

Kaiser Permanente
Research

RESEARCH

with an *Impact*
on health



Department of Research & Evaluation
2014 Annual Report

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.

Contents

Message from the Director	4
Research Highlights	
Drug holidays don't increase fracture risk	6
Bariatric surgery: the impact on weight and total health	10
Activity coaching to help reduce COPD readmissions	14
Closing the gap in hepatitis B screening	16
When lower blood pressure isn't better	18
Sit less, move more to prevent heart failure	20
NCORP brings cancer clinical trials closer to home	22
Engaging physicians in research for 60 years: RRC	24
RRC's roots: Kaiser Permanente's founding fathers	28
Accomplishments and Milestones	
Selected findings	30
Funding overview	32
Research program overview	35
Celebrating our research team	36
Investigators	
Scientific leadership	38
Research scientists	40
Post-doctoral research fellows	46
Associate investigators	48
Clinical trials investigators	49
2014 Publications	56

Message from the Director

We believe research should have an impact on health

Millions of people in Southern California and around the country rely on Kaiser Permanente to care for their health. Our mission is to provide high-quality, affordable care to our members and improve the health of the communities we serve.

Medical research is an integral part of that mission. What we learn through our research is transforming how we provide care and promote health. It's changing the way we prescribe medication for osteoporosis (page 6), treat people with hypertension (page 18), and talk to patients about heart health and physical activity (page 20).

We're growing a program dedicated to high-impact research

Kaiser Permanente Southern California's research program's roots reach back 6 decades (page 28). But the pace of growth has accelerated in the past 10 years. The Department of Research & Evaluation has grown from 60 people a decade ago to 360 in 2014. Funding for research has climbed from \$24 million in 2009 to \$50 million in 2014.



Today, our research team has expertise in health services research and implementation science, behavioral research, clinical trials research, epidemiologic research, and biostatistics research. Our clinician researchers represent a wide range of specialties and subspecialties. And we have a growing number of collaborators in other areas, from clinical operations to quality improvement.

These partnerships amplify the impact research has on health. A great example is our bariatric surgery research program, which shows how partnerships between clinicians and researchers can simultaneously advance scientific knowledge and quality of care (page 10).

A new project funded by the Patient-Centered Outcomes Research Institute offers another great example (page 14). Researchers, pulmonologists, physical activity coaches, and patients are working together to test a personalized coaching system to encourage physical activity—something that we know is beneficial to patients with chronic obstructive pulmonary disease, but is difficult for many patients to initiate.

We make an impact by advancing treatment for our patients

The diversity of our population, our geographic reach, and our integrated system makes us an attractive site for clinical trials. In 2014, we became a part of the National Cancer Institute's Community Oncology Research Program, which seeks to offer clinical trials to patients with cancer in the communities where they live (page 22).

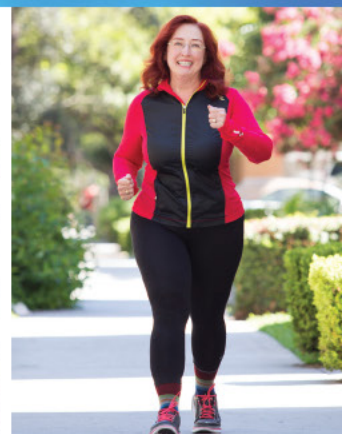
Our electronic health record Kaiser Permanente HealthConnect® provides a powerful tool to share new evidence with frontline clinicians. For example, we're using best practice alerts to close a care gap in screening for hepatitis B and other sexually transmitted infections (page 16).

Research can be a powerful catalyst for change. But it takes people who know how to use research findings to truly make a difference. I am fortunate to come to work every day with a group of dedicated and innovative people who share a common goal: research with an impact on health.

A handwritten signature in dark ink, appearing to read "Steve", is positioned above the printed name of the director.

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

Research Highlights



Drug holidays don't increase fracture risk

A look at possible harms, benefits of bisphosphonate "time-out"



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This Kaiser Permanente Southern California study found that women who take a “holiday” for at least 12 months after at least 3 years of bisphosphonate use are not at greater risk of osteoporosis-related fragility fracture than women who continue to use the drugs without interruption. The findings suggest that a drug holiday is a viable option for managing the potential benefits and harms associated with long-term bisphosphonate use.

This study helped inform KPSC’s updated clinical practice guidelines for osteoporosis and fracture prevention. “I see more and more physicians recommending a bisphosphonate drug holiday as a result of this study,” said orthopedist Gaurav Khanna, MD, vice area research chair, from our Baldwin Park Medical Center. “It certainly has affected how these drugs are prescribed.”

Bisphosphonates are commonly prescribed to slow bone loss due to osteoporosis. In 2010, however, the Food and Drug Administration warned patients that the drugs might actually increase the risk of atypical thigh bone fractures. This warning added to a growing body of evidence that long-term bisphosphonate use may increase rare but serious health risks.

“Physician chiefs and other clinical leaders throughout Kaiser Permanente identified bisphosphonate safety as an important question to address,” said Elizabeth A. McGlynn, PhD, director of the Kaiser Permanente Center for Effectiveness & Safety Research.

Balancing safety with impact

Clinicians wanted to know how to best balance the protective benefits of the drug versus the risks of prolonged use. What if they advised patients to stop taking the drug for a period of time? Would a “drug holiday” bring back the risk of osteoporotic fractures?

“This is an important clinical question because bisphosphonates are among the most commonly used treatments for osteoporosis management, but have been associated with some adverse events that are of concern,” said Annette L. Adams, PhD, MPH, research scientist for Kaiser Permanente Southern California and the study’s principal investigator.

“Our clinicians had been thinking about putting people on a drug holiday, but that only makes sense if it doesn’t increase their risk of the kinds of fractures that the drugs are supposed to prevent in the first place,” she said.



“The question was, if women stop taking these drugs, will they experience the fracture risk we’re trying to prevent?”

— Elizabeth A. McGlynn, PhD

In 2013, Kaiser Permanente conducted a retrospective cohort study to compare the incidence of osteoporosis-related fragility fractures among women who took a bisphosphonate drug holiday for at least 12 months with that of the women who continued to use them without interruption.

This study was funded through internal operational funds provided by the Kaiser Permanente Center for Effectiveness & Safety Research.

Opposite page: Dr. Gaurav Khanna and Elaine Jeché

Above right: Dr. John Adams and Dr. Elizabeth McGlynn



“This is an example of how Kaiser Permanente’s own internal research can really help inform patient care and clinical guideline recommendations.”

—Marguerite Koster, MA, MFT

Study benefits from diverse population

Researchers evaluated electronic medical record data from 4 Kaiser Permanente regions—Southern California, Colorado, Northwest, and Hawaii. The study included a racially and socioeconomically diverse group of 28,620 women ages 45 years and older who had used bisphosphonate medications for at least 3 years.

“This study demonstrates our ability to pull together a multi-region team of researchers and clinicians and to do a large scale study that would be really difficult to do in other settings,” said Dr. Adams.

Findings provide valuable insight

The findings showed no apparent difference between the women who stopped taking the medications and those who did not. The bottom line? “Low-risk” patients—those who had no history of hip, vertebral, or fragility fracture—could discontinue bisphosphonate use for at least 12 months without an increase in fracture risk.

“Our findings show that taking a holiday from bisphosphonates may be a very reasonable choice for many women, particularly those at the lower end of the risk scale,” said Dr. Adams. “But it always boils down to a conversation between a patient and the clinician and taking into account individual risk factors and concerns.”

Dr. Adams and her team presented the study at the American Society for Bone and Mineral Research 2014 annual meeting, where she was recognized with the 2014 Most Outstanding Clinical Abstract Award.

“There was considerable interest in that presentation because people are grappling with the question about the long-term risk of treatment with these drugs,” said Marguerite Koster, MA, MFT, senior manager for Evidence-Based Medicine Services for the Southern California Permanente Medical Group. “This was really a groundbreaking study that filled an important gap in the literature.”

Putting findings into practice

The study helped inform changes to the region’s clinical practice guidelines. “This study was key in helping us develop our recommendations around whether patients should go on a drug holiday or not,” said Koster. “This is an example of how Kaiser Permanente’s own internal research can really help inform patient care and clinical guideline recommendations not only within Kaiser Permanente, but can also help other organizations make decisions about what is the best course of treatment.”

Opposite page: Marguerite Koster and Dr. Annette Adams

Above right: Dr. Mary Helen Black



New study investigates PPI use and hip fractures

Proton pump inhibitors are among the most commonly prescribed drugs in the world for ulcers and gastroesophageal reflux disease. But do PPIs cause hip fractures, especially in the elderly, who often take high doses? And is the relationship between PPIs and hip fractures modified by variation in the *CYP2C19* gene involved in drug metabolism?

Although numerous observational studies associate PPI use with hip fractures, no one has yet established a causal relationship. That’s the goal of a U.S. Food and Drug Administration–funded study at Kaiser Permanente that may well determine the definitive guidelines for high-dose PPI use.

The feasibility study was completed in October 2013. The full study is now underway and will run until April 2017 at Kaiser Permanente Southern California, Northwest, and Hawaii. The Oregon Health & Science University will analyze samples from the participants for the pharmacogenetics study.

“Investigating a possible causal relationship requires sophisticated statistical methods,” said Mary Helen Black, PhD, MS, one of the study’s principal investigators. “In addition, the genetic component of this study is incredibly novel. The idea that it has the potential to help facilitate the implementation of precision medicine in this area is very exciting.”

Dr. Black and Dr. Annette L. Adams are the joint principal investigators for this study.

Studying the impact on weight and total health

Bariatric surgery registry and research



Impact»»

Research at Kaiser Permanente Southern California is shedding new light on the impact of bariatric surgery on weight and total health. Clinicians and researchers first collaborated to build a registry that tracked the progress of patients who had received surgery. This partnership evolved into a full-fledged research program that has advanced our understanding of bariatric surgery's influence on health beyond weight loss. These findings are changing the way clinicians and patients think about bariatric surgery and how it can help people who are severely obese change the future of their health.

