdated almost as soon as they were printed.

In April 2012, the team began working on an online version. By November 2012, the new tool was up and running.

Above (inset photo): Wahid Wakach, Andre Ahuja

Next page: Dr. Ernest Shen, Dr. Shayna Henry

The online Personal Action Plan, or oPAP, provides personalized information about gaps in preventive health care, such as overdue screenings or tests. It also points members to health education resources, such as smoking cessation or weight management programs.

"The online plan gives patients and caregivers very simple information about individual care needs," said Andre Ahuja, MSc, assistant director for the Complete Care Support Programs. "It empowers users by informing them what they need to stay healthy and provides easy ways to close those gaps."

A rigorous approach to program evaluation

In 2014, regional leadership asked the Division of Health Services Research & Implementation Science from the Department of Research & Evaluation to evaluate the effectiveness of the program.

"The costs of implementing oPAP were relatively low compared to other interventions to encourage members to take care of health care tasks," said Shayna Henry, PhD, a post-doctoral research fellow. "Leadership felt it was important to evaluate the program to learn more about how it worked."

The online Personal Action Plan, or oPAP, provides personalized information about gaps in preventive health care, such as overdue screenings or tests. Research has demonstrated that people who used oPAP closed care gaps at a higher rate than those who did not use it.

There were a few challenges in bringing the rigor of research to the evaluation process. Quality of data posed the first challenge. As is often the case, data pulled from our electronic health record, Kaiser Permanente HealthConnect, were organized differently than typical research data.

Researchers also faced a statistical modeling challenge. "We used something called propensity score weighting," said Ernest Shen, PhD, the lead biostatistician scientist for the Division of Health Services Research & Implementation Science. "That essentially creates a super-population where you have a more balanced distribution and more fair comparisons can be made."

Positive results reinforce value of oPAP

The final evaluation showed that people who used oPAP closed care gaps at a higher rate than those who didn't use it. This was especially true for cancer screenings. Members who used the online tool were:

- 9% more likely to receive a mammogram.
- 9% more likely to be screened for colorectal cancer.
- 6% more likely to receive a Pap test.
- 12% more likely to schedule and complete routine blood sugar (HbA1c) tests.

Somewhat to the research team's surprise, however, there was not a strong association between oPAP use and vaccine uptake.

"One factor may have been timing," said Dr. Henry. "The study period was from late winter forward. For the flu vaccine especially, we may have missed the initial wave of people who got their shots in the fall."

Evidence supports program expansion

Positive results from the study, published in the *American Journal of Preventive Medicine* in January 2016, helped propel the online Personal Action Program forward.

"The results really reinforced that we're on the right track," said Ahuja. "The study helped us focus in on areas where we know we can make a bigger difference."



The oPAP platform has expanded well beyond the initial collection of care gaps, which were mainly geared toward adult primary care. Newer modules support pediatric and obstetric care needs. Members can now access oPAP on a mobile- and tablet-friendly user interface.

In 2015, the team introduced a new module, which provides personalized tools to patients waiting for kidney transplants. By 2016, the team rolled out another new module for patients with complex care needs: men with prostate cancer.

"We really like to challenge the norm," said Ahuja. "We like to do things that haven't been tried before."

That commitment to innovation has earned accolades for the program. In 2015, oPAP received Kaiser Permanente's James A. Vohs Award for Quality.

"The future of the online Personal Action Plan is very exciting," said Michael Kanter, MD, regional medical director of Quality and Clinical Analysis, Southern California Permanente Medical Group, who has been a champion for the program since its inception. "Knowing that we have evidence behind the program—that's smarter medicine."



Eye Monitoring Center

Innovation leads to smarter screening

"For patients with diabetic retinopathy, the center is very meaningful because they will get a more accurate screening result and more immediate care for their retinal disease."

— Michael Kanter, MD

In a dark cubicle in the basement of the Kaiser Permanente Baldwin Park Medical Center, 4 round orange circles flash onto Mohini Sharma's computer screen. A certified ophthalmic assistant at the Eye Monitoring Center, she closely studies each one, following the branches within the orbs, noting the splotches, the dots. After a few minutes, she counts the number of hemorrhages in the image, which is a photo of the back of a patient's eye: mild retinopathy.

She moves on to the next image. Each day Sharma provides results on the eyes of 120 or more patients. Before 2010, medical assistants in the medical offices took the photos, and ophthalmologists and optometrists provided the results. After the Eye Monitoring Center was established, medical assistants continued to take the photos, but the certified ophthalmic assistants, like Sharma, provided the results.

Since the program was implemented throughout Kaiser Permanente Southern California in 2012, the proportion of patients detected with diabetic retinopathy increased from about 10% to about 25%. In 2015, the center screened 136,000 patient images.

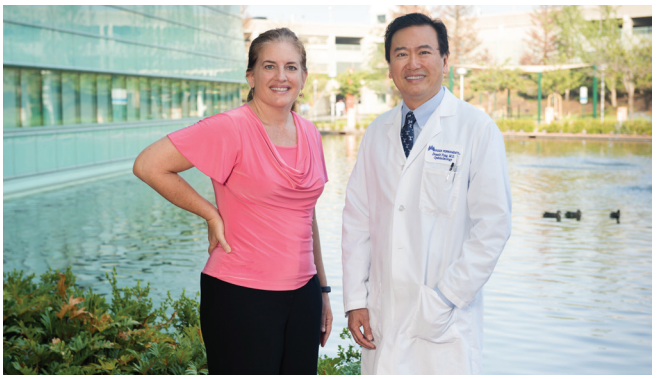
An innovation born of research

The move from individual doctors reading the images to a team of centralized technicians was an idea born of research and demonstrated by research. Today, it is fueling new research.

"We took an idea that's very common in clinical trials research—standardizing evaluation—and operationalized it," said Donald Fong, MD, MPH, the regional retinal lead for KPSC. "And we operationalized it on a very big scale."

Research scientist Sharon M. Hudson, PhD, MA, led a 2015 evaluation of the new model for reading diabetic retinopathy screenings. Rather than having ophthalmologists and optometrists reading results in different offices, certified ophthalmic assistants looked at them in a centralized reading center. The study found that the new model increased the accuracy of the screening results, improved the quality of the screenings, and eliminated unnecessary follow-up visits. The study was published in *OSLI Retina*.

As a result, the Eye Monitoring Center won several awards including 2015 eValue8 Innovations Award



from the National Business Coalition on Health. It also received the 2015 David M. Lawrence Patient Safety Award, which recognizes projects that improve the safety of care for patients and accelerate the rate and scope of patient safety improvements at Kaiser Permanente.

Michael Kanter, MD, the regional medical director of Quality and Clinical Analysis, SCPMG, said the Eye Monitoring Center is "a great example" of how Kaiser Permanente can reduce the diagnostic error rate on a large scale.

"For patients with diabetic retinopathy, the center is very meaningful because they will get a more accurate screening result and more immediate care for their retinal disease," Dr. Kanter said. "And for everyone else, it is laying a structural foundation that allows us to methodically study and address other diseases using a similar model of care.

"It's part of creating a learning health system."

In her research, Dr. Hudson found that centralizing the reading of retinopathy images:

- gave physicians more time for patients who needed to see them,
- allowed specially trained technicians to provide more consistent and accurate results,
- allowed photographers to get feedback that improved their images, and most important,
- increased the accuracy of the reports, meaning more patients with diabetes learn if they have retinopathy, and receive appropriate education and treatment.

Previous page: Elena Padilla

Above: Dr. Sharon Hudson, Dr. Donald Fong



"This project—our research—helps save people's vision," said Dr. Hudson. "That is why I do research here: The research we do today can change lives tomorrow."

Diabetic retinopathy can cause blindness

Diabetic retinopathy is the leading cause of blindness among adults in the United States. More than 4 million people—about 28.5% of all people with diabetes—have diabetic retinopathy. Patients with diabetes have regular screenings for diabetic retinopathy to detect it or prevent its progression.

The condition is detected by taking a photo of the inside of the eye and looking for signs of bleeding or other abnormalities. For accurate detection, it is necessary for the person taking the image to get a good photo, and for highly trained people to apply consistent criteria when looking at those photos.

The research showed that, before implementing the centralized reading center, early or mild cases of retinopathy were being missed. Now, when those patients are spotted, they are scheduled to be rescreened in 1 year instead of 2.

The idea to take retinopathy reading from the physician offices to a centralized center started after Dr. Kanter saw that KPSC's frequency of retinopathy diagnosis was less than half the national average. At the same time, Dr. Fong became aware of the big differences in retinopathy rates at different KPSC medical centers. He went to Dr. Kanter to discuss possible solutions.

Above: Cecilia Villarreal, Mohini Sharma, Lupe Cisneros

Next page: Dr. Kristi Reynolds, Dr. Corinna Koebnick

Dr. Fong realized that the best way to detect diabetic retinopathy would be something used in clinical trials research: a centralized location with trained people to ensure consistency and quality.

So in 2010, the Eye Monitoring Center started with just Dr. Fong and a certified ophthalmic technician reading images from pilot medical centers.

It seemed to have a positive impact very quickly. But unless quality improvements are rigorously evaluated, no one can really know for certain. "So we can't say it works unless we demonstrate it with research," Dr. Hudson said. "Research is critical to determining what makes smarter medicine."

Evaluating success with research

The research showed that the results were impressive.

"The variation in retinopathy rates between medical centers used to be huge. The medical center with the highest rate had 6 times that of the lowest medical center," Dr. Fong said. "We've slashed that difference by 75%."

Dr. Fong oversees 13 staff members. Six certified ophthalmic assistants focus on reading images for diabetic retinopathy. Three look at other eye issues, such as glaucoma and age-related macular degeneration. The staff also includes a clerk and an administrative assistant. The Eye Monitoring Center has grown to handle retinopathy screenings from all the 13 KPSC medical centers, a few community clinics, and in 2016, the Kaiser Permanente Georgia Region.

"Technology allows us to view most images as soon as they are saved," said Cecilia Villarreal, a certified ophthalmic asssistant and the project manager at the Eye Monitoring Center. "Patients in Georgia went from waiting 2 to 4 weeks for their results to getting them the same day or the next day."

The technicians who provide retinopathy screening results sit on one side of the office that is kept dark so they can see the images on their computer screen clearly. The other side of the office is lit normally for technicians examining different kinds of images for glaucoma and age-related macular degeneration.

Improving lives now, fueling new research

Dr. Fong's desk, adorned with pictures of his children, is on the light side of the room. When he looks around he sees not only everything the center has accomplished in a few short years, but all the ways that research can fuel new improvements in the future. He and Dr. Hudson have discussed projects ranging from increasing the already high proportion of Kaiser Permanente members with diabetes who get their required eye checks in a timely manner, to automating the reading of the images for even more standardization.

On the dark side of the room, Sharma continues to scan one eye after another.

"It's an interesting and challenging job," said Sharma. "And, what I like most is I that learn something new every day."

When she finds something that looks different, such as a retinal detachment, she calls in Dr. Fong or another ophthalmologist. The doctor or technician calls the medical center and makes sure the patient gets an ophthalmology appointment as soon as possible.

Sharma was studying images one day in 2015 when she found a large mass.

"I showed it to Dr. Fong," she said. "It turned out to be a malignant tumor. The doctors had to remove the eye, but we saved that patient's life."



Smarter screening for hypertension

The Centers for Disease Control and Prevention estimates that only half of the 67 million Americans with high blood pressure have their condition under control. Hypertension often has no warning signs, and often is missed in patients who do not see their primary care physician on a regular basis. Kaiser Permanente Southern California researchers studied the impact of expanding blood pressure screenings to patients outside of the primary care setting.

"The idea is to catch high blood pressure during patient visits in specialty care settings such as ophthalmology or urology," said research scientist Corinna Koebnick, PhD, MSc. Dr. Koebnick was senior author of a study published in *The Journal of Clinical Hypertension* in 2015. "Our findings indicate that if we can identify, treat, and control high blood pressure sooner, we can greatly reduce the number of cardiovascular events. That is smarter medicine."

In a related study led by the Department of Research & Evaluation, researchers followed new mothers during their first year after delivery. The study, published in the *Journal of Hypertension*, found that women who had a hypertensive disorder during pregnancy were more than twice as likely to develop pre-hypertension or hypertension in the year after their babies were born.

"Our study suggests there is a subset of women who develop hypertension in pregnancy and present with elevated blood pressure in the first year after delivery—despite being otherwise healthy before pregnancy," said lead author and researcher Mary Helen Black, PhD, MS.

Associate Director of Epidemiologic Research Kristi Reynolds, PhD, MPH, the study's senior author, said these patients are also more likely to have their hypertension go undiagnosed because many do not visit their primary care providers regularly.

"Getting women back into the clinic for self-care after they have babies is a challenge," said Dr. Reynolds. "When all of your time and energy is focused on your new baby, you may not be thinking about getting your blood pressure checked."



Lung nodule surveillance

A pragmatic trial to find a smarter strategy

Michael Gould, MD, MS, recalls his early career, reviewing dozens of chest CT scans with his colleagues—fellow pulmonologists—during monthly tumor board meetings.

Many of the images contained a shadowy spot in the lungs. Those spots often revealed a lung nodule—a potentially cancerous growth.

If caught at its earliest stage, lung cancer can be cured surgically. But many of the nodules Dr. Gould saw had progressed beyond that point.

"It seemed wrong to me that we were seeing so many nodules at that stage," said Dr. Gould, who is now the director of Health Services Research & Implementation Science at Kaiser Permanente Southern California. "I thought there had to be a smarter way."

The quest to find a better way to identify potentially cancerous nodules prompted Dr. Gould to shift from a clinical career to a research path. Ultimately, it led him to Kaiser Permanente.

Inquiry draws allies to the quest

Soon after joining Kaiser Permanente, Dr. Gould met George Yuen, MD, now chief of pulmonology for the Southern California Region and Orange County.

