UCSF Department of Medicine
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SAN FRANCISCO GENERAL

Improving Cancer Screening, Diagnosis, and Treatment

There are many exciting advances in cancer therapies, but these are most effective when cancer is diagnosed as early as possible. This issue highlights faculty and staff who are spearheading improvements in cancer screening, diagnosis and treatment through multi-disciplinary engagement and impressive collaboration.

Designing a Better Lung Cancer Screening System

"Lung cancer is the leading cause of cancer-related death, but unfortunately most of our patients are diagnosed at more advanced stages of disease," said George Su, Professor of Medicine in the ZSFG Division of Pulmonary and Critical Care Medicine. "We're really trying to push lung cancer diagnosis towards earlier stage disease, when five-year survival is much better."

One obstacle is the complexity of determining lung cancer screening eligibility. The U.S. Preventative Services Task Force has nuanced criteria for lung cancer screening. The criteria include that patients be between 50 and 80 years old, and are current smokers or have quit within the last 15 years with at least 20 "pack-years" of smoking history. But some patients have a history of quitting and resuming smoking several times that makes it difficult to calculate pack-years.

Even if the patient meets all three criteria, there is another hurdle to jump. To obtain Medicare reimbursement for a low-dose computed tomography (CT) lung scan, providers and patients must discuss risks and benefits and decide together whether to proceed, a process called "shared decision-making." Providers must also document the conversation. , Carving out time for this discussion and documenting during a 15-minute appointment can be difficult and time-consuming.

"Historically, lung cancer screening referrals were made in an ad hoc manner, without any structured navigator tool [in the EHR]," said Dr. Su. "There were many problems, including under-identifying [eligible] patients, the complexity of determining whether patients met guideline-based eligibility requirements, challenges facilitating and documenting shared decision-making conversations, and inconsistent referrals for patients who were eligible for screening."

Dr. Su and his colleagues conducted an audit of patient records from 2023-2024. "22% of patients referred for a low-dose CT scan weren't actually eligible, and an additional 27% had insufficient documentation such as missing pack-year or quit date," he said. Nearly half of patients were either inappropriately referred for screening, or their eligibility couldn't be verified. "Our Radiology Department was overwhelmed, and it's a demonstrable waste of our system's resources," he said. This presents challenges when we are trying to use limited resources wisely

Designed to Help, Not Hinder

To address this challenge, Dr. Su and a multidisciplinary team designed, tested, and refined a lung cancer screening clinical decision support tool within Epic that helps us navigate this complex process more easily. They began in June 2024 by engaging all stakeholders. The team mapped out

George Su, MD

conditional logic, which is the underlying "if-then" flowchart of required actions and next steps to get a patient through the eligibility screening process. They also created passive banner alerts (best practice advisories) which appear on the side of the screen rather than in the middle, and only when they are relevant to a specific patient.

They sought end users' input in designing an interface which supports rather than hinders functional workflows. "We got feedback about where the technology didn't work as intended, was confusing, or created blockades" said Dr. Su. "We were also mindful of factors like 'click fatigue.'" In the Richard Fine People's Clinic (RFPC) – one testing site – nurses and medical assistants brainstormed ways to capture pack-year information, via a paper questionnaire, patient portal, or a waiting room kiosk. "That could help relieve some of the cognitive and time load for providers" said Dr. Su.

The lung cancer screening navigator tool was rolled out across the SFHN in February 2025. It has already increased guideline-concordant lung cancer screening referrals from about 50% to more than 95%. "Reducing inappropriate referrals and opening up screening slots for patients who actually meet the baseline requirements is a high priority, and allows us to practice responsible stewardship," said Dr. Su.

Dr. Su and his colleagues are working on additional features: a risk calculator that will automatically pull in information, and prepare a customized prediction of how useful lung cancer screening would be; a suggested script for shared decision-making; and a lung care summary that pulls all lung cancer-related events and activities into a timeline, rather than making providers hunt through a patient's chart for milestones.

Teamwork is Critical

Dr. Su praises the many contributors to this project, including members of the Divisions of General Internal Medicine, Pulmonary and Critical Care Medicine, and Hematology and Oncology; the Department of Radiology and Biomedical Imaging; the Epic Design Team, Radiology Information Technology, the SFDPH Office of Health Informatics; and the project's executive sponsors - hospital and health system leaders in primary and specialty care.

"For this work to be impactful, it requires that technology be thoughtfully designed and equitably implemented," said Dr. Su. "The only way that happens is by engaging a breadth of providers, end users, design partners, and leaders. It gives me great appreciation for the people I work with. It can be messy, challenging work, but it's worth it."

Lung Cancer: From Diagnosis to Treatment

Another important advance in lung cancer care is the creation of the ZSFG Thoracic Multidisciplinary Conference.

"Historically, our patients have had challenges getting complete diagnostic workups and accessing scans and tests," said thoracic oncologist Ana Velázquez Mañana, MD, MSc, Assistant Professor of Medicine in the ZSFG Division of Hematology and Oncology. She helped create the Conference. "This tumor board brings together all the stakeholders and standardizes how we do patient workups to ensure that they are expedited, concordant with guidelines, and support high-quality care. Having the conversation with everyone in the same room allows us to review imaging tests together, discuss challenging cases, and come up with a plan."