Bariatric surgery is an option for treating a major health problem in America—severe obesity. But there are a lot of questions about whom it helps most, what kinds of procedures work best, and how surgery might affect health conditions like diabetes. Researchers and clinicians at Kaiser Permanente Southern California are partnering to answer these questions, using a registry designed to support better care and innovative science.

As recently as 10 years ago, most bariatric surgery procedures for KPSC members were performed by surgeons at contracted facilities. This meant we often could not tell who had surgery until 2 to 3 months after the fact, and we were not able to know how patients were doing with respect to weight loss and any complications that happened during surgery or immediately afterward.

“The lack of data made it very difficult, if not impossible, to measure and monitor the quality of the surgeries, the outcomes, and progress of our bariatric surgery patients,” said Karen J. Coleman, PhD, MS, KPSC research scientist.

Registry and research as a quality tool

To address this important problem, Dr. Coleman partnered with John Brookey, MD, regional assistant medical director of Quality and Risk Management for the Southern California Permanente Medical Group, to create a registry that would track surgeries in real time and provide a better sense of how patients were doing.

“We wanted the registry—and research using registry data—to be a key part of our bariatric surgery program,” Dr. Coleman said. “We wanted it to be a quality improvement tool.”

“The lack of data made it very difficult, if not impossible, to measure and monitor the quality of the surgeries, the outcomes, and progress of our bariatric surgery patients.”

—Karen J. Coleman, PhD, MS

In June 2008, the registry was formed with financial support from SCPMG. It had both a comprehensive database to be used for quality reporting and research, as well as a web-based interface that could be used for population care management. Data for the registry come from a variety of sources, including reports sent by contract surgical groups, Kaiser Permanente HealthConnect, and outside claims processing databases.

Registry data yields valuable insight

Most bariatric surgeries are now performed in Kaiser Permanente hospitals, but the need for data is still key. Today, the Department of Research & Evaluation uses the registry to monitor quality for the region's bariatric surgery program. Dr. Coleman worked with the bariatric surgeons to develop a dashboard that reports key indicators such as surgical details, weight loss outcomes, readmissions, and reoperations. “We’re an integral part of the quality monitoring for these patients,” Dr. Coleman said.

Opposite page: Dr. Karen Coleman and Dr. Cecelia Crawford



“We’ve been able to use these registry data for performance and quality improvement in order to standardize the program.”

—John Brookey, MD

“The registry has made us more efficient and more productive in how we tailor our follow-up program for patients after surgery,” said Jack Der-Sarkissian, MD, regional lead for Adult Weight Management and Bariatric Surgery Care Management. “It has helped us tremendously in determining best practices.” For example, the registry was used to provide feedback to our internal surgical programs about how long patients are in the hospital. This information helped substantially reduce that time through innovative care practices that are now standard of care for these patients.

“We’re using the registry primarily to examine results, identify trends, and improve outcomes,” said Robert Zane, MD, a bariatric surgeon at our South Bay Medical Center. “Plus, some patients are comforted by the fact that we have a registry that shows how our results compare to those of surgeries performed elsewhere.”

“Patients always ask how much weight they will lose, and these data help us give them a realistic evidence-based idea of what they can expect,” said bariatric surgeon Benjamin Kim, MD, of our West Los Angeles Medical Center.

Improved patient management

Part of the functionality of the registry is an interactive online patient management tool to provide bariatric surgery case managers and clinicians with real-time identification and tracking of their patients.

“This tool allows us to track our individual patients so we can make sure we’re doing everything we can to help them stay healthy and maintain their weight loss,” said Robert Peterson, RN, CBN, care manager, Bariatric Surgery for our Los Angeles Medical Center. “We now have a wealth of information about what happens to patients after surgery.”

Results reveal important learnings

KPSC researchers have used bariatric surgery registry data to discover some important effects on weight loss and health:

- Non-Hispanic black and Hispanic patients who had gastric bypass surgery lost less weight than non-Hispanic white patients over a 3-year period. Non-white patients who had the sleeve gastrectomy (the newest restrictive procedure) lost the same amount of weight as their white counterparts who had the same procedure.
- Non-Hispanic black and Hispanic patients were less likely than non-Hispanic white patients to experience remission of metabolic syndrome, a group of conditions that increase a person's risk of coronary artery disease, stroke, and type 2 diabetes.
- Those with many serious health problems at the time of surgery were less likely to resolve their diabetes than patients with fewer and less severe health problems.

Peter Fedorka, MD, a bariatric surgeon at our Fontana Medical Center, said the research is valuable in helping patients understand how bariatric surgery can influence weight loss and other improvements to their health. "Knowing our outcomes helps us to counsel our patients when they start asking, 'what are the chances my blood pressure gets better, what are the chances my diabetes gets better, what are the chances I'll lose weight?' Knowing that the results are based on research that's from our own experience and has been published in the peer-reviewed literature has been helpful in counseling patients."

"Some believe that the vertical sleeve is just as good as the Roux-en-Y, and our research has repeatedly shown that's not true," said Dr. Coleman. "We have also shown that surgery may not solely result in weight loss, but also may serve as an intervention for diabetes."

"Registry data truly have an impact on clinical care," said Heather Watson, MBA, senior consultant in SCPMG Clinical Operations. "In addition, our research helps inform clinical decisions and clinical practice guidelines. The bariatric registry has had a positive impact on many aspects of the delivery of bariatric surgery across the region and the entire Kaiser Permanente program."

Opposite page: Dr. Karen Coleman and Dr. John Brookey

Above right: Dr. Cecelia Crawford



"Kaiser Permanente gave me the tool to save my life. My lab results have improved significantly and I no longer need cholesterol and blood pressure medications."

— Cecelia Crawford, DNP, RN, Kaiser Permanente member

Research results in action

Cecelia Crawford, DNP, RN, a Kaiser Permanente member and nursing researcher, had gastric bypass surgery at UCLA in 2005 and lost 133 pounds. Today, she is at a healthy weight and very active, and has run half-marathons and marathons, and has hiked Mt. Whitney 4 times.

"Kaiser Permanente gave me the tool to save my life. My lab results have improved significantly and I no longer need cholesterol and blood pressure medications," she said. "I'm in the bariatric surgery registry and am proud that my information is contributing to research to help other bariatric surgery patients."



Activity coaching to help reduce admissions

Coaches help COPD patients get physically active at home

About 1 in 5 patients with chronic obstructive pulmonary disease is readmitted within 30 days of leaving the hospital. Reducing hospital readmissions is more important than ever—to the government, to hospitals, and certainly to patients themselves. Kaiser Permanente Southern California researchers have found a potentially effective tool to help keep these patients out of the hospital—physical activity.

According to a KPSC study published in the *Annals of the American Thoracic Society* in June 2014, patients who participated in any level of moderate to vigorous physical activity before their initial hospitalization had a 33% lower risk of readmission within 30 days, compared to those who were inactive.

“This study provides evidence that supports the promotion of physical activity and suggests that regular physical activity could buffer the stresses of hospitalization,” said KPSC research scientist and the study’s lead author, Huong Q. Nguyen, PhD, RN.

Although it’s known that supervised exercise training as part of pulmonary rehabilitation improves outcomes, very few patients are able to participate.

“The problem is that pulmonary rehabilitation programs are not accessible to most patients,” said pulmonologist and study co-author, Smrita Desai, DO, of our San Diego Medical Center. “So getting someone who is chronically breathless to increase physical activity on their own can be challenging.”

Impact»

This Kaiser Permanente Southern California study found that patients with COPD who participated in any level of moderate to vigorous physical activity had a lower risk of hospital readmission within 30 days, compared to those who were inactive.

To facilitate increased activity, researchers are conducting an innovative real-world trial of a personalized 12-month physical activity coaching program for patients with COPD. The study will measure outcomes of greatest importance to patients, such as staying out of the hospital. If the study is successful, physical activity coaching could offer COPD patients an effective way to become more active.

“When I was first diagnosed with emphysema, I felt like I was lost because I didn’t know how to help myself... I don’t feel like that now. This program gives you a lot of support and encouragement.”

— Ron Fox, Kaiser Permanente member

But what about a phone-based program where patients could exercise at home on their own time and at their convenience—could such a program avert or delay adverse outcomes, including hospitalization?

To find out, KPSC initiated a study funded by the Patient-Centered Outcomes Research Institute. The 4-year study will test the effectiveness of a patient-centered, physical activity coaching program (Walk On!) in a real-world health care setting. It will measure outcomes that are most important to patients, such as quality of life and staying out of the hospital. Participants will receive a personalized activity coaching program over 12 months.

“Coaches will monitor patients’ activity, provide guidance, and help them overcome barriers,” said study co-investigator and physical activity coach, Augusto Cam, RRT, RPFT, of our Los Angeles Medical Center. “Our research will give us a rare opportunity to look inside and find out what is really going on with our patients who have COPD.”

The potential for this real-world trial of physical activity coaching for patients with COPD is encouraging. “The clinical impact of this study could be tremendous,” said Dr. Nguyen. “If this study shows that physical activity coaching can improve outcomes, we can offer patients an effective alternative to formal pulmonary rehabilitation programs.

Opposite page: Dr. Huong Nguyen and Augusto Cam

Above right: Augusto Cam and Kenneth Desjardins Jr.



Patients join Walk On! study research team

Patients with COPD often have to abandon the active lifestyles they once enjoyed. And they often need to be hospitalized, sometimes for extended stays.

When Kaiser Permanente was starting a 3-month trial run of a physical activity coaching program for patients with COPD, Kaiser Permanente member Ron Fox was happy to participate. The pilot study was conducted in preparation for the 4-year physical activity coaching study funded by the Patient-Centered Outcomes Research Institute.

After the trial run, Fox was invited to join the study’s research team as a Patient Advisory Board member. “We regard Mr. Fox and the other 5 advisory board members as equal partners on the team,” said principal investigator, Huong Q. Nguyen, PhD, RN, a KPSC research scientist. “We want his perspective to ensure that the study reflects the needs and priorities of our patients.”