Dr. Gould was pursuing a study about shared decision making, which encourages patients and clinicians to make health decisions together.

"First, we make sure you as a patient understand the issues," said Dr. Yuen. "Then we work together to make a decision that aligns with your values."

Decisions about lung nodules are complex. About 3 to 5 lung nodules out of 100 prove to be cancerous. Biopsies can definitively identify lung cancer. But they are invasive and introduce different risks.

"When I talk to a patient, I tell them we see a lot of lung nodules, and the vast majority are innocent," said Dr. Yuen. "People often worry about cancer. We talk about their individual risk factors and their values, and together make a decision about what to do."

Above: Dr. George Yuen, Leslie Barcelon (from behind)

Next page, clockwise from top left: Fernando Barreda, Dr. Michael Gould, Cynthia Bishop, Danielle Altman

Decisions about lung nodules are complex. About 3 to 5 lung nodules out of 100 prove to be cancerous. Biopsies can definitively identify lung cancer. But they are invasive and introduce different risks. A new pragmatic trial will evaluate different strategies for monitoring lung nodules.

Many patients and physicians opt to monitor lung nodules using CT scans. Radiologists examine the size, shape, and density of the nodules. They also consider individual health risks, such as a history of smoking.

"We have pretty good criteria to sift out which spots are benign," said Anne Kosco, MD, chief of radiology at the Kaiser Permanente Los Angeles Medical Center. "If we can't call a spot benign, we have to monitor it."

The question: how much is enough?

How often nodules should be monitored remains an open question.

Scanning patients too frequently may cause them to worry. It increases the likelihood of unnecessary biopsies or other procedures. More-frequent scans also expose patients to more radiation. On the other hand, if a patient doesn't come in often enough, a nodule could grow and become a major problem.

Existing guidelines provide recommendations on how often patients should be scanned. But the guidelines rely on expert consensus rather than empirical evidence.

"There are different systems out there for follow-up, but none have evidence behind them," said Dr. Kosco.

Funding opportunity provides path forward

In 2014, the Patient-Centered Outcomes Research Institute (PCORI) named 14 research priorities. One of them was how to evaluate patients with nodules that might be cancer.

"When the PCORI opportunity came up, I was working on another grant. I put it aside," said Dr. Gould. "This is the study I've prepared for my entire life without knowing it."

Dr. Gould worked with colleagues to develop a proposal for a pragmatic trial to evaluate different approaches to monitoring lung nodules. PCORI funded the study in 2015.

"A pragmatic trial seeks to answer questions in real practice settings, rather than the controlled environment of a classic randomized trial," said Dr. Gould. "By embedding this in clinical practice, we can make the study more efficient without compromising validity."



A pragmatic approach to gathering evidence

The 5-year study will compare outcomes from 2 different strategies for monitoring lung nodules. One uses more-frequent scans to follow patients. The other uses less. The study will begin enrollment in the fall of 2016.

Across the country, 14 health care organizations are participating, including Kaiser Permanente's Colorado and Northwest regions. Researchers will compare a range of outcomes for the 2 strategies, including:

- Percentage of lung cancers that have grown to more than 2 centimeters.
- Time to diagnosis and treatment.
- Cancer survival rates.
- Patient perceptions and experiences.
- Adherence to 1 of the 2 recommended strategies.

Findings from the study will provide much-needed guidance for pulmonologists, radiologists, and patients.

"If a less-frequent schedule has similar outcomes, I would change my recommendations to decrease the number of scans," said Dr. Yuen. "If, on the other hand, we see an increase in higher-stage cancers with less-frequent scanning, I would stay with more-frequent scanning."

"This study will help us find the sweet spot for the right frequency of scans," said Dr. Kosco. "Knowing what is optimal will help us practice smarter medicine."



Surgical outcomes research

A playbook for smarter surgical care

"When a technology is new, the entire playbook is not yet written. Research helps us understand the smartest way forward, so we can achieve better outcomes."

— Ron Loo, MD

Across Southern California, Permanente physicians use research findings to drive improvements in the quality of surgical care. Strategies range from a rigorous evaluation of new technologies to registry-based research and network-funded clinical trials.

Rollout of robotic surgery

In 2000, the U.S. Food and Drug Administration approved the robotic da Vinci Surgical System for minimally invasive surgeries. A decade later, surgical robots were assisting more than 3 out of 4 prostatectomies in the United States.

At first, little evidence showed robotic surgery offered better outcomes. Kaiser Permanente Southern California initially held a conservative stance. As data began to emerge, however, the region moved ahead. The first robot arrived at the Kaiser Permanente West Los Angeles Medical Center in 2008.

"For very specific procedures, robotic surgery was shown to improve short-term outcomes," said Kirk Tamaddon, MD, director of KPSC's Robotic Program. "We got started with robot-assisted radical prostatectomy."

Research guides program development

New questions emerged. Which other procedures might be a good match for robotic surgery? How should new surgeons be trained?

"When a technology is new, the entire playbook is not yet written," said Ron Loo, MD, regional coordinating chief of urology for KPSC. "Research helps us understand the smartest way forward, so we can achieve better outcomes."

Each procedure undergoes a rigorous approval process. Part of that process is obtaining Institutional Review Board approval to collect data on new procedures.

Previous page: Dr. Ron Loo, Dr. Shawn Menefee, Dr. Kirk Tamaddon

Above: Dr. Gary Chien, Teresa Harrison, Jeff Slezak



"We gather outcomes data for every procedure at both the patient and individual surgeon level," said Dr. Loo. "We use every method available to us, including our electronic medical record, data from our clinical analysis group, and patient-reported outcomes."

The program has gradually expanded to other medical centers and other specialties—including general surgery, gynecology, and thoracic surgery—all informed by this rigorous evaluation process.

The game-changing play: quality of life

Prostate cancer is the second most common cancer among American men, but causes only 2 to 3% of cancer deaths.

"Because the survival rate for prostate cancer is very high, quality of life is very important to our patients," said Gary Chien, MD, program director for the Urology Residency Program at the Los Angeles Medical Center. "Urinary control, sexual function, and recovery become as important as cancer control."

Dr. Chien is the principal investigator for a study that seeks to understand how different treatments for prostate cancer—including robotic surgery—affect quality of life.

"Right now, quality of life is one of the least-studied aspects of medicine," said Dr. Chien. "Knowing how treatment choices influence quality of life will help us practice smarter medicine."



Joint Replacement Registry

Each year, more than a million Americans undergo knee or hip replacement surgery. Patients and surgeons navigate a multitude of choices about implant types and surgical procedures.

Research based on Kaiser Permanente's National Joint Replacement Registry provides much-needed evidence to guide those choices. The registry includes more than 160,000 cases.

"We conduct comparative effectiveness studies to identify the best types of products and procedures for our patients," said Liz Paxton, MA, director of Surgical Outcomes and Analysis, who oversees the Joint Replacement Registry and 7 other implant registries. "We translate what we learn into quality improvement tools."

Requests spark practical research ideas

Orthopedic surgeon Dhiren Sheth, MD, wanted to compare outcomes of hip replacement techniques. Newer techniques approach the joint from the front or the side of the hip rather than from the back of the hip.

"A lot of patients wanted me to do the surgery from the front," said Dr. Sheth, who practices at Kaiser Permanente Orange County. "They've heard recovery is easier—they can bend forward, cross their legs, or sit in a low chair."

Dr. Sheth teamed up with Robert Namba, MD, an attending surgeon for the Department of Orthopedic Surgery at Kaiser Permanente Orange County and one of the founders of the Joint Replacement Registry. With the support of Kaiser Permanente's Surgical Outcomes and Analysis group, Dr. Sheth found the answer to his question.

"We found that there was a significant reduction in the risk of dislocation with approaches from the front," said Dr. Sheth. "We had an idea that might be the case, but it was good to validate from the registry that it was true."

High-priority questions fuel investigations

Reducing hospital readmissions is a top priority for Kaiser Permanente and other hospitals across the country. Medicare recently identified total hip replacements as an area targeted for improvement.

A study based on registry data found that 3.6% of Kaiser Permanente members had been readmitted to the hospital within 30 days of a total hip replacement. This rate was relatively low compared to studies based on data from other health care organizations, which have shown rates ranging from 4 to 11%.

The study identified a number of factors that increased the risk of readmission. Some of these could be addressed proactively, potentially resulting in better outcomes for patients.

"We saw that if these patients had pulmonary disease, they had an increased risk of being readmitted to the hospital," said Dr. Namba. "Knowing that, we can plan for it. We can coordinate with our internal medicine colleagues before, during, and after surgery to optimize that patient's care."

Above: Dr. Tadashi Funahashi, Liz Paxton, Dr. Robert Namba

Next page, top: Donna LaPorte, Dr. Robert Namba

Next page, below: Dr. Shawn Menefee

Smart tools drive practice changes

Recent questions about the benefits and safety of a common medication for osteoporosis—bisphosphonates—prompted a study about how the drug might influence outcomes for total hip replacements.

The study revealed a positive association for older patients with osteoporosis. Those patients were less likely to need a revision surgery if they were taking bisphosphonates.

"The relationship became stronger when bone quality was more impaired," said Monti Khatod, MD, an orthopedic surgeon at the West Los Angeles Medical Center. "On the other hand, patients with normal bone quality who had been on bisphosphonates had no improvement. In some cases, we actually saw an increased risk of fracture."

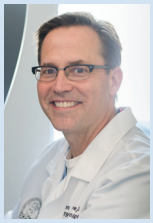
A new SmartSet in Kaiser Permanente HealthConnect makes use of those findings. Before surgery, the SmartSet prompts the surgeon to order bone density scans for patients who haven't already had them.



"The goal is to reverse risk factors in order to improve outcomes," said Dr. Khatod. "In this case, we built a tool right in our electronic health record, based on evidence from our own research. I think that's a great example of smarter medicine."

Q&A: Networks for smarter clinical trials

Kaiser Permanente participates in a number of research networks, ranging from cancer clinical trials to cardiovascular research studies. These collaborations bring together larger study populations and broaden areas of expertise.



Shawn A. Menefee, MD, a urogynecologist at Kaiser Permanente San Diego, has been site principal investigator for 2 National Institutes of Health research networks: the Urinary Incontinence Treatment Network and the Pelvic Floors Disorder Network.

Why are research networks important?

As part of an NIH network, you receive funding to stabilize your research infrastructure. You don't have to worry about funding, so you can focus on pertinent scientific questions. Also, the size and scale of the network enables us to enroll more patients, power studies appropriately, and have a bigger impact.

How do networks contribute to smarter medicine?

One of the UITN studies focused on a test called urodynamics. It is a common test before surgery for stress urinary incontinence. But there wasn't any evidence that the tests improved outcomes.

We evaluated whether performing the test changed the physician's choice of surgery or changed the outcome of the surgery. We found that it didn't.

Did the study influence practice here?

Yes. We did a follow-up study to look at Kaiser Permanente's ability to implement the findings. We found there was a significant decrease in the number of urodynamics tests performed in Southern California.

In essence, that's smarter medicine. First, finding out whether something improves care. Then, actually listening to the evidence. As a result, patients no longer have to undergo an hour of uncomfortable tests.

One of your current trials involves robotic surgery.

We're evaluating the benefit of using robotic surgery to perform sacrocolpopexy—a procedure to repair a pelvic prolapse. This procedure is a long one. Laproscopically, it takes 3 to 5 hours.

Our question is, can we can do it more quickly and safely, and just as effectively, with robotic surgery? We're also looking at the ergonomics of robotic versus laproscopic surgery. Can we prolong our surgeons' careers by making it better on their backs, shoulders, and necks?

One of the great things about our affiliations with networks is that we can access expertise from other institutions. For this study, we've brought in a computer science motion capture expert from UC San Diego to help us with the ergonomic assessment.

Does participating in research influence your practice?

Yes. Every day. When you treat your patients, you know that you are treating them based on the most up-to-date evidence or you are finding newer evidence.

I love being a physician. I love taking care of patients. And I think we can improve care for a greater number of women by participating in clinical research.



Caring for cancer survivors

Research leads to smarter medicine for those who survive cancer

"Kaiser Permanente is uniquely positioned to weigh the risks and benefits of different cancer treatments in the long term for a broad cross-section of society."

— Joanne Schottinger, MD

Decades ago, when people heard the word "cancer," it sounded like a death sentence. Today, that's not the case. Early detection, diagnosis, and treatment have improved. Not only do people survive, they survive in staggering numbers, and for a very, very long time.

The Department of Research & Evaluation advances cancer prevention and treatment, but also aims to improve life after cancer. "Attention needs to focus on how we help patients with cancer in the medium and long term," said Senior Director of Research Steven Jacobsen, MD, PhD, "because there is a medium and long term now."

Kaiser Permanente is uniquely positioned to weigh the risks and benefits of different cancer treatments in the long term for a broad cross-section of society, said Joanne Schottinger, MD, the clinical lead for cancer for Kaiser Permanente's Care Management Institute.

"We have a large, ethnically diverse population," she said, "and most of the patients stay with us for many, many years. So we can answer questions in ways many other health systems can't."

The resources to do the job right

Research scientist Reina Haque, PhD, MPH, began her research in breast cancer survivorship after reading a medical journal article in 2008. It assessed the interactions between breast cancer cells and medications in a laboratory setting. She realized that, with the rich clinical data available at Kaiser Permanente, she could do a better study that could generate more relevant information for clinicians.

"In order to be meaningful in a clinical setting, a study needs to be done with patient data, not molecular data," Dr. Haque said. "I knew that as Kaiser Permanente, we could look at it retrospectively. We could test these hypotheses with our comprehensive health records, which allow us to do large-scale epidemiologic studies."

In 2015, Dr. Haque led 2 studies that examined medications commonly taken by breast cancer survivors to prevent recurrence.