Fox has already shown progress in the program. For him, a key measure of its success to date is that he can now mow his lawn in 30 to 45 minutes instead of 2 hours, and he has stayed out of the hospital for many months. He attributes much of his success to the quality of the coaching.

Kaiser Permanente member Kenneth Desjardins Jr. (pictured above with physical activity coach Augusto Cam), also serves as a patient advisor for the study.

“When they asked me to be an advisor for the Walk On! Program, I said yes. I’ve been through it all with COPD, so I thought I had a lot to offer,” said Desjardins. “If I can help people with COPD to help themselves, I will have done my job.”

Closing the gap in hep B screening

Results alert clinicians to screen and vaccinate patients with STIs



Impact»

Based on the care gap identified in this study, we have added a best-practice alert in our electronic health record system to prompt providers to consider ordering tests for HIV and major STIs, including hepatitis, and to offer appropriate vaccinations. We are conducting a follow-up study to evaluate the impact of the alert on HBV screening and vaccination rates, as well as the HIV testing rate.

"This study shows the value of the link between research and clinical operations," said study co-author William Towner, MD, regional physician director for Clinical Trials Research. "It also points out clear opportunities for quality improvement. As hepatitis B can lead to liver cancer, I think it's important to view the hepatitis B vaccine as a cancer prevention vaccine and we should take every opportunity to offer it."

According to the Centers for Disease Control and Prevention, 39% of adults diagnosed with acute hepatitis B had sought care or were treated for a sexually transmitted infection before they were infected with hepatitis B. Many of these hepatitis B infections could have been prevented through vaccination at the time of diagnosis and treatment for an STI.

Hepatitis B can cause very serious consequences including cirrhosis, liver cancer, and liver failure. It is the underlying cause of an estimated of 2,000 to 4,000 deaths each year in the U.S. The most common source of acute, newly acquired hepatitis B infections among adults is sexual contact.

In 2008, the CDC published new recommendations for routine screening for hepatitis B infection among all adults seeking treatment for STIs and for providing hepatitis B vaccination to those who are susceptible to hepatitis B infection.

Assessing our own practices

"We wanted to know if Kaiser Permanente Southern California clinicians were following the CDC recommendation to extend routine hepatitis B screening for people with high-risk sexual behaviors, and to vaccinate them if they are susceptible to the infection," said Rulin C. Hechter, MD, PhD, KPSC research investigator. Dr. Hechter was the lead author of the resulting study, which was published in *Clinical Infectious Diseases* in February 2014.

The retrospective cohort study included 15,357 adult KPSC members who were diagnosed with chlamydia, gonorrhea, or syphilis between January 2008 and December 2011.

The study found that only 28.1% of the patients were screened for active hepatitis B infection within 90 days following an STI diagnosis. Among those considered susceptible to hepatitis B infection, only about 11% initiated the hepatitis B vaccine series.

Hepatitis B screening and vaccination rates were significantly lower among black adults than white adults. This has important public health implications on the targeted intervention effort, because national surveillance data suggest that black adults remain at increased risk of hepatitis B infection, even though the vaccine has been available for many years.

"Our results suggest that a large proportion of primary care providers are not fully aware that people with STIs are also at increased risk of acquiring hepatitis B infection," said Dr. Hechter. "A low rate of screening for active hepatitis B infection in adults with STI diagnoses results in missed opportunities to identify patients who can benefit from hepatitis B vaccination and early hepatitis B treatment."

Best-practice alert added to EHR

To help increase awareness and encourage testing, we have implemented a best-practice alert in Kaiser Permanente HealthConnect. It prompts providers to consider ordering tests for hepatitis B if they are ordering an STI test for a patient, and provides a link to the hepatitis B vaccination order. We are also using other strategies such as physician education and training to raise awareness of the need to test and vaccinate adults at risk for hepatitis B.

Opposite page: Dr. Rulin Hechter and Dr. William Towner



When lower blood pressure isn't better

Over- and under-treatment linked to kidney failure and death

Isn't low blood pressure always healthier than high blood pressure? Not necessarily, according to the results of a Kaiser Permanente Southern California study. In fact, patients with blood pressure levels above or below an optimal range are at increased risk of kidney failure or death. The study was published in the *Journal of the American College of Cardiology* in August 2014.

"The conventional thinking has been that it's good to bring a hypertensive patient's blood pressure down as low as possible for the best outcomes," said lead study author John Sim, MD, from our Los Angeles Medical Center. This, however, is basing treatment goals on a population of people without high blood pressure, for whom 115 or 120 systolic would be considered very healthy. "Our study suggests that the 'lower the better' approach is not ideal," Dr. Sim said.

"There may be a subpopulation for whom clinicians may be adding risk with aggressive treatment."

Researchers examined the electronic health records of nearly 400,000 Kaiser Permanente patients in Southern California who were medically treated for hypertension from January 2006 through December 2010.

The study found that patients with blood pressures within the range between 130 and 139 systolic and between 60 and 79 diastolic were at the lowest risk for kidney failure and death. Blood pressure rates higher and lower than this range were associated with an increased risk of death and of developing end-stage renal disease, whether or not the patients had chronic kidney disease.

Impact»

Kaiser Permanente Southern California researchers found that, among people being treated for high blood pressure, those who had blood pressure in the range 130/60 to 139/70 experienced the lowest risk for mortality and end-stage renal disease.

Patients with blood pressure above or below these ranges were at greater risk for these outcomes.

Based in part on this study, Kaiser Permanente has launched a low blood pressure alert in the electronic medical records of all patients ages 70 years and older who are on blood pressure medication. In addition, the blood pressure thresholds have been raised for patients ages 60 years and older with diabetes and chronic kidney disease.

“As a result of this study, there’s considerably more conversation about the adverse effects of overtreatment. People are talking about it, thinking about it, and I’m hopeful that it will have an impact in the hypertension world outside Kaiser Permanente,”

—Joel Handler, MD

When compared with patients who had a systolic blood pressure of between 130 and 139, patients in the range between 120 and 129 (widely accepted as normal) were 10% more likely to die or develop kidney failure. Patients with a systolic blood pressure between 140 and 149 were 40% more likely to develop kidney failure or to die.

“While we have previously recommended a more aggressive blood pressure lowering for these patients, we have now pulled back,” said Dr. Sim.

Although current U.S. treatment guidelines recommend that adults between ages 30 and 59 years with hypertension should aim for a target blood pressure below 140/90, the guidelines do not cite the dangers of lowering a patient’s blood pressure below a certain level. The KPSC study clearly alerts clinicians to the dangers.

Before this study was published, KPSC started to address low blood pressure in patients ages 70 years and older who are on blood pressure medication. When the patients have a blood pressure of 110 systolic or lower, an alert is triggered in Kaiser Permanente HealthConnect with the recommendation to consider reducing or discontinuing the medications to achieve more appropriate blood pressure rates.

“As a result of this study, there’s considerably more conversation about the adverse effects of overtreatment. People are talking about it, thinking about it, and I’m hopeful that it will have an impact in the hypertension world outside Kaiser Permanente,” said Joel Handler, MD, of our Anaheim Medical Center, regional hypertension champion. “We are showing that there’s a flip side of very high control rates.”

“We hope to change the thinking that ‘lower is better,’ and pave the way for a more effective strategy in treating patients with high blood pressure,” said Dr. Sim.

An update: In 2015, KPSC was recognized by the U.S. Department of Health and Human Services as Hypertension Control Champions by Million Hearts™, a national initiative to prevent 1 million heart attacks and strokes by 2017.

Opposite page: Dr. John Sim

Sit less, move more to prevent heart failure

That's the word from an innovative new study on sedentary behavior



**Climbing stairs
free workout b
right into your**

KAISER PERMANENTE®

Impact»

This Kaiser Permanente Southern California study found that men who reported low levels of physical activity and prolonged sedentary behavior had more than twice the risk for heart failure than their more active, less sedentary counterparts.

The study made national and international headlines and even earned a mention on *The Tonight Show With Jay Leno*. Kaiser Permanente members received the message too: An article about the study in their national member newsletter had more than 200,000 page views.

"Getting just 30 minutes per day of physical activity is one of the best things you can do for your heart," said Bob Sallis, MD, a family and sports medicine physician at our Fontana Medical Center. "But we can't stop there. This study shows that even people who meet that goal may be at risk of heart failure if they spend the rest of their time sitting. Even though the study involved men, the same principles likely apply to women as well."

The results of a Kaiser Permanente Southern California study that linked sedentary behavior to heart failure in men received media attention around the world in 2014.

The study, published in the fall 2014 issue of *Circulation: Heart Failure*, found that men who reported high levels of sitting and low levels of physical activity were more than twice as likely to develop heart failure compared with those who reported high physical activity and low sitting time. Even men who exercised frequently were 1.2 times as likely to develop heart failure if they sat substantially more than their less sedentary counterparts. None of the participants had prevalent heart failure at the start of the study.

Looking at a different impact of activity on heart health

Although a number of studies have established the positive impact that physical activity has on cardiovascular disease, few have looked at the relationship between physical activity and heart failure. Even less is known about the risk of prolonged sedentary behavior on heart failure.

Heart failure is a complex, progressive condition. Approximately 1 in 5 adults in the U.S. will develop heart failure in their lifetime. As the baby boomer generation grows older, the prevalence of heart failure will increase, placing escalating burden on patients, care givers, and health care systems.

"The issue of sedentary time is a new and emerging area of interest that has not been well studied," said Deborah Rohm Young, PhD, MBA, lead study author and director of Behavioral Research at the KPSC Department of Research & Evaluation.

"We don't yet know how much sedentary time is too much, but our results clearly indicate that it's a good idea to sit less and move more," Dr. Young said.

Large study uses valuable, long-term data

Researchers followed a racially diverse group of 82,000 men ages 45 years and older for 10 years. The men, who were part of the Kaiser Permanente California Men's Health Study, completed a baseline questionnaire between 2002 and 2003. Diagnostic outcomes came from Kaiser Permanente HealthConnect.