A study of more than 13,000 women found that the new generation of endocrine therapy for breast cancer—called aromatase inhibitors—was not associated with risk of the most serious cardiovascular events—cardiac ischemia or stroke. Cardiovascular disease is the leading cause of death among breast cancer survivors.

Another study, of almost 17,000 women, dispelled a concern that the beneficial effects of the anti-cancer drug tamoxifen could be lessened by taking it in combination with antidepressants. The study showed no statistical increase in breast cancer recurrence for women who take tamoxifen with an antidepressant, compared to those who take tamoxifen alone.

Lara Durna, MD, an oncologist with the Kaiser Permanente South Bay Medical Center, said that before Dr. Haque's study results were known, she counseled her patients that their anti-cancer drugs may not work as well if they were on certain antidepressants. "Some of the women were very, very stressed to go on tamoxifen and felt they were having to decide whether to disrupt their physical health or their emotional health," Dr. Durna said.

Most women chose to try new antidepressants rather than increase their risk of a recurrence of cancer.

Previous page: Sheila Butts

Above: Jacqueline Redeemer, Dr. Lara Durna, Dr. Reina Haque



"It was very reassuring for patients that they could remain stable on their antidepressants and fight their breast cancer," Dr. Durna said.

Dr. Haque said she considers Dr. Durna and her team not only stakeholders in her work, but collaborators in the direction of her research.

Partnership benefits young cancer survivors

Important discoveries for youthful cancer survivors were inspired by another scientific-clinical partnership: Robert M. Cooper, MD, the physician director of the cancer program at the Los Angeles Medical Center, heard scientist Chun Chao, PhD, MS, speak about her cancer research at a translational science conference hosted by the Department of Research & Evaluation in 2011.

They both recognized there was a gap in knowledge about teen and young adult cancer survivors and decided to collaborate.

"This population is very understudied," Dr. Chao said. "We have a very strong research program for pediatrics and for when the cancer occurs in people in their 60s, 70s, and 80s, when most people get their cancers."

Physicians can't extrapolate the findings from older patients because the young people's physiological state is different, and physicians can't extrapolate from what they know about children, because children haven't gone through the hormonal changes of puberty.

However, adolescents and young adults were a hard group to study. They changed insurance when they left their parents' homes, and they moved more frequently than the general population. Some got married and changed their names. Fortunately, KPSC has a very stable population of teens and young adults, with 77% retention after 5 years, far exceeding previous studies that tried to do follow-up contact with young cancer survivors.

It provided a perfect opportunity to learn more. The study included almost 6,000 adolescent and young adult cancer survivors.

"The good thing is that most of them survive," Dr. Chao said. "If you think about it, these people can gain the most by our work. They still have a full life ahead."

Dr. Chao worked with Dr. Cooper and others and determined that adolescent and young adult cancer survivors had twice the risk for developing cardiovascular disease when compared to those without cancer. And those who developed cardiovascular disease had 10 times the risk of dying than those who didn't.

Above: Dr. Robert Cooper, John Course

Next page, from left: Dr. Virginia Quinn, Alexander Carruth, Dr. Nirupa Ghai, Dr. Chun Chao

"It's important for cancer patients and survivors to receive the right care. They have already had a life-altering diagnosis of cancer. We want to do everything we can to help them achieve better health."

— Erin Hahn, PhD, MPH

Dr. Cooper said, "Now that we have done this work and shown what the issue is, we are actively sharing it with the community at large and determining ways to educate our clinicians and create a system that helps them systematically prevent cardiovascular disease in our cancer survivors."

Care for cancer survivors studied

A Kaiser Permanente Southern California adjunct investigator, Lauren Wallner, PhD, MPH, took the idea of cancer survivorship research from what happens to the survivors to what care they receive. She wanted to make sure cancer survivors received appropriate preventive care.

"The concerns stem from the idea that when a person is diagnosed with cancer, all the treatment is then focused on cancer," she explained.

She conducted 2 separate studies on preventive care before and after prostate cancer diagnosis. Dr. Schottinger, who is also regional assistant medical director for Quality and Clinical Analysis, was a co-author on the first study.

"If we are talking about cancer survivors, we can't lose sight of the fact that their cancer is not the only threat they face," Dr. Schottinger said. "The research we are doing about diabetes, cardiovascular disease—all that has an impact on their survival."

The first study looked at almost 17,000 men diagnosed with prostate cancer and found "overall we are doing a good job getting preventive services to them," Dr. Wallner said. "By and large, men are getting the care they need for other diseases of aging. It was great news."

A second study looked at the same population of patients 5 years before and 5 years after diagnosis. It found the quality of preventive care among men with prostate cancer improved after diagnosis. Also, they received comparable preventive care after diagnosis as men without prostate cancer.

"It seems like the diagnosis of cancer may be an opportunity to screen and manage these other conditions," Dr. Wallner said. "It's often discussed as a teachable moment as well: diet and exercise, smoking cessation. You address them at a time the men are motivated for change."



Cancer survivorship in a clinical setting

As a health services researcher and implementation scientist, Erin Hahn, PhD, MPH, takes the large studies that look at years of data for thousands of patients and translates them into the care setting.

"We are building off of these big epidemiological studies and taking that next step," she explained. "What can we do to help our members achieve better health during survivorship? How is our quality of care?"

Dr. Hahn's passion developed when she was a master's and doctoral student at UCLA, where she set up the university's first survivorship clinic. One of her first patients had survived head and neck cancer after having part of his jaw and neck removed. The surgeon's report indicated he was doing very well.

"We invited a psychologist to our visit, and she said the man was having suicidal thoughts," Dr. Hahn said. "The gulf between what the surgeon thought and what the patient thought had a huge impact on me."



After the visit, Dr. Hahn and her team helped the patient make appointments with a speech therapist and a mental health counselor. A year and a half later, he was healthy in body and mind. "The change was dramatic," she said.

Helping survivors choose wisely

Dr. Hahn brought that experience with her to Kaiser Permanente. In 2015 she published work that explored the best choices for caring for patients with cancer at KPSC and other health care organizations.

The study measured adherence to cancer care recommendations from the American Board of Internal Medicine's Choosing Wisely® campaign, which is dedicated to reducing the use of health care services that are of limited value to patients and their physicians.

Dr. Hahn found that overall use of non-recommended imaging, such as PET and CT scans, within Kaiser Permanente was low. About half of the tests ordered were an appropriate response to a patient's signs and symptoms. Another study found that non-recommended serum tumor maker tests were often used unnecessarily for surveillance of early stage breast cancer, which allowed Dr. Hahn to work with her clinician partners to address the issue.

The work has evolved into a series of forthcoming studies about clinician perceptions of Choosing Wisely guidelines, and the potential for a new model of survivorship care that centers on including a primary care physicians in the oncology clinic.

"It's important for cancer patients and survivors to receive the right care." Dr. Hahn said. "They have already had a life-altering diagnosis of cancer. We want to do everything we can to help them achieve better health."

Research that improves life after cancer

Dr. Jacobsen said that the studies led by Dr. Hahn, Dr. Wallner, Dr. Chao, and Dr. Haque are great examples of what can be done to improve patients' lives after a cancer diagnosis. "Treatment is important, but we need to deal with what happens afterward as well," he said.

At Kaiser Permanente, physicians work with scientists on research, and then researchers can provide physicians with information they need to practice smarter medicine. "The great thing about the organization is that it is the embodiment of a learning health care organization," Dr. Jacobsen said, "and it is an ideal setting for translating research findings into ideal care."

Above: Dr. Erin Hahn, Dr. Tania Tang

Next page: Dr. Edward Curry, Sandra Rubio (from behind)



Accomplishments & Milestones



Featured finding:

Gestational diabetes and autism risk

For several years, scientists have been studying the impact of gestational diabetes on a child's metabolism and obesity risk. Kaiser Permanente Southern California's Anny Xiang, PhD, MS, thought that if gestational diabetes could cause damage to the developing body, couldn't it also affect the brain? Couldn't behavior be an outcome? She decided it was worth trying to find out.

Her study, published in *JAMA* in 2015, found that gestational diabetes was associated with greater risk of autism in children. It made headlines around the world, with articles running in more than 50 news outlets, such as *USA Today, Time,* and CBS News.

There was much more nuance to the research than those headlines belied. The research found that children exposed to gestational diabetes by the 26th week of pregnancy had a 63% increased risk of being diagnosed with an autism spectrum disorder than children who were not exposed.

Children exposed to their mother's gestational diabetes after 26 weeks of pregnancy had no more risk than those whose mothers did not have preexisting diabetes or gestational diabetes.

"What we found was that timing was critically important when it came to the outcomes of gestational diabetes," said Dr. Xiang, who is the director of Biostatistics Research for the Kaiser Permanente Department of Research & Evaluation.

Dr. Xiang said Kaiser Permanente's integrated system and electronic health record gave her an advantage over other researchers in answering the challenging question.

Her team was able to examine the electronic health records of more than 322,000 ethnically diverse children born between 28 and 44 weeks at Kaiser Permanente Southern California medical centers between January 1995 and December 2009. Researchers followed the children through their health records for an average of 5.5 years.

Study co-author Edward S. Curry, MD, is a pediatric learning and behavior specialist at the Kaiser Permanente Fontana Medical Center. He has presented the research to colleagues in different forums, including a pediatric symposium and a grand rounds meeting in Fontana.

He said the findings have been "eye opening" for clinicians. It reinforces the message that early prenatal care is critically important.

"The key point is the fetus brain develops early in the pregnancy, so any insult early on can have an impact," Dr. Curry said. "It's like a growing tree. When you cut off a branch early on, it has more impact than after the tree is more fully grown."

Dr. Xiang said her future work may explore other potential behavioral outcomes of gestational diabetes, such as attention deficit hyperactivity disorder.



Above left: Jennifer Leung, Dr. Edward Curry

Bottom right: Dr. Xinhui Wang, Dr. Anny Xiang, Mayra Martinez

Selected findings

In 2015, Kaiser Permanente Southern California scientists and clinician researchers made important findings in a variety of research areas. The following is a small sample of some of these discoveries.

Allergy and Asthma

Compliance with a new HEDIS® (Healthcare Effectiveness Data and Information Set) asthma quality-of-care measure was not associated with improved asthma outcomes in terms of rescue inhaler dispensing or asthma-coded hospitalizations or emergency department visits.

Crans Yoon A et al. *J Allergy Clin Immunol Pract.* 2015;3(4):547-552.

Catastrophic wildfires lead to worsening asthma outcomes, particularly in children who are obese.

Tse K, et al. *Ann Allergy Asthma Immunol.* 2015;114(4): 308-311.e4.

Cancer

There was no difference in overall cancer risk for women who took only the diabetes drug metformin compared to women who took other anti-diabetic medications.

Soffer D et al. *BMJ Open Diabetes Res Care.* 2015;3(1):e000049.

Diabetes

The variation in the gene *PPARG* contributed to declining insulin sensitivity and deterioration in β-cell function, which is responsible for storing and releasing the hormone insulin, in Mexican Americans at risk for type 2 diabetes.

Black MH et al. *J Clin Endocrinol Metab.* 2015:jc20143246.

Digestive System Disorders

Simvastatin is associated with reduced risk of acute pancreatitis after accounting for additional risk factors such as gallstone disorders, smoking, and alcohol.

Wu BU et al. *Gut.* 2015;64(1):133-138.

Health Services Research

Among adults with acute sinusitis, CT imaging was infrequent but antibiotic treatment was common, even for patients who were highly unlikely to benefit.

Sharp AL et al. *Am J Manag Care.* 2015;21(7):479-485.

HIV/AIDS

The successful medication adherence threshold for HIV-positive patients taking older antiretroviral regimens has been 95%. But an 80 to 90% medication possession ratio appears sufficient to maintain virologic suppression in patients treated with 3 antiretroviral regimen types.

Gordon LL et al. *AIDS Patient Care STDS.* 2015;29(7): 384-388.

Regardless of biological sex, HIV and hepatitis C co-infection was associated with 40% higher mortality compared with HIV mono-infection.

Marcus JL et al. *AIDS Patient Care STDS.* 2015;29(7): 370-378.

Hospital Research

Patients' perceptions of nurse communications improved when human-centered principles—creating shared understanding of the need for change, minimum specifications, and customization by frontline staff—were applied to implementing new ways of doing nursing shift changes.

Lin M et al. *Jt Comm J Qual Patient Saf.* 2015;41(7):303-305.

Participation in pulmonary rehabilitation for chronic obstructive pulmonary disease (COPD) is associated with reductions in hospitalizations.

Nguyen HQ et al. *J Cardiopulm Rehabil Prev.* 2015;35(5): 356-366.

Health Informatics

KPSC Creatinine SureNet, a patient safety program to ensure that abnormal creatinine blood tests were followed up with additional tests, captured more than 12,000 patients who may have otherwise fallen through the care gap. Of those, more than 3,500 were newly diagnosed with chronic kidney disease.

Sim JJ et al. *Am J Med.* 2015;128(11):1204-1211.e1.

Men's Health

Nine in 10 men who developed moderate or severe lower urinary tract symptoms, such as uncontrollable urges to urinate, did not receive treatment.

Wallner LP et al. *BJU Int.* 2015;115(1):127-133.

Obesity

There was a small but significant decline in the percentage of young people in Southern California who were overweight and obese between 2008 and 2013. The decline was seen across all ages, races and ethnicities, but was less pronounced in girls, adolescents, and Hispanic and black children.

Koebnick C et al. *J Pediatr.* 2015;167(6):1264-1271.e2.

For a full list of 2015 publications, please see the bibliography starting on page 58.



Featured grant:

Preventing gaps in care

Chances are, most of us will experience a medical diagnostic error at some point in our lives, according to a 2015 Institute of Medicine report. That's disturbing news to patients and health care providers alike.

Kaiser Permanente is working to change that. The Southern California Permanente Medical Group has made reducing diagnostic errors a top clinical priority. Reducing the occurrence of care gaps, such as overdue tests or lack of follow-up, is one way to prevent diagnostic errors.

A new grant, funded by the Agency for Healthcare Research & Quality (AHRQ), will shed light on the incidence and risk factors for 3 types of care gaps: diagnostic, treatment, and preventive.

"The idea is to use each of these as an exemplar. We can learn about the specific gaps and also take away more general lessons," said Kim Danforth, ScD, MPH, principal investigator for the study.

The examples include:

- Diagnostic: Delayed diagnosis of kidney disease.
- Treatment: Potentially harmful medication interactions among patients with a history of falls.
- Preventive: Lack of annual monitoring for patients on 2 common drugs used to manage high blood pressure—angiotensin converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs).

Above: Corrine Muñoz-Plaza, Ellen Rippberger (from behind)

Focus on outpatient care

Much of the literature on patient safety focuses on hospital care. For the AHRQ grant, researchers deliberately chose to focus on outpatient safety.

"More than 98% of interactions with patients occur in outpatient settings," said Michael Kanter, MD, regional medical director of Quality and Clinical Analysis, SCPMG, and a co-investigator on the study. "We think it is important to do as much as we can to promote patient safety across all care settings."

Kaiser Permanente Southern California already uses electronic clinical surveillance tools to catch potential errors through its SureNet program.

"SureNet is a very innovative program. It scans electronic health record data routinely and flags potential issues that may need follow up," said Dr. Danforth. "It is meant to be a back up system—it's a second chance to catch errors before they cause harm."

Opportunities to prevent care gaps

Findings from the study may help Kaiser Permanente quality leaders develop interventions that prevent care gaps from occurring in the first place.

Researchers will interview physicians, pharmacists, and patients to gain insights into causes of care gaps and possible interventions.

"Ultimately, we want to make it easier for everyone—our physicians, our staff, and our patients—to do the right thing," said Dr. Kanter. "We plan to use what we learn to enhance our systems and find smarter ways to prevent care gaps."

Other Kaiser Permanente co-investigators include Erin Hahn, PhD, MPH, and Brian Mittman, PhD. Hardeep Singh, MD, MPH, from the Baylor College of Medicine is also a co-investigator.

Researchers will work closely with the SureNet program team, which is led by Kristen Andrews. Clinical collaborators include Mark Rutkowski, MD; John Sim, MD; Eric (Anthony) Lee, MD; Jeffrey Brettler, MD; and Joel Handler, MD.

Selected grants

External funding provides significant support for the Kaiser Permanente Southern California research program. Here is a small sample of federally funded grants awarded in 2015.

Bariatric Surgery

The National Institute of Diabetes and Digestive and Kidney Diseases awarded 2 Research Project Grants (R01s) to Kaiser Permanente Southern California to investigate how bariatric surgery can benefit people who are severely obese.

The BELONG (Bariatric Experience Long Term) study will determine how the most frequently used bariatric procedures—bypass and gastric sleeve—can be used to benefit people who are severely obese.

Bariatric surgery is the most promising treatment for weight loss for people who are severely obese. Weight loss among people who have the surgery, however, varies significantly and some patients have significant social and psychological changes as a result of the surgery.

This study is designed to fully understand KPSC bariatric patients' experience with weight loss up to 3 years after surgery. This will be done with patient surveys, focus groups, and interviews.

Karen J. Coleman, PhD, MS, is the principal investigator. Co-investigators from Kaiser Permanente Southern California include Cecelia Crawford, DNP, RN; Sameer Murali, MD; and Deborah Rohm Young, PhD, MBA.

The DURABLE (Duration of Bariatric Long Term Effects) study will compare outcomes of 2 groups of patients who are severely obese: those who have had weight loss surgery and those who have not.

Researchers will examine long-term outcomes (5 years or more after surgery), such as improvements in body weight, diabetes, hypertension, and renal disease.

Results of the study will help physicians and patients more accurately assess the long-term risks and benefits of bariatric surgery.

Dr. Coleman and David Arterburn, MD, MPH, from Group Health Research Institute are the principal investigators for this study. Stephen Derose, MD, MSHS, is a co-investigator.

Benjamin Kim, MD, Edward Mun, MD, and Peter Fedorka, MD, are bariatric surgeon advisors on both studies.

Prostate Cancer

The National Cancer Institute awarded a Research Project Grant (R01) to Kaiser Permanente Southern California for a study that will help distinguish between slow-moving and aggressive prostate cancer. Findings may spare many men from unneeded treatments.

Current risk-prediction tools do not distinguish well between slow-moving and aggressive cancers. Uncertainty about whether a cancer is aggressive or not makes treatment decisions more difficult.

Researchers at Kaiser Permanente Southern California will develop predictive algorithms that will assist clinicians in making treatment recommendations.

Chun Chao, PhD, MS, is the principal investigator. Co-investigators include Mary Helen Black, PhD, MS; and Gary Chien, MD.

Vaccine Research

The Centers for Disease Control and Prevention has awarded a grant to Kaiser Permanente Southern California to evaluate the use of Natural Language Processing, or NLP, as part of the Vaccine Safety Datalink project.

The Vaccine Safety Datalink is a collaborative project between the CDC and several health organizations. Together, they monitor and evaluate the safety of vaccines.

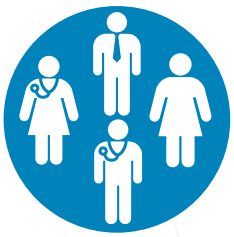
NLP can extract useful information from unstructured text in electronic medical records. This study will evaluate how accurate it is in identifying certain medical conditions. If sufficiently accurate, NLP may offer a cost-effective alternative to manual chart review.

Steven Jacobsen, MD, PhD, is the principal investigator. Chengyi Zheng, PhD, MS, is co-principal investigator.

Research program overview

Department of Research & Evaluation

The Department of Research & Evaluation focuses on conducting research with real-world implications and translating findings into practice. We are expanding and building scientific expertise in new areas including health services research and implementation science. This helps Kaiser Permanente determine how to provide better care for our members and communities, as well as bridge the gap between research and practice.



Our team

Research scientists	35
Clinical trials investigators	60+
Associate investigators	8
Post-doctoral research fellows	5
Support staff	330



Our top research areas

- Cancer
- Cardiovascular disease
- Diabetes
- Health services research & implementation science
- Obesity
- Vaccine safety & effectiveness
- Maternal & infant health



414 scholarly publications

Kaiser Permanente Southern California

As an integrated health care system—encompassing medical group, medical facilities, and health plan—Kaiser Permanente Southern California provides an ideal environment for population-based epidemiologic, clinical, and health services research.

Facilities and infrastructure

Our hospitals, medical offices, labs, and pharmacies are all linked by an information infrastructure that supports both clinical practice and business needs. Health information, especially from our vast electronic health record, can be leveraged for research that helps us answer questions about the care we deliver. It can also provide a means to support changes in practice based on what we learn through research.



Facilities

Medical centers	14
Medical offices	217



Physicians and employees

Physicians	6,600+
Nurses	23,000+
Employees	67,000+

Southern California membership (as of January 2016)

Members	4.1 million
Ethnicities represented	260+
Languages spoken	118

Nearly 90% stay with Kaiser Permanente after 1 year.
More than 75% remain with Kaiser Permanente after 3 years.
70% remain with Kaiser Permanente after 5 years.



Sex

Female	51%
Male	49%

Age

≤19 years	25%
20–44	34%
45–64	27%
65+	14%

Race

Hispanic or Latino	43%
White	35%
Asian/Pacific-Islander	11%
Black or African-American	9%
Other	2%

Funding overview

Funding for research has increased rapidly in the past decade to support a growing portfolio of innovative and clinically relevant research.

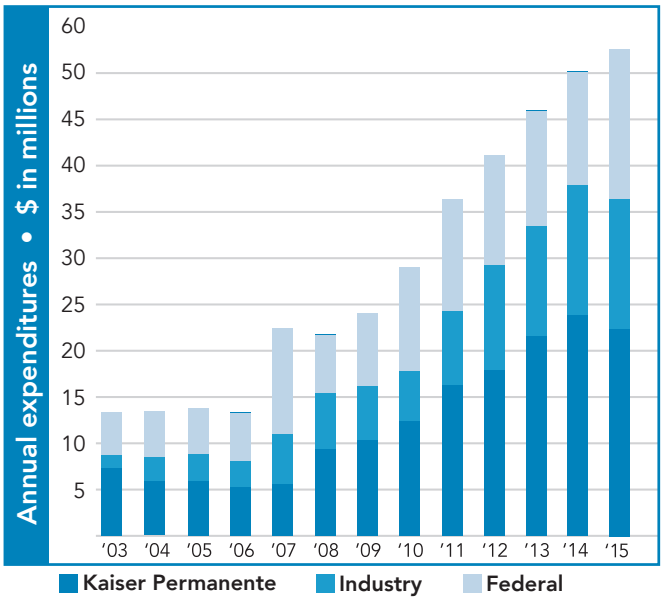
Total research expenditures:

$54.5 million in 2015 (up from $50.4 million in 2014)

Federal grants: more than $18.6 million

Industry contracts: nearly $13.5 million

Kaiser Permanente provided the remaining funds. Internal funding sources included the Kaiser Permanente Community Benefit program, the Southern California Permanente Medical Group, the Sidney R. Garfield Memorial Fund, and the Center for Effectiveness & Safety Research.



2015 grants and awards

New grants and contracts awarded in 2015 will fund research at Kaiser Permanente Southern California over a period of years.

2015 grant submissions

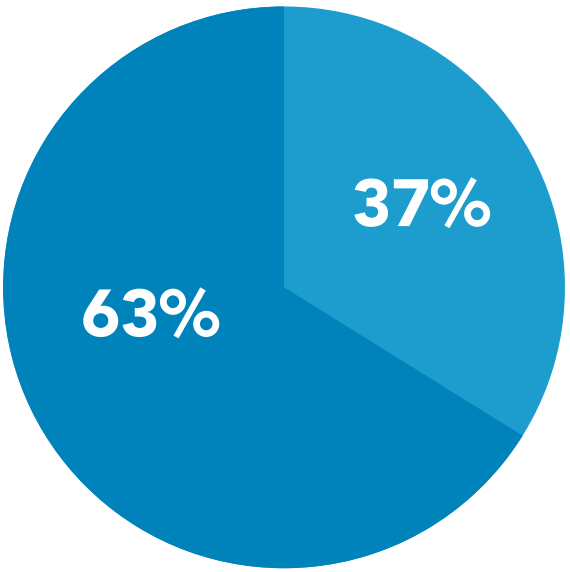
Grants submitted:	127
Grants awarded:	134

New grants (all years)

Direct costs	$24.2 million
Indirect costs	$9.4 million
Total	$33.6 million

Continued grants (all years)

Direct costs	$6.3 million
Indirect costs	$3.0 million
Total	$9.3 million



In 2015, Kaiser Permanente Southern California was the lead institution, or "prime," for 63% of all the grants and contracts submitted, and was the subcontractor institution for the remaining 37%.

Projects funded by Regional Research Committee

The Regional Research Committee awards funds from Kaiser Permanente's Community Benefit program for research projects led by clinicians and other health care professionals in Kaiser Permanente Southern California.

These projects address real-world clinical questions and have the potential to point to smarter ways to prevent and treat common health conditions. In 2015, the committee awarded funds to the following studies.

Asthma and Allergy

The HEDIS® Medication Management for People with Asthma (MMA) measure and asthma outcomes. (Principal investigator: William Crawford, MD, South Bay)

Real-world effectiveness of daily inhaled corticosteroids and montelukast monotherapy in children with mild persistent asthma. (PI: Pamela Tongchinsub, MD, resident, Los Angeles)

Bone Health and Orthopedics

Risk factors for failed arthroscopic shoulder capsulolabral repair. (PI: Edward Yian, MD, Orange County)

Cancer

A novel technique for harvesting and evaluating lymph nodes after radical operation for colon and rectal cancer. (PI: Daniel Klaristenfeld, MD, San Diego)

Fecal immunochemical tests and colorectal carcinoma detection. (PI: Daniel Zisook, MD, MPH, San Diego)

Cardiovascular Disease

The impact of standardizing management of atrial fibrillation with rapid heart rate in the emergency department. (PI: Ernesto De Leon, MD, Panorama City)

Dermatology

Application of integrated digital dermoscopy and reflectance confocal microscopy (RCM) in clinical practice. (PI: Natalie Y. Nasser, MD, Riverside)

The risk of aortic aneurysm in patients with psoriasis. (PI: Jashin Wu, MD, Los Angeles)

Digestive System Disorders

Does pancreatic cyst fluid carcinoembryonic antigen level predict pancreatic malignancy? A retrospective analysis. (PI: Kevin Kao, MD, Downey)

Application of Surgical Enhanced Recovery Techniques (ASERT) in the care of patients with acute pancreatitis: a randomized-controlled trial. (PI: Bechien Wu, MD, MPH, Los Angeles)

Laparoscopic lavage and drainage versus Hartmann's procedure for perforated diverticulitis. (PI: Mohammed Al-Temimi, MD, MPH, resident, Fontana)

Eye Research

Retinal toxicity among long-term hydroxychloroquine (plaquenil) users. (PI: Jeremy Shaw, MD, Baldwin Park)

Health Economics

Exercise Vital Sign and health care resource utilization. (PI: Alex McDonald, MD, resident, Fontana)

Kidney Disease

Survival and outcomes of advanced age in renal insufficiency. (PI: Hui Xue, MD, San Diego)

Urate-lowering therapy in moderate to severe chronic kidney disease. (PI: Gerald Levy, MD, MBA, Downey)

Maternal and Infant/Neonatal Health

Use of cardiac medications during pregnancy and risk of adverse fetal outcome. (PI: Ming-Sum Lee, MD, PhD, Los Angeles)

Medical Education

Survey assessment of performance improvement curriculum at Kaiser Permanente Southern California graduate medical education programs. (PI: So L. Onishi, MD, resident, San Diego)

Mental Health

Relationship between personality types and job satisfaction amongst physicians. (PI: Irina Filip, MD, resident, Fontana)

Antidepressant medication adherence, a look at prescribing practices that may influence compliance. (PI: Nicole Morris, MD, Los Angeles)

Neurological Disorders

Comparison of lamotrigine and levetiracetam as monotherapy for partial seizures and generalized seizures. (PI: Suresh Gurbani, MD, PhD, Orange County)

Aerobic exercise for stroke survivors. (PI: William Neil, MD, San Diego)

Post-lumbar puncture headache and prone positioning. (PI: Eric Kim, MD, resident, Los Angeles)

Primary Care

Albumin for hydration in patients susceptible to volume overload. (PI: Paul Salama, MD, Los Angeles)

Sports Medicine

Use of ultrasound in sports medicine clinic: a 5-year review. (PI: Michael Fong, MD, Los Angeles)

Urology

Use of appropriate ciprofloxacin for patients with uncomplicated urinary tract infection. (PI: Richard Guo, MD, resident, Fontana)

A retrospective cohort study investigating the association between continuous antibiotic prophylaxis and uropathogen resistant urinary tract infections in children with vesicoureteral reflux. (PI: Jenny Yiee, MD, Orange County)

Vaccine Safety and Effectiveness

The occurrence of shingles and the effect of zoster vaccination with the use of methotrexate in rheumatoid arthritis patients. (PI: Antony Lin, MD, Fontana)



2015: A year of milestones

The year began with preparations to host the 2015 HMORN (now the Health Care Systems Research Network) conference, which focused on "Care Improvement: Partnering with Patients, Providers, and Operational Leaders." The conference was widely hailed as a success.