"This study takes advantage of the Department of Research & Evaluation's unique ability to do clinically relevant work using electronic health records as well as our research databases that include survey results from the California Men's Health Study cohort," said study senior author Virginia P. Quinn, PhD, a KPSC research scientist.

"Overall, this study documents yet another benefit of regular physical activity and that's a message we want to continually emphasize," said Dr. Young. "In addition, we now have another message that's equally important—sit less."

Physical activity study of adolescent girls continues with new grant

Researchers are also studying physical activity in adolescent girls. In 2014, we received a grant from the National Heart, Lung, and Blood Institute to help understand the factors that predict why girls become more or less physically active, as well as changes in sedentary behavior, as they transition into early adulthood. This study is a follow-up to the Trial of Activity for Adolescent Girls national research study.

Opposite page: Dr. Deborah Rohm Young, Jeff Slezak, and Dr. Kristi Reynolds



NCORP brings cancer trials closer to home

Network expands reach of KPSC clinical trials program

Clinical trials are integral to the development of new treatments and therapies to fight cancer. Historically, many trials have been based at university medical centers, requiring patients to travel from their home communities. That has made it harder for them to participate and receive the potential benefits of the trials.

A new National Cancer Institute initiative—the NCI Community Oncology Research Program—is bringing more clinical trials to the communities where cancer patients live.

In 2014, Kaiser Permanente was selected as one of 34 NCORP community sites across the country. We, along with other leading health care organizations, now have access to a wide range of clinical trials through NCORP and the National Clinical Trials Network.

“NCORP allows us to participate in next-generation studies that are available through the network,” said oncologist Jonathan A. Polikoff, MD, director of the Kaiser Permanente Southern California Cancer Clinical Trials Access Program. “Once a trial gets posted, we can offer it to our members.”

NCORP will enable Kaiser Permanente to expand our already-robust clinical trials program to:

- Offer cutting-edge clinical trials to patients in our Northern California, Southern California, Northwest, Colorado, and Hawaii regions.
- Participate in cancer control and prevention research.
- Conduct new research on cancer care delivery.
- Identify and address health disparities in many aspects of cancer control and cancer care.

Impact»

Kaiser Permanente received a 5-year, \$10.4 million grant from the National Cancer Institute as a member of the NCI Community Oncology Program (NCORP). Through this new program, Kaiser Permanente will join forces with other renowned health care organizations around the country to create more opportunities for cancer patients to participate in clinical trials in the communities where they live.

Our participation in NCORP will open doors to patients to take part in clinical trials at nearly 50 locations in Northern California, Southern California, Colorado, Hawaii, and Oregon. In Southern California alone, there are 15 locations from San Diego to Woodland Hills.

“NCORP allows us to participate in next-generation studies that are available through the network. Once a trial gets posted, we can offer it to our members.”

—Jonathan A. Polikoff, MD

With our large and diverse membership, we bring a unique perspective to the national program. The Kaiser Permanente regions involved in NCORP serve about 1 of every 40 cancer patients in the U.S.*

“As a medical group, our goal is to achieve excellent outcomes for our patients with cancer,” said Michael Kanter, MD, medical director, Quality and Clinical Analysis, Southern California Permanente Medical Group. “By participating in programs like NCORP, we can bring innovative clinical trials to our patients and contribute our clinical expertise to the national effort to improve cancer care and outcomes.”

NCORP opens door to groundbreaking trials

One of the clinical trials Kaiser Permanente will be able to participate in is the NCI-Molecular Analysis for Therapy Choice. The NCI-MATCH trial seeks to determine the effectiveness of treating cancers according to their genetic makeup, rather than their location.

“This is the type of advanced study that NCORP enables us to offer our patients, and that I’m most excited about,” said Dr. Polikoff. “We are looking at genomic testing to try to identify specific ‘driver mutations’ for a variety of cancers, and following that with non-chemotherapy-based treatments to target those genetic abnormalities.”

The NCI-MATCH trial is open to 2,400 clinical sites across the U.S., including NCORP sites. Patients’ cancers will be biopsied for the genetic analysis and therapy will be chosen based on that result.

Another cancer control trial, which is designed to prevent chemotherapy complications for patients, is the Preventing Anthracycline Cardiovascular Toxicity with Statins (PREVENT) study, led by Wake Forest University. PREVENT aims to determine if atorvastatin (generic for Lipitor®) decreases the chance that patients with breast cancer or lymphoma who are receiving anthracycline-based chemotherapy will develop heart and cognitive problems.

NCORP will also support research into cancer care delivery. Typical is an upcoming study to explore the financial burden that patients with colon cancer face and how it affects their care.

“NCORP brings us into closer alliance with our Kaiser Permanente colleagues in other regions and disciplines,” said Dr. Polikoff. “It promotes better partnership among medical oncology, surgical oncology, radiation oncology, and others, fostering collaboration to find better ways to prevent and treat cancer.”

*Estimate based on our membership in California, Colorado, and the Northwest as a percentage of the total U.S. population.

Opposite page: Dr. Han Koh and Dr. Jonathan Polikoff

Engaging physicians in research for 60 years

Regional Research Committee



In January 2014, Somjot Brar, MD, MPH, cardiologist at our Los Angeles Medical Center, became chair of the Regional Research Committee, succeeding Donald Fong, MD, who had served as chair since 2004.

Under Dr. Brar's leadership, the committee has been working aggressively to raise awareness of the multiple venues available to do research. The goal is to engage even more physicians in research.

"We want physicians to know all the resources that are available to support them doing research," said Dr. Brar. "We are also very involved in helping physicians develop proposals that give them the best chance of success. We want to make it easier for them to do high-quality, impactful research that affects the patients they're treating."

Application volume has more than tripled in the past year-and-a-half to an all-time high. "This increase shows that our physicians understand the value of research and are availing themselves of the resources and opportunities within Kaiser Permanente," said Dr. Brar.

A total of 29 projects were submitted to the RRC in 2014. Of those, 25 were reviewed and 20 were approved. See the next two pages for a description of the resulting projects.

Patrick Van Winkle, MD, a pediatric hospitalist at our Anaheim Medical Center and area research chair for Orange County, also emphasizes the committee's work in fostering research.

"Our goal is to help physicians start out on a good path for research," said Dr. Van Winkle. "We help them see what projects fit into the paradigm of the RRC to help them get the appropriate research assistance and statistician support for their work."

Opposite page: Dr. Prakash Mansukhani and Dr. Somjot Brar

Some recent studies that have been translated into clinical practice are described below.

Reducing acute kidney injury during cardiac catheterization

In a study led by Dr. Brar and published in *The Lancet* in May 2014, researchers assessed a new fluid protocol developed at KPSC to reduce the risk of contrast-induced acute kidney injury in patients undergoing cardiac catheterization. The new protocol resulted in a 59% reduction in kidney damage and a 68% lower rate of dialysis, heart attack, or death after the procedure, versus the risks associated with standard procedure.

The findings from this study remove much of the uncertainty around how much and how long fluids should be administered before, during, and after contrast exposure for cardiac catheterization. The protocol led to practice guidelines that are now used in Kaiser Permanente HealthConnect.

Improving prenatal detection of congenital heart disease

The rate of detection of significant congenital heart disease during gestation has been extremely low worldwide. Of those ultimately found to have significant congenital heart disease, often less than 30% are detected in a low-risk population. Denis Levy, MD, pediatric cardiologist at our San Diego Medical Center, led a study to evaluate a practice, implemented in San Diego, to increase detection of cardiac defects by assessing fetal cardiac outflow tracts shown by screening ultrasound.

The study showed that assessment of the fetal outflow tracts during an ultrasound significantly increased detection rates (59% versus 28%). Data gathered from Kaiser Permanente HealthConnect demonstrated that even higher detection rates (74% before birth and 94% before discharge from the hospital) can be achieved within Kaiser Permanente's integrated system. "Looking at outflow tract is now recommended throughout Kaiser Permanente and beyond," said Dr. Levy.



RRC-funded projects in 2014

The Regional Research Committee provides funding 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 better ways to prevent and treat common health conditions. In 2014, the committee awarded funds to the following studies.

Bone Health and Orthopedics

Knee replacement surgery: Are its outcomes altered by perpetuation of prior low-value interventions? (Principal investigator: Ronald Navarro, MD, South Bay)

Cardiovascular Disease

A randomized control trial of intensive lifestyle interventions: Determining the risk in patients with coronary artery disease with coronary intima-media thickness. (PI: Mohamed Ismail, MD, Riverside)

The Kaiser Permanente evaluation of atrial fibrillation ablation and the use of cryoballoon. (PI: Simon Kangavari, MD, Los Angeles)

Child and Adolescent Health

Medical management versus surgical intervention for pediatric parapneumonic pulmonary effusions and empyemas. (PI: Esther An, MD, Los Angeles)

Dermatology

The risk of malignancy in psoriasis patients. (PI: Benjamin Lin, MD, Resident, Los Angeles)

Digestive System Disorders/Gastroenterology

Acute diverticulitis diagnosed in outpatients: Is it irritable bowel syndrome? (PI: Anders Nyberg, MD, PhD, San Diego)

Long-term outcomes after right-sided or bilateral colonic ischemia. (PI: Robert Hye, MD, San Diego)

Emergency Care

Emergency department discharge of symptomatic gallbladder disease: Current practice patterns, high-risk patients, and health care-related costs. (PI: Anne Rutkowski, MD, South Bay)

Reduction in admissions, mortality, and readmissions for patients with pneumonia after implementation of Modified CURB-65 risk assessment guideline in the ED: a retrospective study. (PI: Michael Liu, MD, Orange County)

Eye Research

Cystoid macular edema and use of peri-operative topical non-steroidal anti-inflammatory drugs. (PI: John Paschal, MD, Baldwin Park)

Kidney Disease

Renal function before and after bariatric surgery.
(PI: Talha Imam, MD, Fontana)

Maternal and Infant/Neonatal Health

Effects of maternal exercise on the fetus of normal, obese, and diabetic mothers. (PI: Neha Trivedi, MD, San Diego)

Comparison of patient-controlled epidural analgesia with 0.15% ropivacaine and 0.1% bupivacaine with fentanyl during labor on maternal and obstetric outcomes. (PI: Patrick Roth, MD, Orange County)

Pharmacoepidemiology

Aripiprazole partial agonism at 5-HT_{2c}: A comparison of weight gain associated with adjunctive aripiprazole to antidepressants with high versus low serotonergic activities. (PI: Jessica Hazen, DO, Riverside)

Prevention and Behavior Change

Using the Exercise Vital Sign as a possible predictor for cardiovascular health. (PI: Robert Sallis, MD, Fontana)

Exercise patterns between parents and their children, is there a correlation? (PI: Stanley Setiawan, MD, Fontana)

Medical Student Fitness: Does the curriculum expand more than knowledge? A comparison study of medical student fitness to the general population. (PI: David Sugiyama, MD (resident), Fontana)

Vaccine Safety and Effectiveness

Evaluation of human papillomavirus vaccine compliance rates in adolescents and adults and factors associated with successful vaccination in Kaiser Permanente Orange County. (PI: Christina Hong, MD, Orange County)

Women's Health

A retrospective analysis of culture proven urinary tract infection after midurethral sling. (PI: Emily Whitcomb, MD, Orange County)

Opposite page: Dr. Robert Hye, Dr. Ricardo Spielberger, and Dr. Robert Cooper

Members of the Regional Research Committee as of December 31, 2014

Somjot Brar, MD, MPH
Chair, Regional Research Committee

Baldwin Park
Area Research Chair: Gregory Maletis, MD
Vice Chair: Gaurav Khanna, MD

Downey
Area Research Chair: Han Koh, MD
Vice Chair: John P. Brusky, MD

Fontana/San Bernardino
Area Research Chair: Robert Sallis, MD
Vice Chair: Renu Mittal, MD

South Bay
Area Research Chair: Bradley K. Ackerson, MD
Vice Chair: William W. Crawford, MD

Kern County
Area Research Chair: Michael J. Fassett, MD

Los Angeles
Area Research Chair: John Sim, MD
Vice Chair: Bechien Wu, MD, MPH

Orange County
Area Research Chair: Patrick J. Van Winkle, MD
Vice Chair: Edward H. Yian, MD

Panorama City/Valencia
Area Research Chair: Shireen Fatemi, MD

Riverside/Palm Springs
Area Research Chair: Brian Lim, MD

San Diego
Area Research Chair: Robert Hye, MD

West Los Angeles/Kern County
Area Research Chair: Michael J. Fassett, MD
Vice Chair: Daniel T. Lang, MD

Woodland Hills
Area Research Chair: Fredrick Ziel, MD
Vice Chair: Theodore X. O'Connell, MD

Department of Research & Evaluation
Area Research Chair: Steven J. Jacobsen, MD, PhD
RRC Operations: Usha G. Vaghiasa



RRC's roots: Kaiser Permanente's founding fathers

Medical research has been a part of Kaiser Permanente's mission from the very beginning. With the encouragement of Sidney R. Garfield, MD, Henry J. Kaiser set up the Permanente Foundation in 1942, to "perform and carry out charitable, educational, and research activities." Through this, Kaiser made it clear that research was for the public good, and he was willing to commit the financial resources of the organization to advance it.

The original idea for the foundation came from Raymond Kay, MD, a colleague of Dr. Garfield from their residency days at Los Angeles County General Hospital. In 1954, Dr. Kay, by then the executive medical director of the Southern California Permanente Medical Group, created the Regional Research Committee to help fund and centralize medical research efforts throughout the region.

Dr. Kay appointed urologist Jack Cooper, MD, of our Los Angeles Medical Center, as chairman. Dr. Cooper himself was one of SCPMG's first physician researchers. His early efforts included a search for markers to detect prostate cancer, a precursor to today's PSA test.

Physician researchers in the mid-1950s were a very dedicated group, often conducting research with no formal structure and very little financial support. The KPSC research budget for 1954 was \$10,000 (about \$87,000 in 2014 dollars). Still, physicians who wanted to conduct research were given the freedom and encouragement to do so.

"In these early days, SCPMG made a commitment that, even though the fundamental mission of Kaiser Permanente was to provide quality medical care, it would foster research," said Sheldon Wolf, MD, who succeeded Dr. Cooper as chair of the RRC in 1980. "It was a very enlightened policy."

Above: Dr. Sidney Garfield and Dr. Raymond Kay, mid-1970s

Accomplishments and Milestones



Selected findings

In 2014, 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. For a full list of 2014 publications, please see the bibliography starting on page 56.



Allergy and Asthma

Asthma exacerbation rates remained relatively constant over time, and continuous high treatment intensity was not associated with a substantially lower risk of exacerbations.

Schatz M et al. *J Allergy Clin Immunol Pract.* 2014;2(5):570-574.e1.



Bone Health and Orthopedics

Patients who have bariatric surgery before total joint arthroplasty may not receive dramatic improvements in post-operative arthroplasty surgical outcomes.

Inacio MC et al. *J Arthroplasty.* 2014;29(7):1359-1364.

When compared to younger patients, people ages 90 years and older who undergo total knee arthroplasty do not have an increased risk of complications, and their postoperative mortality rate is within the expected range for their age.

Miric A et al. *J Arthroplasty.* 2014;29(8):1635-1638.

Younger, male patients are at greater risk for deep infection after primary shoulder arthroplasty. Reverse total shoulder arthroplasty and traumatic shoulder arthroplasties also carry a greater risk for infection.

Richards J et al. *Clin Orthop Relat Res.* 2014;472(9):2809-2815.

Complex shoulder procedures (shoulder arthroplasty) are, on average, performed more efficiently by higher volume surgeons in higher volume centers.

Singh A et al. *J Shoulder Elbow Surg.* 2014;23(8):1187-1194.



Cancer

The adenoma detection rate with colonoscopy exam was inversely associated with the risks of interval colorectal cancer diagnosis, advanced-stage interval cancer, and fatal interval cancer.

Corley DA et al. *N Engl J Med.* 2014;370(14):1298-1306.

Men who are overweight or obese when diagnosed with prostate cancer are more likely to die from the condition than men of normal weight.

Haque R et al. *Obes Res Clin Pract.* 2014;8(4):e374-381.

Colonoscopies with negative findings were associated with decreased incidence of subsequent colorectal cancer, and a decrease in racial/ethnic disparities in risk of colorectal cancer after screening, compared with sigmoidoscopies with negative findings.

Wu BU et al. *Gastrointest Endosc.* 2014;80(5):852-861.



Cardiovascular Disease

A screening program for abdominal aortic aneurysms, implemented through an electronic health record, reduced the number of unscreened at-risk men by more than 50% within 15 months.

Hye RJ et al. *J Vasc Surg.* 2014;59(6):1535-1542.

Self-reported moderate-to-vigorous exercise was associated with lower blood pressure and blood glucose levels in both men and women.

Young DR et al. *Prev Chronic Dis.* 2014;11:E219.



Diabetes

The incidence of type 1 diabetes increased significantly from 2002 to 2009 among non-Hispanic white youth in all but the youngest age group of children (ages 0 through 4 years). Increases were most pronounced among children ages 5 through 9 years.

Lawrence JM et al. *Diabetes.* 2014;63(11):3938-3945.



Health Economics

Twenty-six percent of adults diagnosed with attention deficit hyperactivity disorder (ADHD) are subsequently diagnosed with at least 1 other mental health condition. Among those ADHD patients diagnosed subsequently with 2 or more mental health conditions, medical costs nearly doubled and the use of medical resources also significantly increased.

Kawatkar AA et al. *Value Health*. 2014;17(6):661-668.



Infectious Disease

More than 80% of hospitalized patients infected with *Clostridium difficile* were detected as outpatients or within the first 72 hours of hospitalization, suggesting that settings outside of the hospital may play key roles in the identification, onset, and possible transmission of the disease.

Tartof SY et al. *Mayo Clin Proc*. 2014;89(9):1229-1238.

After implementation of an antimicrobial stewardship program—including a dedicated pharmacist—at 2 pilot medical center sites, the utilization of specialized and broad-spectrum antibiotics decreased, resulting in decreases in drug costs and decreases in infection-related mortality of inpatients.

Yu K et al. *Am J Health Syst Pharm*. 2014;71(12):1019-1028.



Maternal and Infant/Neonatal Health

From 1995 to 2006 there was an increase in preterm-birth rates, a decrease in labor inductions, and a sharp decline in stillbirth, neonatal, and infant mortality rates in the U.S.

Getahun D et al. *J Perinatol*. 2014;34(11):823-829.

Pregnant women who suffer from inflammatory bowel disease were at higher risk of premature labor and other pregnancy complications. The severity of that risk, though, can depend on the subtype of the disease.

Getahun D et al. *J Perinatol*. 2014;34(6):435-440.



Neurological Disorders

Starting treatment with interferon beta or glatiramer acetate within 2 weeks of giving birth does not reduce the risk of postpartum relapse of multiple sclerosis for women who did not breastfeed, or breastfed very little. The treatment may, though, reduce the risk of subsequent relapses in the postpartum year.

Beaber et al. *Perm J*. 2014;18(1):9-13.

The incidence of clinically isolated syndrome varies by race/ethnicity and sex in a similar pattern to multiple sclerosis, strengthening the probability that the old belief that black people have a lower risk of MS is no longer true.

Langer-Gould A et al. *J Neurol*. 2014;261(7):1349-1355.



Prevention and Behavior Change

Substantial amounts of unhealthy foods and beverages were brought onto school campuses for classroom rewards, celebrations, and fundraising.

Caparosa SL et al. *Public Health Nutr*. 2014;17(6):1205-1213.



Quality Improvement

Emergency department crowding was not associated with increased mortality, but was associated with length of stay after being admitted to the hospital. The study provides justification for low boarding times—how long a patient who is being admitted to the hospital is held in the emergency room before transfer to an inpatient bed—as a meaningful measure of emergency department quality.