June marked the launch of a new research intern program, bringing 6 outstanding interns to our department. The program offers master's students and recent graduates a real-world experience that will benefit them as they advance in their educational paths and careers.

We moved ahead with the reorganization of our department into 5 scientific divisions. Project staff moved into the divisions. We brought in new division research administrators, adding a new dimension to our leadership team.

We focused on operational and administrative efficiency. An important step was opening our research biospecimens processing and storage center. We also streamlined purchasing, hiring, and other administrative processes. This remains an area of focus for 2016.

The scientific team grew with the addition of 5 scientists in the Division of Biostatistics Research, a post-doctoral research fellow in the Division of Epidemiologic Research, and a research fellow in the Division of Health Services Research & Implementation Science.

Our Division of Clinical Trials Research oversaw 435 clinical trials in 2015. By the end of the year, enrollment in cancer clinical trials had increased by 29% over 2014.

More than a dozen of our scientists and staff earned recognition through Kaiser Permanente's GEM (Going the Extra Mile) Regional Recognition Program. Awardees included: Michael Batech, DrPH; Jean Chantra, MS; Jean Lawrence, ScD, MPH, MSSA; Tania Tang, PhD, MPH; Theresa Im, MPH; Harp Takhar, MPH; Kimberly Stanton; Russ McMillan, MBA; Dani K. Dodge Medlin; Kim Holmquist, MPH; Omar Marin; Lorena Perez-Reynoso; and Maureen Phelan.

SEARCH for Diabetes in Youth

One of the longest-running studies in the Department of Research & Evaluation turned 15 in 2015. In addition, the Centers for Disease Control and Prevention and the National Institute of Diabetes and Digestive and Kidney Diseases each awarded funds for SEARCH to continue for another 5 years through 2 cooperative agreements (U18DP006133 and UC4DK108173, respectively).

SEARCH for Diabetes in Youth is a multi-center study that focuses on the public health challenges of type 1 and type 2 diabetes in American youth, both at the time of their diagnosis and as they grow up. Initiated in 2000, SEARCH has enrolled more than 18,000 youth with diabetes from the 5 clinical centers.

Over the past 15 years, SEARCH investigators have reported that the incidence and prevalence of type 1 and type 2 diabetes are increasing, with differences observed by race and ethnicity. The study has brought attention to early diabetes-related complications in pediatric onset type 2 diabetes.

Future directions

Over the next 5 years, SEARCH investigators will continue to monitor trends in incidence and prevalence of diabetes, study the prevalence and progression of early complications, and study transitions from pediatric to adult health care providers. Led by Jean M. Lawrence, ScD, MPH, MSSA, SEARCH will take on the methodological challenges of using electronic health records for diabetes surveillance.



Dr. Lawrence is the principal investigator for the CDC grant and site PI for the NIDDK grant. Kristi Reynolds, PhD, MPH, and Mary Helen Black, PhD, MS, are co-investigators. David Pettitt, MD, is a collaborator.

Top: Dr. Deborah Rohm Young, Melissa Cornejo, Yasmina Mohan

Above, right: Dr. Mary Helen Black, Dr. Jean Lawrence, Dr. Kristi Reynolds

Next page: Lina Sy, Dr. Hung Fu Tseng, Dr. Sara Tartof, Dr. Bruno Lewin



Investigators

Scientific leadership



Steven J. Jacobsen, MD, PhD

Senior Director of Research

- Dr. Steven Jacobsen is a chronic disease epidemiologist who conducts population-based research that has a direct impact on patient care.
- Areas of interest: Urologic conditions, both benign and malignant; renal disease; and vaccine safety and effectiveness.
- In 2015: Dr. Jacobsen served as local principal investigator for the Vaccine Safety Datalink and several of its sub-studies, including one to explore the feasibility of incorporating natural language processing into the toolkit for monitoring adverse events following immunization.



Michael K. Gould, MD, MS

Director, Division of Health Services Research & Implementation Science

- Dr. Michael Gould conducts both externally funded and operationally focused research on respiratory disease, venous thromboembolism, and lung cancer. He leads the Care Improvement Research Team.
- Areas of interest: Dissemination and implementation research, delivery system science, patient-centered outcomes, and comparative effectiveness.
- In 2015: Dr. Gould received a $10 million award from the Patient-Centered Outcomes Research Institute to perform a large, multi-center, cluster-randomized, comparative effectiveness trial of alternative strategies for active surveillance of small pulmonary nodules.



Kristi Reynolds, PhD, MPH

Associate Director, Division of Epidemiologic Research

- Dr. Kristi Reynolds is a chronic disease epidemiologist whose research focuses on prevention and treatment of cardiovascular disease and cardiovascular disease outcomes.
- Areas of interest: Cardiovascular disease epidemiology; quality of care; lifestyle interventions to prevent cardiovascular disease; medication adherence; and risk factors including obesity, diabetes, hypertension, dyslipidemia.
- In 2015: Dr. Reynolds published research on the effect of heart failure hospitalization length of stay on hospital readmission, and the effectiveness of automated telephone reminder calls for improving medication refill rates of cardiovascular disease medications.



William J. Towner, MD, FACP, FIDSA

Regional Physician Director, Division of Clinical Trials Research

- Dr. William Towner is focused on the continued expansion of clinical trials for pharmaceuticals and devices in Kaiser Permanente Southern California.
- Areas of interest: Infectious diseases, particularly HIV and hepatitis C.
- In 2015: Dr. Towner published research on new treatments for hepatitis C; the risk of heart disease in HIV-infected patients who are taking abacavir; and Kaiser Permanente's HIV Care Cascade, which identifies opportunities to improve care to people living with HIV from diagnosis to viral suppression.



Anny Hui Xiang, PhD, MS

Director, Division of Biostatistics Research

- Dr. Anny Xiang is an investigator and applied biostatistician who uses statistical methodologies to understand disease development and conduct clinical trials in disease prevention and intervention.
- Areas of interest: Diabetes, gestational diabetes, obesity, and clinical trials.
- In 2015: Dr. Xiang published research on gestational diabetes and autism in offspring in *JAMA*. The novel research was reported by many news organizations across the globe and was one of the top Google health news articles on April 14, 2015.



Deborah Rohm Young, PhD, MBA

Director, Division of Behavioral Research

- Dr. Deborah Young conducts physical activity intervention trials for adults and adolescents, and studies how physical inactivity and excess sedentary time are associated with cardiovascular risk.
- Areas of interest: Health disparities, obesity prevention, cardiovascular risks, impacts and barriers to physical activity.
- In 2015: Dr. Young published 8 manuscripts. One examined the association of physical activity of KPSC patients measured by the Exercise Vital Sign with cardiometabolic risk factors.



Somjot S. Brar, MD, MPH

Chair, Regional Research Committee

- Dr. Somjot Brar studies the comparative effectiveness of medical devices, strategies, and medications for the management of cardiac diseases.
- Areas of interest: Cardiovascular diseases, outcomes, and predictors. Also, cardiovascular clinical trials: design, analysis, conduct, and reporting.
- In 2015: Dr. Brar worked on studies focused on improving the safety of invasive cardiac procedures.



Elizabeth A. McGlynn, PhD*

Director, Kaiser Permanente Center for Effectiveness & Safety Research

- Dr. Elizabeth McGlynn is responsible for the strategic direction and scientific oversight of the Center for Effectiveness & Safety Research, an interregional research center designed to assess the diagnostic and treatment strategies that work best for different people.
- Areas of interest: Quality and efficiency of health care delivery.
- In 2015: Dr. McGlynn was a member of the Institute of Medicine committee that produced a report on Diagnostic Error in Medicine. She published a related article in *JAMA* on the importance of measurement in reducing diagnostic error.

* In 2016, Dr. McGlynn was appointed vice president, Kaiser Permanente Research, while continuing in her role as director of CESR.

Research scientists



Annette L. Adams, PhD, MPH | Research Scientist I

Division of Epidemiologic Research

- Dr. Annette Adams focuses on medications and risk of fractures, particularly osteoporosis-related injuries of the hip and lower extremities.
- Areas of interest: Bone health and orthopedic injuries in older adults.
- In 2015: Dr. Adams' work on bisphosphonate drug holidays and fractures influenced Kaiser Permanente Southern California's clinical guidelines regarding the ongoing management of osteoporosis.



John L. Adams, PhD, MS | Research Scientist III

Division of Biostatistics Research

- Dr. John Adams focuses on improving quantitative methods in comparative effectiveness research and causal analysis of observational data.
- Areas of interest: Quasi-experimental and improved study design methods.
- In 2015: Dr. Adams published research on how to compare hospitals and variations in quality and patient experience nationally in the Medicare population.



Mary Helen Black, PhD, MS | Research Scientist I*

Division of Biostatistics Research

- Dr. Mary Helen Black is a biostatistician and genetic epidemiologist who focuses on genetic and environmental contributions to diabetes, obesity, and cardiovascular disease.
- Areas of interest: Genetic associations, gene-gene and gene-environment interaction, pharmacogenetics.
- In 2015: Dr. Black studied genetic associations with diabetes-related traits and comorbid conditions, and the relationships between elevated blood pressure before, during, and after pregnancy.

*Dr. Black left KPSC in 2016 to take a position as a senior statistical geneticist at Ambry Genetics.



Chun Chao, PhD, MS | Research Scientist II

Division of Epidemiologic Research

- Dr. Chun Chao is a cancer epidemiologist who focuses on generating knowledge to guide clinical practices and inform guideline development related to cancer care.
- Areas of interest: Adolescent and young adult cancers, lymphoid malignancies, and cervical cancer prevention and screening.
- In 2015: Dr. Chao investigated the risk of cardiovascular diseases among cancer survivors with a focus on adolescents, young adults, and the elderly. She examined gaps in cervical cancer screening, including screening behaviors by HPV immunization status.



Craig Cheetham, PharmD, MS | Research Scientist II

Division of Epidemiologic Research

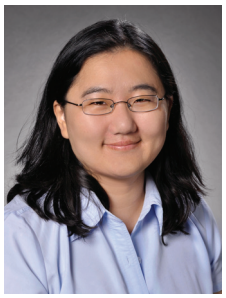
- The focus of Dr. Craig Cheetham's research is pharmacoepidemiology and drug safety.
- Areas of interest: Cardiovascular safety of drugs, maternal and neonatal safety of drugs and vaccines used during pregnancy, medication adherence, and hepatitis C treatment.
- In 2015: Dr. Cheetham authored articles on varicella zoster vaccine safety in adults taking immunosuppressants, and on hepatitis C genotype III treatment. In addition, he was awarded a grant by the National Institute of Child Health and Human Development to study mild to moderate hypertension in pregnancy.



Karen J. Coleman, PhD, MS | Research Scientist II

Division of Behavioral Research

- Dr. Karen Coleman focuses on the behavioral, social, and environmental determinants of adult obesity and interventions in primary care for adult depression.
- Areas of interest: Health equity and patient-, provider-, and system-level factors that lead to successful interventions for physical and emotional wellness.
- In 2015: Dr. Coleman was lead investigator for Southern California in the Mental Health Research Network, and led studies on the impact of bariatric surgery on weight loss and remission of chronic disease.



Kim N. Danforth, ScD, MPH | Research Scientist I

Division of Epidemiologic Research

- Dr. Kim Danforth is an epidemiologist whose primary goal is to use research to answer health questions with real-world significance.
- Areas of interest: Cancer prevention, etiology, treatment, and care quality, particularly for bladder cancer, ovarian cancer, and prostate cancer. Also quality of care, outpatient safety, health equity, and disparities.
- In 2015: Dr. Danforth was lead investigator on a new grant focused on determining the factors that contribute to care gaps in outpatient settings, and how often those gaps in care occur.