Derosé SF et al. *Med Care*. 2014;52(7):602-611.

Some patients develop hospital-acquired pressure ulcers regardless of their nursing care.

Omery A et al. *Nurs Manage*. 2014;45(4):36-43.



Vaccine Safety and Effectiveness

There may be immunogenetic differences underlying vaccine-associated febrile seizures compared with other febrile seizures.

Tartof SY et al. *Vaccine*. 2014;32(22):2574-2581.

The herpes zoster vaccine continues to be effective in protecting older adults against shingles, even after they undergo chemotherapy.

Tseng HF et al. *Clin Infect Dis*. 2014;59(7):913-919.

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:

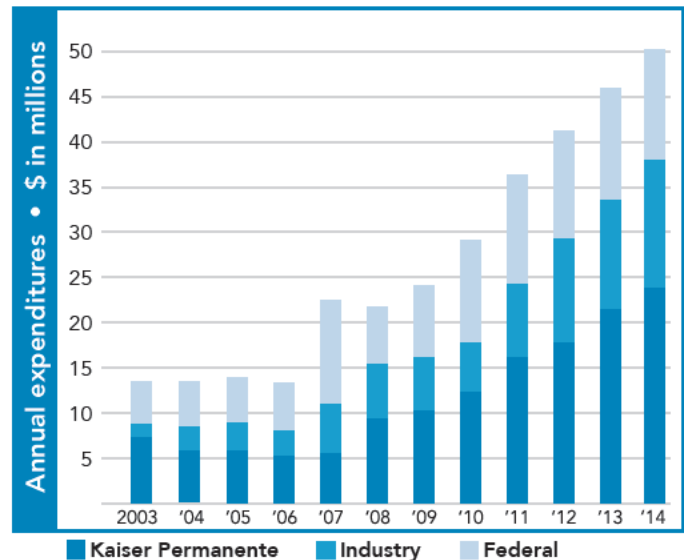
\$50.4 million (up from \$46.1 million in 2013)

Federal grants: more than \$12.7 million

Industry contracts: nearly \$14.1 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 and Safety Research.

Kaiser Permanente Southern California Research program financial trend



2014 grants and awards

New grants/contracts awarded in 2014 will fund research at Kaiser Permanente Southern California over a period of years.



2014 grant submissions

Grants submitted: 180

Grants awarded: 154



New grants (all years)

Direct costs: \$13.5 million

Indirect costs: \$4.9 million

Total: \$18.4 million

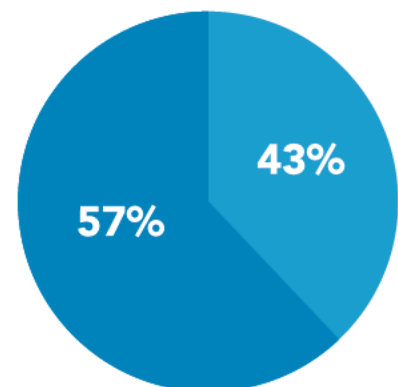
Continued grants (all years)

Direct costs: \$6.1 million

Indirect costs: \$3.2 million

Total: \$9.3 million

Prime vs. subcontract grant proposals



In 2014, Kaiser Permanente Southern California was the lead or "prime" institution for 57% of all grants and contracts submitted, and was the subcontractor institution for the remaining 43%.

Featured 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 2014.

Sleep apnea and chronic kidney disease

The National Institute of Diabetes and Digestive and Kidney Diseases awarded an Exploratory/Developmental Research Grant (R21) to KPSC to study if sleep apnea is a novel, modifiable risk factor for chronic kidney disease.

Sleep apnea is a disorder that interrupts breathing repeatedly during sleep. The condition shares a similar risk profile to CKD, including hypertension and diabetes, the 2 most common causes of end-stage kidney disease. Sleep apnea can also harm the cardiovascular, central nervous, and endocrine systems.

This study will determine if people diagnosed with sleep apnea lose kidney function faster than those who do not have the condition. Researchers will also study if positive airway pressure therapy, an effective treatment for sleep apnea, helps to prevent kidney function loss in those with sleep apnea.

Stephen F. Derose, MD, MSHS, is the principal investigator. His co-investigators are Muna T. Canales, MD, a nephrologist in Gainesville, Florida; and Paul E. Peppard, PhD, an epidemiologist in Madison, Wisconsin. KPSC clinical collaborators are Mark P. Rutkowski, MD, and Dennis Hwang, MD.

Potential impact: Findings may influence treatment for CKD. If sleep apnea causes or worsens CKD, treating it might prevent kidney disease or stop it from worsening.

Vaccination strategies to prevent flu

The National Institute on Aging awarded a Research Project Grant (R01) to KPSC and UC Santa Cruz to evaluate the effectiveness of the nation's influenza vaccination strategy.

Each year, between 5 and 20% of the U.S. population contracts influenza. In a typical year, complications from the flu lead to 200,000 hospitalizations and 30,000 deaths. The influenza vaccine has the potential to greatly reduce this public health burden.



“This study has the potential to substantially alter the way we care for patients with CKD.”

— Stephen F. Derose, MD, MSHS

Current strategies focus on vaccinating certain high-risk groups, such as the elderly and those with serious health conditions. Researchers will study if focusing on groups that are at high risk of exposing others—but not at a high risk of developing severe illness themselves—would be more effective than the current approach.

Hung Fu Tseng, PhD, MPH, and Carlos Dobkin, PhD, professor at UC Santa Cruz, are the principal investigators.

Potential impact: Findings may improve effectiveness of national vaccination strategies to prevent influenza.

Disparities in bladder cancer treatment

The National Cancer Institute (NCI) awarded an Exploratory/Developmental Research Grant (R21) to KPSC to study disparities and trends in the use of a wide range of bladder cancer treatment practices.

Bladder cancer is the 8th most common cause of cancer-related death among men and the 13th among women in the U.S. It is also the most expensive cancer to treat on a per-patient basis. Effective treatments do exist, but are not always used optimally.

Our researchers will compare recommended and actual treatment practices by patient sex, race/ethnicity, and age.

Kim N. Danforth, ScD, MPH, is the principal investigator. KPSC co-investigators include Aniket A. Kawatkar, PhD, MS; Stephen Williams, MD; and Ronald Loo, MD.

Potential impact: Identified care gaps may indicate opportunities for future quality improvement efforts to improve care and reduce disparities.

Adipokines in development of type 2 diabetes

The National Institute of Diabetes and Digestive and Kidney Diseases awarded a Research Project Grant (R01) to KPSC to study how adipokines—hormones secreted by fat tissue—contribute to development of type 2 diabetes.

Pro- and anti-inflammatory adipokines are in balance in the circulatory systems of healthy people. Obesity can lead to an increase in pro-inflammatory adipokines. This can cause fat tissue to become insulin resistant. Higher levels of pro-inflammatory adipokines can also affect the beta cells that make insulin, accelerating their dysfunction and death.

Researchers will measure adipokine levels in the blood of patients at risk for type 2 diabetes. They will combine these data with information on obesity, insulin resistance, and beta cell function, as well as genetic backgrounds and lifestyle characteristics.

Mary Helen Black, PhD, MS, is the principal investigator. KPSC co-investigators include Anny Hui Xiang, PhD, and Corinna Koebnick, PhD, MSc. Tom Buchanan, MD, chief of the Division of Endocrinology and Diabetes at USC, is also a co-investigator.

Potential impact: Findings may identify targets for the development of new and novel diagnostic, prognostic, and therapeutic approaches to prevent and treat type 2 diabetes.



Care improvement research

KPSC's Care Improvement Research Team was created in 2012 to identify and answer research questions that help promote better care, improved affordability, and better health.

In 2013, CIRT launched a new funding mechanism for incubator projects that aim to improve care delivery. The program continued in 2014, providing funds for the following three projects:

The virtual visit for gestational diabetes

This study will evaluate "virtual office visits" for women with gestational diabetes. Participants will use home monitors to collect blood glucose values and blood pressure, weight, and fetal heart rate information. During a virtual prenatal care visit, the patient and her physician will discuss her results by phone. This will take the place of a medical office visit on alternating weeks.

David Sacks, MD, is the principal investigator. Jean M. Lawrence, ScD, MPH, MSSA, is a co-investigator. Mitch Rabbi, MD, and Michael Swiernik, MD, are clinical champions for the project.

Use of low-value cancer care services

Investigators will explore oncologists' perceptions about the use of unnecessary surveillance biomarker tests for breast cancer patients. They will then develop, implement, and explore the effectiveness of strategies to decrease the use of the tests, which have been shown to be of low value.

Erin E. Hahn, PhD, MPH, is the principal investigator. Joanne Schottinger, MD, is the clinical lead.

New model of cancer survivorship care

Once cancer patients complete primary treatment, they often see both an oncologist and their primary care provider for follow-up care. Investigators will evaluate a model of care that uses a PCP trained in cancer survivorship.

Carly Parry, PhD, MSW, was the principal investigator on this study until leaving KPSC in March 2015. Erin E. Hahn, PhD, MPH is the current principal investigator. Joanne Schottinger, MD, is the clinical lead.

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	32
Clinical trials investigators	74
Associate investigators	8
Post-doctoral research fellows	6
Support staff	330



Our top research areas

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



Scholarly publications in 2014: 416

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	214



Physicians and employees

Physicians	6,000
Nurses	21,000
Employees	64,000

Southern California membership (as of January 2015)



Members	3.8 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.

Sex

Female	52%
Male	48%

Age

19 years & younger	25%
20–44	34%
45–64	27%
65 & older	14%

Race

Hispanic or Latino	42%
White	36%
Asian/Pacific Islander	11%
Black or African-American	9%
Other	2%

Celebrating our

RESEARCH

team

In October 2014, we hosted a Celebration of Research in Anaheim, California. During half-day workshops and a full-day symposium, KPSC researchers and clinicians had an opportunity to share recent findings and discuss future research. More than 200 scientists, clinician researchers, and research staff attended the 2-day event.

It was a day dedicated to the kind of research we do in our region—research that makes a real difference in health.

We had—and have—a lot to celebrate. Throughout the event, there were dozens of examples of how our research is helping Kaiser Permanente innovate and provide better care.

It all starts with people who want to make an impact

At the top of the list of things to celebrate are the people who form our research community. People come from all over the country (and the world) because they want be part of a different kind of research program: one that makes an impact on health.

Our research scientists and clinician investigators are at the forefront of our program. With their exceptional mix of inquisitiveness, expertise, and altruism, they continually seek new discoveries that will transform the future of health.

Our research team's expertise crosses multiple disciplines and spans many research areas, empowering us to ask and answer a wide range of important health questions. Together with our clinical collaborators and quality improvement partners, our work is changing the way people inside and outside of Kaiser Permanente promote health.

Expanding our team to make an even bigger impact

A research program like ours requires a large pool of talent. That pool continued to grow in 2014. We added more than 60 people in Pasadena and throughout Southern California, including scientists, post-doctoral research fellows, clinical trials staff, biostatisticians, programmers, research associates, project managers, IT staff, and administrative assistants.

Research support staff, clinical trials staff, biostatisticians, and programmers carry out much of the day-to-day work behind our innovative research. They help collect, analyze, and interpret the data and information that lead to findings that can be used to improve care delivery and health outcomes.

Our shared services teams play a vital role in our program's success. They keep our IT environment secure, manage our research databases, improve operational efficiency, handle administrative needs, keep financial systems compliant and grant submissions moving, and get the word out about our high-impact research.

**To our team: Each of you make a difference every day.
For that, we celebrate you.**

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: Prostate disease, vaccine safety, immunogenetics, and many chronic diseases.
- In 2014: Dr. Jacobsen published more than 30 studies. He was senior author on many including articles that focused on the effectiveness of the herpes zoster vaccine, the outcomes of robotic-assisted radical prostatectomies, and the impact of over-treatment and under-treatment of blood pressure on kidneys and mortality.



Michael K. Gould, MD, MS | Director of Health Services Research and Implementation Science

- Dr. Michael Gould conducts both externally funded and operationally focused research in 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 2014: Dr. Gould published articles about the implementation of lung cancer screening that influenced clinical policy inside and outside of Kaiser Permanente, including a clinical practice review in *The New England Journal of Medicine*.



William J. Towner, MD, FACP, FIDSA | Regional Physician Director for 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 2014: Dr. Towner published research on immunodeficiency and risk of heart attack among people who were HIV-positive, and hepatitis B testing and vaccination among adults with sexually transmitted infections.



Anny Hui Xiang, PhD | Director 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, and obesity.
- In 2014: Dr. Xiang published research on diabetes and metabolic syndrome among Mexican-Americans, recruitment of families for an obesity study, and physical activity and hospital readmission risk among those with COPD.



Deborah Rohm Young, PhD, MBA | Director of Behavioral Research

- Dr. Deborah Young conducts physical activity intervention trials for adults and adolescents, and also studies how physical inactivity and excess sedentary time are associated with cardiovascular risk.
- Areas of interest: Impacts and barriers to physical activity, health disparities, and cardiovascular risks.
- In 2014: Dr. Young published one study on the effects of physical activity and sedentary time on the risk of heart failure, and another on physical activity trajectories among adolescent girls.



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 2014: Dr. Brar worked on studies focused on the prevention of acute kidney injury in patients undergoing cardiac catheterization.



Elizabeth A. McGlynn, PhD | Director, Kaiser Permanente Center for Effectiveness and Safety Research

- Dr. Elizabeth McGlynn is responsible for the strategic direction and scientific oversight of the Center for Effectiveness and 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 2014: Dr. McGlynn published a framework for creating a person-centered quality score.

Research scientists



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

- 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 2014: 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 Biostatistician III

- 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 2014: Dr. Adams published research on what makes good quality measures, barriers in delivering cancer care, and the potential dangers of testosterone therapy.



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

- Dr. Mary Helen Black is a biostatistician/genetic epidemiologist who focuses on genetic and environmental contributions to diabetes, obesity, and cardiovascular disease.
- Areas of interest: Genetic associations, gene-environment interaction, pharmacogenetics, comparative effectiveness.
- In 2014: Dr. Black was awarded an R01 to examine adipokines and their interaction with genetic variation in the development of diabetes. She studied dietary patterns related to early markers of cardiovascular disease, and validation of an algorithm to identify pediatric diabetes in electronic medical records.



Chun Chao, PhD, MS | Research Scientist II

- Dr. Chun Chao is a cancer epidemiologist who focuses on generating knowledge to guide clinical practices and informing guideline development related to cancer care.
- Areas of interest: Adolescent and young adult cancers, lymphoid malignancies, and cervical cancer prevention and screening.
- In 2014: Dr. Chao investigated immunization providers' attitudes and barriers/facilitators for HPV vaccine administration for cervical cancer prevention, examined factors associated with survival of lymphoma in adolescents and young adults, and studied myelosuppressive chemotherapy-induced complications.



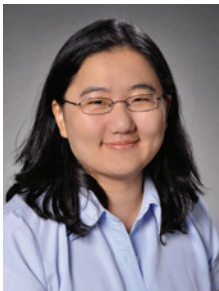
Craig Cheetham, PharmD, MS | Research Scientist II

- 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 2014: Dr. Cheetham co-authored articles on drug and vaccine safety during pregnancy, in addition to articles on the treatment of gout.



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

- 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 2014: 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

- 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 2014: Dr. Danforth was lead investigator on a grant with the goal of identifying quality care gaps and disparities in the treatment of bladder cancer.



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

- Dr. Stephen Derose's research focuses on primary and secondary prevention of chronic disease, and addressing questions regarding clinical care delivery and outcomes.
- Areas of interest: Sleep disorders, chronic kidney disease, cardiovascular disease, and emergency department outcomes.
- In 2014: Dr. Derose received a National Institute of Diabetes and Digestive and Kidney Diseases grant to determine whether treatment for sleep apnea affects kidney disease progression. He was also principal investigator on a study examining how the use of a PAP machine by those with sleep apnea affects acute care utilization.



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

- 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 2014: Dr. Getahun's research showed that ulcerative colitis was significantly associated with pregnancy complications, and that despite an increase in preterm births among twins, there was a sharp decline in the deaths of infants and unborn babies.



David Glass, PhD | Operational Research Scientist III

- Dr. David Glass uses both 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 2014: Dr. Glass researched the impact of breaking down the barriers to primary care services, member reactions to physician video encounters in a retail setting, and capturing end-of-life preferences.



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

- Dr. Erin Hahn is a health services researcher who uses both qualitative and quantitative methods to explore health care quality and variations in care.
- Areas of interest: Quality of care in oncology, clinical guideline implementation, and delivery system science.
- In 2014: Dr. Hahn examined quality of care for early-stage breast and prostate cancer patients, examined underlying reasons for use of unnecessary tests for breast cancer survivors, and explored a new model of cancer survivorship care.



Reina Haque, PhD, MPH | Research Scientist II

- Dr. Reina Haque is a senior cancer epidemiologist and scientific advisor for the Cancer Registry. Her research explores cancer prognosis, survivorship, and treatment effects.
- Areas of interest: Pharmacoepidemiology, molecular markers for prognosis, breast cancer.
- In 2014: Dr. Haque served on grant review panels, including the U.K. Breast Cancer Campaign. She published papers on cardiovascular disease risk in breast cancer survivors, impact of androgen deprivation treatment on prostate cancer mortality, and the effect of certain medications on cancer.



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

- Dr. Sharon Hudson is a behavioral scientist who uses qualitative and quantitative methods to evaluate psychosocial determinants of health and behavior. She also has an additional role of engaging physicians in research.
- Areas of interest: Individual-, physician-, and system-related factors affecting adherence with medication and medical guidelines.
- In 2014: Dr. Hudson was co-investigator on a qualitative analysis of Kaiser Permanente providers' perceptions regarding HPV vaccination. She also began work on a program of research in ophthalmology.



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

- 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 2014: Dr. Kawatkar published research that determined 26% of adults diagnosed with ADHD are subsequently diagnosed with at least 1 other mental health condition.



Corinna Koebnick, PhD, MSc | Research Scientist II

- Dr. Corinna Koebnick is an obesity epidemiologist whose research focuses on children and young adults. She also leads 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 2014: Dr. Koebnick was principal investigator of a study examining the impact of bariatric surgery on cancer incidence in severely obese adults.



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

- 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, as well as predictors of prognosis and comparative effectiveness of MS therapeutics.
- In 2014: 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

- 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, and psychosocial implications of type 1 and type 2 diabetes among children and young adults; gestational diabetes mellitus; use of telemedicine.
- In 2014: Dr. Lawrence's publications included trends in incidence of type 1 diabetes and the use of electronic health records to study diabetes in children and adults.



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

- 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 2014: Dr. Lugg worked on research focused on mortality rates in a vaccinated population, undervaccination in the U.S., and impact of delays in obtaining childhood vaccination.



Brian S. Mittman, PhD | Research Scientist III

- 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 quality and outcome-improvement strategies.
- In 2014, Dr. Mittman conducted research focused on improving care for bladder cancer surgery patients, studied patient transitions between hospital care and care at home and other settings, and improved shared decision-making for prostate cancer.



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

- Dr. Huong Nguyen is focused 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 2014: Dr. Nguyen refined and pilot tested a patient-centered physical activity coaching intervention model that is being used in a pragmatic trial to improve outcomes for patients with COPD.



Carly Parry, PhD, MSW | Research Scientist II*

- Dr. Carly Parry is a behavioral and social scientist, and health services researcher with a background in the development, evaluation, dissemination, and implementation of evidence-based programs in chronic illness and cancer.
- Areas of interest: Health services, cancer survivorship, processes and models of care, applied research and implementation, chronic illness, aging, and life course.
- In 2014: Dr. Parry published a study that detailed an action plan for translating cancer survivorship research into care.

*Dr. Parry left KPSC in 2015 to work as a senior program officer at PCORI.