Stephen F. Derose, MD, MSHS | Research Scientist I

Division of Health Services Research & Implementation Science

- Dr. Stephen Derose's research focuses on prevention of chronic disease, and clinical care delivery and outcomes.
- Areas of interest: Sleep disorders, chronic kidney disease, and emergency department outcomes.
- In 2015: Dr. Derose was principal investigator on a study to determine whether treatment for sleep apnea affects kidney disease progression. He examined the relationship between the use of a PAP machine and acute care utilization. He assessed the effects of the Affordable Care Act on patient insurance and health.



Darios Getahun, MD, PhD, MPH | Research Scientist II

Division of Epidemiologic Research

- Dr. Darios Getahun focuses on the role of genetics and the environment in the risk of birth complications and poor health for children and mothers.
- Areas of interest: Perinatal and child health, successive pregnancy outcomes, health disparities.
- In 2015: Dr. Getahun found that the rate of chorioamnionitis among mothers is higher and the risk for passing the infection onto newborns is lower than previously reported. This means that antibiotics may not be necessary for all babies born to mothers with chorioamnionitis.



David Glass, PhD | Research Scientist III

Division of Health Services Research & Implementation Science

- Dr. David Glass uses qualitative and quantitative methods to understand how knowledge, beliefs, values, perceptions, emotions, and environment factor into individual and group decisions, and the implications of those findings for improving the delivery of care.
- Areas of interest: Decision-making processes of members and physicians.
- In 2015: Dr. Glass researched end-of-life preferences of members, the impact of a worksite clinic on cost and utilization, and how patients make decisions to use urgent care or the emergency room.



Erin E. Hahn, PhD, MPH | Research Scientist I

Division of Health Services Research & Implementation Science

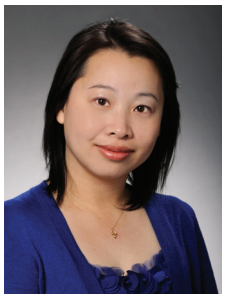
- Dr. Erin Hahn is a health services researcher who uses both qualitative and quantitative methods to explore health care quality and variations in cancer care.
- Areas of interest: Quality of care in oncology, clinical guideline implementation, and delivery system science.
- In 2015: Dr. Hahn focused on reducing use of unnecessary cancer care, assessing stakeholder input on cancer survivorship care, and exploring the impact of comorbidities on cancer survival.



Reina Haque, PhD, MPH | Research Scientist II

Division of Epidemiologic Research

- Dr. Reina Haque is a senior cancer epidemiologist and scientific advisor for the Cancer Registry. She has served on the Breast Cancer Campaign (U.K.), Breast Cancer Now, and NIH/NCI grant review panels.
- Areas of interest: Cancer prognosis, survivorship, and treatment effects.
- In 2015: Dr. Haque published 11 papers on prostate and breast cancer, including one study that examined the safety of antidepressant use among breast cancer survivors taking tamoxifen, and another on how blood glucose control and antidiabetic medications affect breast and gynecologic cancer risk. She is on the editorial board of Pharmacoepidemiology & Drug Safety.



Rulin C. Hechter, MD, PhD | Research Scientist I

Division of Epidemiologic Research

- Dr. Rulin Hechter focuses on improving care and reducing disparities among patients at risk or living with HIV infection and associated comorbidities.
- Areas of interest: HIV prevention and care management, substance abuse, and vaccine safety and effectiveness.
- In 2015: Dr. Hechter was the site principal investigator on 3 ongoing multisite studies funded by the National Institutes of Health, including the National Drug Abuse Treatment Clinical Trials Network. She received the Claudette Gravell Award from Kaiser Permanente in recognition of her passion, dedication, and effort in improving HIV care and research.



Sharon M. Hudson, PhD, MA | Research Scientist I

Division of Behavioral Research

- Dr. Sharon Hudson is a behavioral scientist who uses qualitative and quantitative methods to evaluate psychosocial determinants of health and behavior. She has an additional role engaging physicians in research.
- Areas of interest: Individual-, physician-, and system-related factors affecting adherence, and ophthalmology.
- In 2015: Dr. Hudson authored an evaluation of Kaiser Permanente Southern California's diabetic retinopathy reading center project, which won the 2015 Lawrence Patient Safety Award and the 2015 National Business Coalition on Health eValue8 Innovations Award.



Aniket A. Kawatkar, PhD, MS | Research Scientist I

Division of Health Services Research & Implementation Science

- Dr. Aniket Kawatkar uses established methods of econometrics, cost-effectiveness, conjoint analysis, and net-benefit analysis to evaluate interventions and treatments aimed at improving patient care in clinical settings.
- Areas of interest: Comparative effectiveness research, secular trends, health inequity and disparities, and patterns of health care utilization and associated outcomes.
- In 2015: Dr. Kawatkar evaluated out-of-pocket costs, expenditures, and health-related quality of life for health plan members. He presented an abstract of the results at the Academy of Managed Care Pharmacy's 27th Annual Meeting, where it was awarded a gold medal.



Corinna Koebnick, PhD, MSc | Research Scientist II

Division of Behavioral Health Research

- Dr. Corinna Koebnick is an obesity epidemiologist whose research focuses on children and young adults. From 2012 to 2015, she also led Kaiser Permanente Southern California's efforts to build a research biobank.
- Areas of interest: Health consequences of obesity in children and young adults, and health services for those with obesity-related conditions.
- In 2015: Dr. Koebnick worked on the implementation of a novel computer-assisted decision support tool to improve adherence to pediatric blood pressure screening guidelines.



Annette M. Langer-Gould, MD, PhD, MS | Research Scientist I

Division of Epidemiologic Research

- Dr. Annette Langer-Gould is an epidemiologist and multiple sclerosis specialist at the Kaiser Permanente Los Angeles Medical Center.
- Areas of interest: The role of vitamin D, genotype, race/ethnicity, and MS susceptibility; MS and pregnancy; predictors of prognosis and comparative effectiveness of MS therapeutics.
- In 2015: She led a team that is developing, implementing, and evaluating programs to provide high-quality affordable care for individuals with MS.



Jean M. Lawrence, ScD, MPH, MSSA | Research Scientist III

Division of Epidemiologic Research

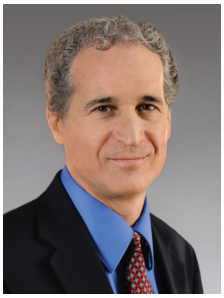
- Dr. Jean Lawrence focuses on issues that affect the health of children, young adults, and reproductive-age women.
- Areas of interest: Trends, health care utilization, and transitions of care; psychosocial implications of type 1 and type 2 diabetes among children and young adults; gestational diabetes mellitus; use of telemedicine; disparities.
- In 2015: Dr. Lawrence's multicenter longitudinal SEARCH for Diabetes in Youth Study was funded by the Centers for Disease Control and Prevention (CDC) and the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) for an additional 5 years (through 2020) for a total of 20 years of continuous federal funding.



Marlene M. Lugg, DrPH, MPH | Research Scientist I

Division of Epidemiologic Research

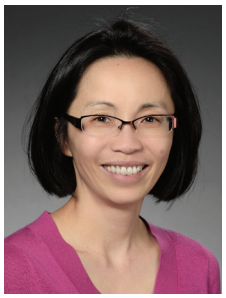
- Dr. Marlene Lugg focuses on the study of immunization practices, vaccine safety, the development of health information systems, and the causes and control of accidental injury.
- Areas of interest: Vaccines, injury prevention, and data linkage and immunization-tracking systems.
- In 2015: Dr. Lugg worked on research focused on mortality rates in a vaccinated population, undervaccination in the United States, and the impact of delays in obtaining childhood vaccination.



Brian S. Mittman, PhD | Research Scientist III

Division of Health Services Research & Implementation Science

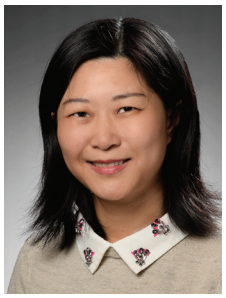
- Dr. Brian Mittman focuses on strengthening the fields of implementation and improvement science and enhancing their contributions to improve health care quality and outcomes.
- Areas of interest: Organization and delivery of health care services and the development and application of health care quality and performance improvement strategies.
- In 2015: Dr. Mittman researched high-performing health care delivery systems, studied patient transitions between hospital care and home care and other settings, and evaluated Kaiser Permanente's electronic clinical surveillance innovations.



Huong Q. Nguyen, PhD, RN | Research Scientist II

Division of Health Services Research & Implementation Science

- Dr. Huong Nguyen focuses on using observational and experimental research methods to improve care processes and outcomes for older adult patients with chronic conditions.
- Areas of interest: Self-management, physical activity, depression, care transitions, and palliative care.
- In 2015: Dr. Nguyen and the Project ACHIEVE team visited 10 Kaiser Permanente medical centers in Southern California and interviewed over 400 leaders and clinicians to determine challenges to implementing care transition services for patients being discharged from hospitals.



Lei Qian, PhD | Research Scientist I

Division of Biostatistics Research

- Dr. Lei Qian is a biostatistician lead for the Division of Epidemiologic Research and the Division of Biostatistics Research.
- Areas of interest: Study design and complex statistical analysis using Kaiser Permanente Southern California electronic health record data.
- In 2015: Dr. Qian worked on research focused on assessing influenza vaccine safety among inpatients and examining the utilization and costs of severe uncontrolled asthma in a managed care setting.



Virginia P. Quinn, PhD, MPH | Research Scientist II

Division of Behavioral Research

- Dr. Virginia Quinn is a health services and behavioral health researcher.
- Areas of interest: Cancer prevention, screening, and quality of care.
- In 2015: Dr. Quinn was co-principal investigator for the National Cancer Institute-funded study Optimizing Colonoscopy & Fecal Immunochemical Tests for Community-based Screening (COLOFIT), KPSC site principal investigator for the Cancer Research Network, and co-lead for the CRN Prevention & Screening Scientific Working Group. She also studied treatment and outcomes in bladder and cervical cancer, and transgender care.



Adam L. Sharp, MD, MS | Research Scientist I

Division of Health Services Research & Implementation Science

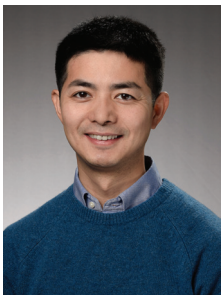
- Dr. Adam Sharp is an emergency physician and health services researcher who identifies gaps between best and current practices and evaluates interventions to facilitate better care.
- Areas of interest: Translational research, evidence-based care, and social determinants.
- In 2015: Dr. Sharp published studies on antibiotic use, pneumonia care, use of CT imaging, emergent stroke care, and evaluation of patients with possible pulmonary embolus. In partnership with clinical leaders, this research improves patient care through lab enhancements and electronic decision support for providers.



Ernest Shen, PhD | Research Scientist I

Division of Biostatistics Research

- Dr. Ernest Shen is the biostatistician lead for the Division of Health Services Research & Implementation Science, and focuses on quantitative methodology for health services research.
- Areas of interest: Structural equation modeling, quantile regression, and Bayesian inference.
- In 2015: Dr. Shen published on the level of ambulation in hospitalized patients, the use of imaging in early-stage breast cancer, the use of antibiotics for treating sinusitis, and the links between body mass index and childhood exposure to tobacco smoke and air pollution.



Jiaxiao Shi, PhD | Research Scientist I

Division of Biostatistics Research

- Dr. Jiaxiao Shi is the biostatistician lead for the Regional Research Statistical Support team.
- Areas of interest: Non-parametric statistical approaches and data mining techniques.
- In 2015: Dr. Shi published studies on breast cancer and breast cancer survivors, the outcomes of nonresistant hypertension, and studied the connection between statins and hip fracture risk in men.



Margo A. Sidell, ScD, MSPH | Research Scientist I

Division of Biostatistics Research

- Dr. Margo Sidell is the biostatistician and programmer lead for the Division of Behavioral Research.
- Areas of interest: Statistical methods, risk-reduction behavior, preventive care, physical activity, diet, and environments as they relate to overall wellness.
- In 2015: Dr. Sidell published research examining HPV4 initiation in boys in relation to changing use recommendations; and serum phosphorus levels, race, and socioeconomic status in hemodialysis patients.



Jeff Slezak, MS | Research Scientist I

Division of Biostatistics Research

- Jeff Slezak is a biostatistician lead for the Division of Epidemiologic Research and the Division of Biostatistics Research.
- Areas of interest: Prostate and bladder cancer and vaccine safety.
- In 2015: Jeff Slezak published 10 manuscripts on a wide range of topics including the progression and treatment of lower urinary tract symptoms in men, prostate cancer treatments, HPV4 vaccine initiation, and Kaiser Permanente's Creatinine Safety Program.



Hung Fu Tseng, PhD, MPH | Research Scientist III

Division of Epidemiologic Research

- Dr. Hung Fu Tseng is an infectious disease researcher focused on evaluating vaccine effectiveness and safety in real-world settings.
- Areas of interest: Vaccinology, infectious diseases, pharmacoepidemiology, outcomes research, and evidence-based medicine.
- In 2015: Dr. Tseng was the principal investigator of a National Institute of Allergy and Infectious Diseases–funded study evaluating the risk factors for shingles and effectiveness of the shingles vaccine in preventing long-term pain. He was also the principal investigator for several Phase IV clinical trials assessing the safety of a meningococcal vaccine.

Research fellows



Anna Davis, MPH | Research Fellow

Division of Health Services Research & Implementation Science

- Areas of Interest: Health economics, super utilization, disparities, and systems redesign.
- In 2015: Anna Davis was the primary investigator on a study to identify latent subgroups of the most costly, complex patients within Kaiser Permanente. She worked with Clinical Operations Support to drive the operational uptake of a predictive algorithm for super utilization. She is the regional project leader for the Kaiser Permanente Southern California Predicted High-Utilizers Program.