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

- Dr. Virginia Quinn is a health services and behavioral health researcher focused on cancer prevention, screening, and quality of care.
- Areas of interest: Colorectal and cervical cancer screening, diet, physical activity, and sedentary behavior.
- In 2014: Dr. Quinn was a co-principal investigator in Optimizing Colonoscopy & Fecal Immunochemical Tests for Community-based Screening (COLOFIT) study; Kaiser Permanente Southern California site principal investigator for the Cancer Research Network; and co-investigator in studies focused on bladder cancer, patient outcomes, and colorectal cancer screenings.



Kristi Reynolds, PhD, MPH | Research Scientist II*

- 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 2014: Dr. Reynolds was principal investigator on research examining statin intolerance and other factors that impede optimal treatment of lipid disorders in patients at high risk for cardiovascular disease.

* Dr. Reynolds was appointed Associate Director of Epidemiologic Research in 2015.



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

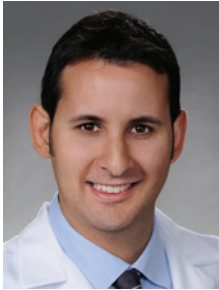
- Dr. Adam Sharp is an emergency medicine physician and health services researcher who works to identify gaps between best and current practices for common acute conditions, and to evaluate intervention strategies to facilitate best practices.
- Areas of interest: Implementation science and acute care coordination.
- In 2014: Dr. Sharp published studies on youth violence prevention, the impact of emergency department volume, and a framework to understand the value of emergency care.



Hung Fu Tseng, PhD, MPH | Research Scientist III

- Dr. Hung Fu Tseng uses large data resources to study vaccine effectiveness and safety in real-world settings.
- Areas of interest: Pharmacoepidemiology, outcomes research, and evidence-based medicine.
- In 2014: 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 shingles vaccine, and was the principal investigator for a Phase IV clinical trial assessing the safety of a meningococcal vaccine.

Post-doctoral research fellows



Josh Banerjee, MD, MPH | Post-Doctoral Research Fellow

- Area of interest: Ambulatory redesign.
- In 2014: Dr. Josh Banerjee investigated communication patterns between primary care and specialty physicians during the co-management of chronic disease.



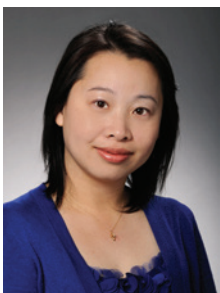
Nirupa R. Ghai, PhD, MPH | Post-Doctoral Research Fellow

- Areas of interest: Colorectal, bladder, and head and neck cancers.
- In 2014: Dr. Nirupa Ghai led a study evaluating cancer incidence among solid organ transplant recipients. She was a co-investigator in a study of bladder cancer recurrence. She continued her work in colorectal cancer screening through the Kaiser Permanente Population-based Research Optimizing Screening through Personalized Regimens (PROSPR) Research Center.



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

- Areas of interest: Molecular and genetic cancer epidemiology; effects of cancer treatment and cancer survivorship issues, especially in adolescents and young adults.
- In 2014: Dr. Leila Family conducted several pharma-sponsored studies to quantify and predict the risk of chemotherapy-induced anemia and neutropenia in Kaiser Permanente Southern California cancer patients.



Rulin C. Hechter, MD, PhD | Post-Doctoral Research Fellow*

- Areas of interest: HIV prevention and care management, substance abuse, and vaccine safety and effectiveness.
- In 2014: Dr. Rulin Hechter was the principal investigator of a Centers for Disease Control and Prevention-funded study to evaluate syphilis treatment response in an HIV-syphilis coinfecting population, and the site principal investigator on 2 National Institutes of Health-funded studies.

*Rulin Hechter was appointed Research Investigator MD I in 2015.



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

- Areas of interest: Modifiable factors associated with the etiology, course, and treatment of chronic disease.
- In 2014: 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.



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

- Areas of interest: Vaccine-preventable diseases and hospital-acquired infections.
- In 2014: Dr. Sara Tartof was lead author on a study that showed that more than 80% of hospitalized patients who tested positive for *Clostridium difficile* were tested outside the hospital or within the first 72 hours of hospitalization.

Associate 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 2014: Dr. Sirichai Chayasirisobhon led 2 clinical trials exploring the efficacy, safety, and effectiveness of medications for seizures.

R. James Dudl, MD, Associate Investigator

- Areas of interest: Population-level cardiovascular disease prevention and diabetes.
- In 2014: Dr. James Dudl studied population glucose control in patients with diabetes.

Donald S. Fong, MD, MPH, Associate Investigator

- Areas of interest: Retinal diseases, ocular safety of systemic medications.
- In 2014: 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 2014: 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 2014: Dr. George Longstreth conducted research into acute colonic diverticulitis, and examined benefits of different screening methods for colon cancer.

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 2014: Dr. David Sacks explored the relationship between different levels of gestational glucose intolerance as defined by the International Association of Diabetes and Pregnancy Study Groups and clinical outcomes. He is co-investigator on the Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study and is co-editing a text on diabetes 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 2014: Dr. Michael Schatz was first author on several research articles, including one that examined the change in asthma control over time, and another that looked at asthma exacerbation rates in adults.

Lauren P. Wallner, PhD, MPH, Adjunct Investigator

- Areas of interest: Understanding the determinants, outcomes, quality of care and utilization of health services associated with cancer and other chronic diseases.
- In 2014: Dr. Lauren Wallner published research on the association of body mass index and prostate cancer mortality.

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 2014: Dr. Robert Zeiger was first author on several asthma studies, including one on the effect of medication adherence on asthma burden and another on risk factors associated with asthma exacerbations in children.

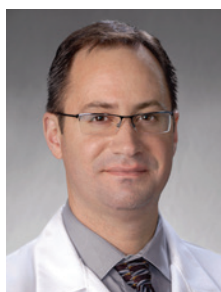
Clinical trials investigators

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 2014 are listed by specialty on page 53.



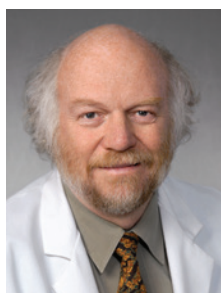
Robert M. Cooper, MD | Pediatric Hematology/Oncology, Los Angeles Medical Center

- 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 2014.
- Areas of interest: Treatment, survivorship, and end-of-life issues of children, adolescents, and young adults with cancer.
- In 2014: Dr. Cooper was the principal investigator for Kaiser Permanente Southern California's program for cord blood collection for public banking.



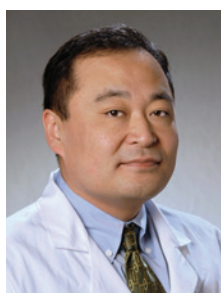
Michael R. Girvigian, MD | Radiation Oncology, Los Angeles Medical Center

- 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 2014: Dr. Girvigian led clinical trials on prostate cancer and vocal cord cancer, and co-authored a study on treatment of skull base meningioma.



Robert J. Hye, MD, FACS | Vascular Surgery, San Diego Medical Center

- Dr. Robert Hye is the area research chair and leads the Vascular Surgery Research Program for Kaiser Permanente Southern California at the San Diego Medical Center.
- Areas of interest: Carotid artery disease, aortic aneurysmal disease, peripheral arterial disease, and hemodialysis access.
- In 2014: Dr. Hye was lead author on several studies, including one of a screening program for abdominal aortic aneurysms that was integrated into an electronic health record, and reduced the number of unscreened at-risk men by more than 50% within 15 months.



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 2014: 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, and the history of colposcopy.
- In 2014: Dr. Lentz led clinical trials, co-authored studies on ovarian cancer, published a study about same-day discharge for gynecologic cancer surgeries, 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 2014: Dr. Menefee was co-author on studies focusing on robotic surgery and vaginal reconstructive surgery, urodynamics, and urinary incontinence. Additionally, he was principal investigator on a multi-center 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. He is active in many clinical trials and performs database research with Dr. Lisa Nyberg in the hepatology research unit in San Diego.
- Areas of interest: Liver disease and other gastrointestinal disorders, such as peptic ulcer disease and celiac disease.
- In 2014: Dr. Nyberg led 2 clinical trials evaluating therapies for hepatitis C virus infection and chronic hepatitis B virus infection. He also led a study on celiac disease.



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 2014: Dr. Nyberg conducted 2 large principal investigator-initiated epidemiological studies, and 6 clinical trials including a principal investigator-initiated clinical trial that increased access to hepatitis C treatment for more than 100 Kaiser Permanente members. Her study results have been internationally recognized and have resulted in changes in clinical practice.



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, which oversees oncology clinical trials for the prevention and treatment of cancer in adults.
- Areas of interest: Establishing new standards of treatment for cancer, prevention of breast and colon cancer, and improving the quality of life in patients undergoing cancer therapy.
- In 2014: Dr. Polikoff led clinical trials involving the safety and efficacy of medications to treat breast, bladder, lung, and pancreatic 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 2014: Dr. Spielberger was involved in the hematologic malignancies clinical trials at City of Hope, the acute leukemia group at City of Hope, and the 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 nutritional support impact on survivorship.
- In 2014: Dr. Vasilev led clinical trials including one focused on treatments for ovarian, peritoneal, and fallopian tube cancers; and another on the identification of cervical disease.

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 Contreas, 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 Manthana, 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 Lubber, 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

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

Jerry Cheng, MD, Los Angeles Medical Center

Robert Cooper, 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

Jordan Ziegler, MD, San Diego 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

Jeffrey Hsu, MD, Los Angeles Medical Center, Vascular Surgery

Robert Hye, MD, San Diego Medical Center, General Surgery – Vascular

Publications



2014 Publications

Scientists, clinicians, and other health professionals from Kaiser Permanente Southern California authored scholarly publications on a wide range of topics in 2014, from aging and geriatrics to women's health. Kaiser Permanente Southern California authors are noted in **bold**.



Aging and Geriatrics

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Page 5

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Page 29

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Page 37

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Page 55

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