Nirupa R. Ghai, PhD, MPH | Post-Doctoral Research Fellow

Division of Epidemiologic Research

- Areas of interest: Colorectal, bladder, head and neck cancers.
- In 2015: Dr. Nirupa Ghai was co-investigator on a bladder cancer recurrence study. She researched cancer incidence among solid organ transplant recipients, prostate cancer, and colorectal cancer screening. She won an Early Career Investigator Award from the Health Care Systems Research Network for evaluating colorectal cancer screening among Asian patients.



Leila Family, PhD, MPH | Post-Doctoral Research Fellow*

Division of Epidemiologic Research

- Areas of interest: Clinical prediction models for chemotherapy-induced risk factors; cancer survivorship; causes of molecular and genetic cancer.
- In 2015: Dr. Leila Family conducted observational studies to predict the risks and symptoms associated with chemotherapy-induced anemia in cancer patients. She also worked on developing and validating a clinical risk prediction model for febrile neutropenia, and evaluated the risk of febrile neutropenia with several chemotherapy regimens.

*Dr. Family left KPSC in 2016 to work at the Los Angeles County Department of Public Health.



Shayna L. Henry, PhD | Post-Doctoral Research Fellow

Division of Health Services Research & Implementation Science

- Areas of interest: Modifiable factors associated with the etiology, course, and treatment of chronic disease.
- In 2015: Dr. Shayna Henry studied patient, provider, and system influences on dialysis starts and outcomes; physical activity among kidney disease patients; and use of the Online Personal Action Plan to improve care.



Stephanie R. Reading, PhD, MPH | Post-Doctoral Research Fellow

Division of Epidemiologic Research

- Area of interest: Relationship between physical and mental health.
- In 2015: Dr. Stephanie Reading contributed to multiple manuscripts on quality of life and depression screening in men with prostate cancer. She also began work on a project examining antihypertensive medication use and unintentional fall-related injuries in the elderly.



Sara Yee Tartof, PhD, MPH | Post-Doctoral Research Fellow*

Division of Epidemiologic Research

- Areas of interest: Vaccine-preventable diseases, hospital-acquired infections, and hepatitis C infection.
- In 2015: Dr. Sara Tartof was lead author on a study performing a comprehensive assessment of risk of hospital-associated *C. difficile* infection due to outpatient and inpatient antibiotic exposure. Her work around antibiotic use has been used to inform antibiotic stewardship goals for the Infectious Disease department.

*Dr. Tartof was appointed Research Scientist I in 2016.

Affiliated investigators

Sirichai Chayasirisobhon, MD

Associate Investigator

- Areas of interest: Mechanism of refractory epilepsy, the use of vagus nerve stimulation for epilepsy, and clinical trials of new anti-epileptic drugs.
- In 2015: Dr. Sirichai Chayasirisobhon led 2 clinical trials exploring the efficacy, safety, and effectiveness of medications for seizures. He researched developmental disability associated with epilepsy and clinical data analysis of patients with epilepsy.

R. James Dudl, MD

Associate Investigator

- Areas of interest: Population-level cardiovascular disease prevention and diabetes.
- In 2015: Dr. James Dudl studied population glucose control in patients with diabetes.

Donald S. Fong, MD, MPH

Associate Investigator

- Areas of interest: Retinal diseases, glaucoma, and outcomes of cataract surgery.
- In 2015: Dr. Donald Fong conducted studies to investigate real-world treatment outcomes for diabetic retinopathy and glaucoma.

Richard Fortuna, MD

Associate Investigator

- Areas of interest: Device research, specifically coronary stents; and most recently, bioabsorbable stents.
- In 2015: Dr. Richard Fortuna was principal investigator for 4 clinical trials including the Partner II trials, which involves the placement of aortic transcatheter valves.

George F. Longstreth, MD

Associate Investigator

- Areas of interest: Gastrointestinal disease epidemiology, functional gastrointestinal disorders, acute large bowel ischemia, diverticulitis, celiac disease, and medical anthropology.
- In 2015: Dr. George Longstreth co-authored the American College of Gastroenterology Clinical Guidelines on colon ischemia and reported on large visceral artery occlusion in patients with right-side colon ischemia.

David A. Sacks, MD

Associate Investigator

- Areas of interest: Diabetes in pregnancy and the use of telemedicine in the care of women with gestational diabetes.
- In 2015: Dr. David Sacks received a grant to explore the use of telemedicine in the care of women with gestational diabetes, was a co-investigator on the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study, published an editorial on the selection of oral hypoglycemic medications, and collaborated on research papers focused on gestational diabetes and hypertension in pregnancy.

Michael Schatz, MD, MS

Associate Investigator

- Areas of interest: Patient-centered asthma outcomes, risk stratification for asthma population management, asthma quality-of-care measures, and the interrelationships of asthma and pregnancy.
- In 2015: Dr. Michael Schatz was lead author on a prospective study of the relationship of obesity to asthma impairment and risk, and co-author on several other research articles focused on asthma.

Lauren P. Wallner, PhD, MPH

Adjunct Investigator

- Areas of interest: Understanding the outcomes, quality of care, and utilization of health services associated with cancer.
- In 2015: Dr. Lauren Wallner published research on trends in PSA testing, cancer treatment, and the use of preventive care after prostate cancer diagnosis. She also received a grant to survey primary care physicians about collaborative cancer care.

Robert S. Zeiger, MD, PhD

Associate Investigator

- Areas of interest: Asthma and allergic disorders, clinical trials comparing asthma treatments, cost analysis of asthma and allergic disorders, and outcomes research.
- In 2015: Dr. Robert Zeiger was lead author on several asthma studies, including one on the health care utilization and cost of severe uncontrolled asthma, and another on the characteristics and outcomes of asthma patients who also had a COPD diagnosis.

Clinical trials investigators

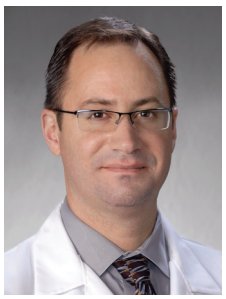
This section lists the principal investigators for the established clinical trials programs in Kaiser Permanente Southern California. In addition to the investigators for these programs, independent investigators lead clinical trials at medical centers throughout the region. All clinical trials principal investigators who were active in 2015 are listed by specialty starting on page 54.



Robert M. Cooper, MD

Pediatric Hematology/Oncology, Los Angeles Medical Center

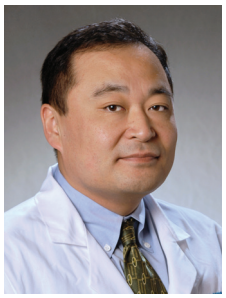
- Dr. Robert Cooper leads the Kaiser Permanente Southern California Pediatric Oncology Clinical Trials Program, which oversees clinical trials for children, adolescents, and young adults with cancer. The program had more than 30 clinical trials open for enrollment in 2015.
- Areas of interest: Treatment, survivorship, and end-of-life issues of children, adolescents, and young adults with cancer, as well as timeliness of cancer care delivery.
- In 2015: Dr. Cooper was the principal investigator for Kaiser Permanente Southern California's program for cord blood collection for public banking.



Michael R. Girvigian, MD

Radiation Oncology, Los Angeles Medical Center

- Dr. Michael Girvigian is the assistant chief for the Department of Radiation Oncology at the Los Angeles Medical Center and principal investigator for Radiation Therapy Oncology Group clinical trials at Kaiser Permanente Southern California.
- Areas of interest: The management of central nervous system tumors of the brain and spine, as well as soft tissue tumors.
- In 2015: Dr. Girvigian was the principal investigator on 10 radiation oncology clinical trial protocols; he was instrumental in opening the new radiation facilities in Anaheim.



Han Koh, MD

Hematology/Oncology, Downey Medical Center

- Dr. Han Koh is a principal investigator for the Cancer Clinical Trials Access Program for Kaiser Permanente Southern California.
- Areas of interest: Pancreatic cancer, prostate cancer, renal cancer, and non-Hodgkin lymphoma.
- In 2015: Dr. Koh was principal investigator on clinical trials focused on therapies for squamous cell lung cancer, combining drugs to fight metastatic colorectal cancer, and advanced genome sequencing on resected lung cancers with the goal of better predicting who might benefit from chemotherapy.



Scott E. Lentz, MD

Gynecologic Oncology, Los Angeles Medical Center

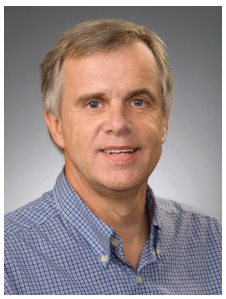
- Dr. Scott Lentz is principal investigator for Gynecologic Oncology Group Trials.
- Areas of interest: Uterine sarcomas, novel approaches in minimally invasive surgery, the history of colposcopy, and best practices in hereditary cancer syndromes.
- In 2015: Dr. Lentz led clinical trials, co-authored studies on ovarian cancer risk with diabetic medications, published a study about micrometastatic disease in cervical cancers, and led a multi-regional study of incidence and outcomes in uterine sarcomas.



Shawn A. Menefee, MD

Ob-Gyn/Urogynecology, San Diego Medical Center

- Dr. Shawn Menefee is division director of Female Pelvic Medicine & Reconstructive Surgery in San Diego, and lead chair for the Regional Pelvic Floor Disorders Committee, Southern California Permanente Medical Group.
- Areas of interest: Pelvic floor disorders including urinary incontinence, pelvic organ prolapse, and fecal incontinence.
- In 2015: Dr. Menefee co-authored studies on vaginal mesh, robotic surgery, complications of mesh and laparoscopic hysterectomy, and demand for pelvic floor care. He was principal investigator on a National Institute of Child Health and Human Development–sponsored prolapse trial.



Anders Nyberg, MD, PhD

Hepatology, San Diego Medical Center

- Dr. Anders Nyberg is a principal investigator with the San Diego Hepatology Research Program and is active in clinical trials and epidemiological research.
- Areas of interest: New drug therapies for hepatitis C, liver disease, and other gastrointestinal disorders.
- In 2015: Dr. Nyberg conducted 6 clinical trials, providing hepatitis C treatment to over 100 Kaiser Permanente members. He participated in 2 epidemiological studies, and led studies evaluating cancer rates in patients with hepatitis C and statin use on liver cancer.



Lisa Nyberg, MD, MPH

Hepatology Research, San Diego Medical Center

- Dr. Lisa Nyberg leads the hepatology clinical trials unit in San Diego.
- Areas of interest: New drug therapies for patients with hepatitis C, hepatitis B, fatty liver disease, celiac disease, and liver transplant patients.
- In 2015: Dr. Nyberg conducted 2 epidemiological studies, an inter-regional epidemiological study, and 6 clinical trials including a trial that provided hepatitis C treatment at no cost for over 100 Kaiser Permanente members. Her study results have been internationally recognized.



Jonathan A. Polikoff, MD

Hematology/Oncology, San Diego Medical Center

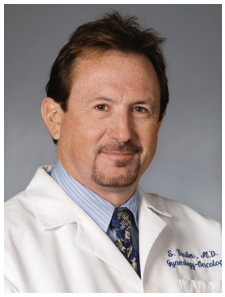
- Dr. Jonathan Polikoff is the director of the Cancer Clinical Trials Access Program for Kaiser Permanente Southern California. He also leads the Southern California component of the Kaiser Permanente NCI Community Oncology Research Program.
- Areas of interest: Establishing new standards of treatment for cancer, prevention of breast and colon cancer, and improving the quality of life for cancer patients.
- In 2015: Dr. Polikoff led clinical trials involving genomic testing to determine appropriate targeted therapy in various malignancies and immunotherapy studies in breast, lung, melanoma, and bladder cancer.



Ricardo T. Spielberger, MD

Oncology/Transplant, Los Angeles Medical Center

- Dr. Ricardo Spielberger is director of Bone Marrow Transplantation for the Southern California Permanente Medical Group.
- Areas of interest: Hematopoietic cell transplantation for the treatment of hematologic malignancies, reducing transplantation side effects, and management of opportunistic infections.
- In 2015: Dr. Spielberger was involved in the hematologic malignancies clinical trials at City of Hope, the acute leukemia group at City of Hope, and implementation of the bone marrow transplant clinical research trials agreement between Kaiser Permanente and City of Hope.



Steven Vasilev, MD, MBA

Gynecologic Oncology, Los Angeles Medical Center

- Dr. Steven Vasilev is director of the Surgical and Radiation Oncology Clinical Trials Access Program, which conducts clinical trials at several Kaiser Permanente Southern California medical centers.
- Areas of interest: Industry and cooperative group clinical trials focusing on gynecologic malignancies, including treatment-oriented protocols, quality of life, and impact of nutritional support on survivorship.
- In 2015: In collaboration with Dr. Girvigian, Dr. Lentz, and the Surgical & Radiation Oncology Clinical Trials Access Program investigators, Dr. Vasilev expanded access to and enrollment in clinical trials involving sites including breast, central nervous system, head and neck, lung, pancreatic, and rectal cancers.



In Memoriam
Robert J. Hye, MD

Robert J. Hye, MD, a Southern California Permanente Medical Group clinician investigator and vascular surgeon, passed away on February 22, 2016.

Dr. Hye had worked at the Kaiser Permanente San Diego Medical Center since 1997 and served as chief of the vascular surgery division there from 2004 until his passing. He previously served as associate professor and chief of vascular surgery at the University of California, San Diego.

He served as the San Diego area research chair for SCPMG from 2005 to 2015. He was the principal investigator on more than 40 trials, and published more than 75 research articles. Dr. Hye also established founding registries to track abdominal aortic aneurysms within Kaiser Permanente.

He was a member of several surgical societies, including the Western Vascular Society, which created a research travel fund in his memory to help residents and fellows attend and present at the group's yearly meetings.

An avid fisherman, skier, and golfer, Dr. Hye said that one of his proudest accomplishments was making a hole in one on the third hole at San Diego's Torrey Pines Golf Course.

Clinical trials investigators by specialty

Allergy

Sandra Christiansen, MD, San Diego – Clairemont Mesa Medical Offices

Noah Friedman, MD, San Diego – Clairemont Mesa Medical Offices

Michael Kaplan, MD, Los Angeles Medical Center

Robert Zeiger, MD, PhD, San Diego – Clairemont Mesa Medical Offices

Cardiology

Vicken Aharonian, MD, Los Angeles Medical Center

Somjot Brar, MD, MPH, Los Angeles Medical Center

Jeffrey Cavendish, MD, San Diego Medical Center

Eric Chou, MD, Fontana Medical Center

Richard Fortuna, MD, PhD, San Diego Medical Center

Nigel Gupta, MD, Los Angeles Medical Center

William Keen, MD, San Diego Medical Center

Daniel Lang, MD, West Los Angeles Medical Center

Dermatology

Jashin Wu, MD, Los Angeles Medical Center

Emergency Medicine

Garo Balkian, MD, Woodland Hills Medical Center

Donald Mebust, MD, San Diego Medical Center

Endocrinology

Patricia Wu, MD, San Diego – Carmel Valley Medical Offices

Family Medicine

Michael Lalich, MD, San Diego Medical Center

Gastroenterology

Chris Conteas, MD, Los Angeles Medical Center

Bechien Wu, MD, MPH, Los Angeles Medical Center

Karl Kwok, MD, Los Angeles Medical Center

General and Oncologic Colorectal Surgery

Vikram Attaluri, MD, Los Angeles Medical Center

Elisabeth McLemore, MD, Los Angeles Medical Center

General Surgery

Louis Difronzo, MD, Los Angeles Medical Center

Gregory Marrujo, MD, Riverside Medical Center

Genetics

George Tiller, MD, PhD, Los Angeles Medical Center

Gynecologic Oncology

Steven Vasilev, MD, MBA, Los Angeles Medical Center

Scott Lentz, MD, Los Angeles Medical Center

Devansu Tewari, MD, MBA, Irvine – Alton/Sand Canyon Medical Offices

Hepatology

Lisa Nyberg, MD, MPH, San Diego – Garfield Specialty Care Center

Anders Nyberg, MD, PhD, San Diego Medical Center

Hepatology/Transplant

Amandeep Sahota, MD, Los Angeles Medical Center

Infectious Diseases

Gunter Rieg, MD, South Bay Medical Center

Holly Kim, MD, West Los Angeles Medical Center

Jim Nomura, MD, Los Angeles Medical Center

Mario Perez, DO, Fontana Medical Center

Bhavani Rao, MD, Panorama City Medical Center

Jared Spotkov, MD, Harbor City – South Bay Medical Center

Internal Medicine

David Buccigrossi, MD, Carlsbad Medical Offices

William Towner, MD, Los Angeles Medical Center

Steve Lee, DO, Fontana Medical Center

Nephrology

John Sim, MD, Los Angeles Medical Center

Neurology

Zahra Ajani, MD, Los Angeles Medical Center

Sirichai Chayasirisobhon, MD, Anaheim – La Palma Medical Offices

Suresh Gurbani, MD, Anaheim – Kraemer Medical Offices

Annette Langer-Gould, MD, PhD, MS, Los Angeles Medical Center

Prasanth Manthena, MD, Los Angeles Medical Center

Navdeep Sangha, MD, Los Angeles Medical Center

Neuro-Oncology

Richard Green, MD, Los Angeles Medical Center

Ob-Gyn

Keisha Dyer, MD, MPH, San Diego – Pt. Loma Medical Offices

Ob-Gyn/Urogynecology

Karl Luber, MD, San Diego – Pt. Loma Medical Offices

Shawn Menefee, MD, San Diego – Pt. Loma Medical Offices

John Nguyen, MD, Downey – Orchard Medical Offices

Jasmine Tan-Kim, MD, San Diego – Pt. Loma Medical Offices

Oncology

Jonathan Polikoff, MD, San Diego Medical Center

Han Koh, MD, Downey Medical Center

Gary L. Buchschacher, MD, Los Angeles Medical Center

Oncology/Transplant

Ricardo T. Spielberger, MD, Los Angeles Medical Center

Ophthalmology

Nicole Benitah, MD, West Los Angeles Medical Center

Orthopedics

Kamran Aurang, MD, Irvine – Alton/Sand Canyon Medical Offices

Jennifer Weiss, MD, Los Angeles Medical Center

Pediatrics

Barbara Lounsbury, MD, San Diego – Clairemont Mesa Medical Offices

Pediatrics-Adolescent/Teen Health

Luis Zeledon, MD, Los Angeles Medical Center

Pediatric Cardiology

Morris Salem, MD, Los Angeles Medical Center

Pediatric Oncology

Robert Cooper, MD, Los Angeles Medical Center

Jerry Cheng, MD, Los Angeles Medical Center

Pediatric Pulmonology

Muhammad Saeed, MD, Los Angeles Medical Center

Radiation Oncology

Michael Girvigian, MD, Los Angeles Medical Center

Radiology

Lei Feng, MD, PhD, Los Angeles Medical Center

Regional Metabolic Services

Rebecca Mardach, MD, Los Angeles Medical Center

Urology

Gary Chien, MD, Los Angeles Medical Center

Polina Reyblat, MD, Los Angeles Medical Center

Eugene Rhee, MD, San Diego – Otay Mesa Medical Offices

Vascular Surgery

Robert Hye, MD, San Diego Medical Center

Next page: Dr. Robert Namba, Liz Paxton, Dr. Tadashi Funahashi

Regional Research Committee 2015

Somjot Brar, MD, MPH
Chair, Regional Research Committee

Antelope Valley

Jonathan T. Truong, MD, Area Research Chair

Baldwin Park

Gregory Maletis, MD, Area Research Chair

Downey

Eugene A. Chu, MD, Area Research Chair

Fontana/San Bernardino

Robert Sallis, MD, Area Research Chair

South Bay

Bradley K. Ackerson, MD, Area Research Chair

Los Angeles

John Sim, MD, Area Research Chair

Orange County

Patrick J. Van Winkle, MD, Area Research Chair

Panorama City/Valencia

Shireen Fatemi, MD, Area Research Chair

Riverside/Palm Springs

Brian Lim, MD, Area Research Chair

San Diego

Robert Hye, MD, Area Research Chair

West Los Angeles/Kern County

Michael J. Fassett, MD, Area Research Chair

Woodland Hills

Lester D. Thompson, MD, Area Research Chair

Department of Research & Evaluation

Area Research Chair: Steven J. Jacobsen, MD, PhD
RRC Operations: Usha G. Vaghasia



Publications

2015 Publications

Scientists, clinicians, and other health professionals from Kaiser Permanente Southern California authored scholarly publications on a wide range of topics in 2015, from allergy and asthma to women's health. Kaiser Permanente Southern California authors are noted in **bold.**

Allergy and Asthma

Crans Yoon A, Lin CK, Sheikh J. The mamey sapote fruit (*Pouteria sapota*) as a novel cause of IgE-mediated allergic reaction. *Ann Allergy Asthma Immunol.* 2015 Apr;114(4):352-353.

Crans Yoon A, Crawford W, Sheikh J, Nakahiro R, Gong A, Schatz M. The HEDIS medication management for people with asthma measure is not related to improved asthma outcomes. *J Allergy Clin Immunol Pract.* 2015 Jul-Aug;3(4):547-552.

Gerald JK, Gerald LB, Vasquez MM, Morgan WJ, Boehmer SJ, Lemanske RF, Mauger DT, Strunk RC, Szefler SJ, **Zeiger RS,** Bacharier LB, Bade E, Covar RA, Guilbert TW, Heidarian-Raissy H, Kelly HW, Malka-Rais J, Sorkness CA, Taussig LM, Chinchilli VM, Martinez FD. Markers of differential response to inhaled corticosteroid treatment among children with mild persistent asthma. *J Allergy Clin Immunol Pract.* 2015 Jul-Aug;3(4):540-546. e3. PMCID: PMC4500671.

Macy E, Contreras R. Adverse reactions associated with oral and parenteral use of cephalosporins: a retrospective population-based analysis. *J Allergy Clin Immunol.* 2015 Mar;135(3):745-52.e5.

Macy E. Penicillin allergy: optimizing diagnostic protocols, public health implications, and future research needs. *Curr Opin Allergy Clin Immunol*. 2015 Aug;15(4):308-313.

Namazy JA, **Schatz M**. Pharmacotherapy options to treat asthma during pregnancy. *Expert Opin Pharmacother.* 2015;16(12):1783-1791.

Solensky R, **Macy E**. Minor determinants are essential for optimal penicillin allergy testing: a pro/con debate. *J Allergy Clin Immunol Pract.* 2015 Nov-Dec;3(6):883-887.

Sullivan PW, Campbell JD, Globe G, Ghushchyan VH, Bender B, **Schatz M,** Chon Y, Woolley JM, Magid DJ. Measuring the effect of asthma control on exacerbations and health resource use. *J Allergy Clin Immunol.* 2015 Nov;136(5):1409-1411.e1-6.

Tse K, Chen L, Tse M, Zuraw B, **Christiansen S**. Effect of catastrophic wildfires on asthmatic outcomes in obese children: breathing fire. *Ann Allergy Asthma Immunol.* 2015 Apr;114(4):308-311.e4. PMCID: PMC4387007.

Zeiger RS, Schatz M, Chen W, Li Q, Khatry DB, Tran TN. Adherent uncontrolled adult persistent asthma: characteristics and asthma outcomes. *J Allergy Clin Immunol Pract.* 2015 Nov-Dec;3(6):986-990.e2.

Zeiger RS, Schatz M, Li Q, Chen W, Khatry DB, Gossage D, Tran TN. The association of blood eosinophil counts to future asthma exacerbations in children with persistent asthma. *J Allergy Clin Immunol Pract.* 2015 Mar-Apr;3(2):283-287.e4.

Bone Health and Orthopedics

Acevedo DC, Shore B, Mirzayan R. Orthopedic applications of acellular human dermal allograft for shoulder and elbow surgery. *Orthop Clin North Am.* 2015 Jul;46(3):377-388, x.

Adams AL, Shi JM, Reynolds K, Haque R, Cheetham TC, Kawatkar AA, Fithian DC, Jacobsen SJ. Statins and hip fracture risk in men: a population-based case-control study. *Ann Epidemiol.* 2015 Nov;25(11):844-848.

Bachasson D, **Singh A,** Shah SB, Lane JG, Ward SR. The role of the peripheral and central nervous systems in rotator cuff disease. *J Shoulder Elbow Surg.* 2015 Aug;24(8):1322-1335. PMCID: PMC4508670.

Chen Z, Salam MT, Karim R, Toledo-Corral CM, Watanabe RM, **Xiang AH,** Buchanan TA, Habre R, Bastain TM, Lurmann F, Taher M, Wilson JP, Trigo E, Gilliland FD. Living near a freeway is associated with lower bone mineral density among Mexican Americans. *Osteoporos Int.* 2015 Jun;26(6):1713-1721. PMCID: PMC4470808.

Dillon MT, **Ake CF, Burke MF, Singh A, Yian EH, Paxton EW, Navarro RA**. The Kaiser Permanente Shoulder Arthroplasty Registry. *Acta Orthop.* 2015 Jun;86(3):286-292. PMCID: PMC4443451.

Granan LP, Baste V, Engebretsen L, **Inacio MC**. Associations between inadequate knee function detected by KOOS and prospective graft failure in an anterior cruciate ligament-reconstructed knee. *Knee Surg Sports Traumatol Arthrosc.* 2015 Apr;23(4):1135-1140.

Guppy KH, **Harris J, Paxton LW, Alvarez JL, Bernbeck JA**. Reoperation rates for symptomatic nonunions in anterior cervical fusions from a national spine registry. *Spine.* 2015 Oct 15;40(20):1632-1637.

Hall MP, Paik RS, Ware AJ, Mohr KJ, Limpisvasti O. Neuromuscular evaluation with single-leg squat test at 6 months after anterior cruciate ligament reconstruction. *Orthop J Sports Med.* 2015 Mar;3(3):2325967115575900. PMCID: PMC4622360.

Inacio MC, Chen Y, Paxton EW, Namba RS, Kurtz SM, Cafri G. Statistics in brief: an introduction to the use of propensity scores. *Clin Orthop Relat Res.* 2015 Aug;473(8):2722-2726. PMCID: PMC4488189.

Inacio MC, Pratt NL, Roughead EE, Graves SE. Predicting infections after total joint arthroplasty using a prescription based comorbidity measure. *J Arthroplasty.* 2015 Oct;30(10):1692-1698.

Inacio MC, Weiss JM, Miric A, Hunt JJ, Zohman GL, Paxton EW. A community-based hip fracture registry: population, methods, and outcomes. *Perm J.* 2015 Summer;19(3):29-36. PMCID: PMC4500478.

Khatod M, Cafri G, Inacio MC, Schepps AL, Paxton EW, Bini SA. Revision total hip arthoplasty: factors associated with re-revision surgery. *J Bone Joint Surg Am.* 2015 Mar 4;97(5):359-366.

Khatod M, Inacio MC, Dell RM, Bini SA, **Paxton EW, Namba RS**. Association of bisphosphonate use and risk of revision after THA: outcomes from a US total joint replacement registry. *Clin Orthop Relat Res.* 2015 Nov;473(11):3412-3420. PMCID: PMC4586196.

Lu C, He D, Yang C, **Wilson JJ**. Use of computer-assisted templates for placement of osteotomies in lateral gap arthroplasty. *J Oral Maxillofac Surg.* 2015 Jan;73(1):30-38.

Maletis GB, Inacio MC, Funahashi TT. Risk factors associated with revision and contralateral anterior cruciate ligament reconstructions in the Kaiser Permanente ACLR registry. *Am J Sports Med.* 2015 Mar;43(3):641-647.

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Credits

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Produced in August 2016

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