Ana Velázquez Mañana, MD, MSc

Each week, a multidisciplinary group meets for an hour to discuss cases. Its members include Dr. Velázquez Mañana, a pulmonary nurse practitioner, Mollie Hudson, PhD, NP-C, MSN, MS; a thoracic surgeon; chest radiologists, a radiation oncologist, and a pathologist.

Because surgery is important in early lung cancer treatment, the expertise of Dr. Melissa Coleman, Assistant Professor in the UCSF Division of Adult Cardiothoracic Surgery, is critical to success. "If we have a patient with a concerning nodule and think they are a great surgical candidate, we can get a lot of the pre-surgical workup done beforehand, present the case to Dr. Coleman, and she may decide to remove the nodule without needing to a do a biopsy, and run the pathology afterwards," said Dr. Hudson, who organizes and coordinates the weekly tumor board meetings. "Similarly, if a patient has been admitted, sometimes the chest radiologists can squeeze them in for a biopsy [during their hospital stay]…. Because we all work together so closely, we know each other's cadences and rhythms, and can anticipate the objective measures each specialty will want."

Choreographing Care Across Sites

Responding to a lung nodule or initial lung cancer diagnosis is like an intricately choreographed ballet, tailored to each patient's circumstances. "It's like a dance in which there are dozens of things that are supposed to happen," said Dr. Velázquez Mañana. Much of the care choreography falls to Dr. Velázquez Mañana and Dr. Hudson. They take the lead on coordinating voluminous work required to order diagnostic tests and interventions, and shepherd patients through the logistical maze of accessing care.

For example, patients need to undergo lung biopsy and receive a positron emission tomography/computed tomography (PET/CT) scan, a diagnostic test not available at ZSFG. That requires patients to be referred to UCSF Health, obtain insurance authorization, and navigate obtaining an appointment.

"These are complicated forms that require a lot of codes, and the biggest challenge is that our electronic health record and UCSF's don't connect with each other," said Dr. Velázquez Mañana. "We need to fax or email forms, or pick up the phone and call the UCSF radiology scheduler. There's no way to know about these communication gaps unless you've encountered them and figured out workarounds."

They must also relay details about upcoming UCSF appointments to patients themselves. "Once we get an appointment time for the patient, I often bring them in for a visit to explain how to prepare for a PET/CT scan, which requires them to fast for six hours," said Dr. Hudson. "It's critical because if they don't fast, the study is cancelled and it may be another month before they can get another appointment." That complexity is heightened

Mollie Hudson, PhD, NP-C, MSN, MS

Clinicians and staff providing Colon Cancer screening education materials and information to patients.

because most SFHN patients do not have a UCSF MyChart account. In addition, many do not speak English, lack access to transportation or a smartphone, or struggle with mental health, substance use, or housing security.

"I've had patients who have delayed diagnostics and treatment for six months while waiting for a PET scan, because they missed their appointment and only later did their primary care physician or another provider notice the scan hadn't happened," said Dr. Velázquez Mañana. "That leads to delays in care, during which cancer can grow and metastasize."

The Thoracic Multidisciplinary Conference tries to knit together the pieces of a fragmented health care system. "It's like a trapeze, with patients jumping from one swing to the next," said Dr. Hudson. "Without the tumor board, many of them are at risk of falling through the cracks at each stage in the diagnostic pathway. You need someone who holds them at each step. For example, if a patient is already coming in for a clinic visit or pulmonary function testing, if I know from our tumor board meeting that they have an upcoming PET/CT scan, I can educate them on how to prepare."

The tumor board meetings also help the group coordinate other aspects of care. For example, in recent years there have been major advances in lung cancer care, including more targeted therapies. These require molecular testing to determine the genetic signature of a patient's cancer, a process that requires a four-week turnaround. "If someone is extremely sick when they arrive in my clinic and I don't have those results, I need to push back treatment decisions by four weeks or give them chemotherapy when they may not necessarily need it," said Dr. Velázquez Mañana.

Tailoring Care for Patients

The Thoracic Multidisciplinary Conference fast-tracks the most urgent cases. "Cancer is scary and therefore seems urgent for everyone, but there is a degree of acuity based on each case," said Dr. Velázquez Mañana. "Most of our cases caught on screening are Stage 1A. They are important, but it's not an emergency – they can wait a couple of weeks to get a PET/CT scan while they undergo other testing. By contrast, other cases have aggressive, rapidly growing cancer and need imaging within two weeks. When we think of the health care system as a whole and all the patients who are waiting for tests, it's helpful to have knowledgeable people who can stratify cases."

After biopsy and diagnosis, every patient was referred to an oncologist. "Partly, we thought that someone should 'own' the plan and guide their care," said Dr. Velázquez Mañana. "But some patients, like those with one small, isolated tumor, need to go straight to surgery or radiation oncology. They don't need further treatment besides periodic surveillance, as directed by their primary care physician, pulmonologist, or surgeon. Adding the extra step of seeing me just delayed their care, and also took up appointment slots that were urgently needed by other patients. That was definitely a learning experience."

The group pools expertise for complex cases, such as whether a patient with limited life expectancy due to other health issues should pursue lung cancer treatment. "We take into context the patient and everything else that they're going through to come up with a plan that makes sense," said Dr. Velázquez Mañana.
The tumor board also identifies patients who are eligible for clinical trials of novel therapeutics or might benefit from targeted therapy instead of standard chemotherapy. Since Dr. Velázquez Mañana works at both ZSFG and UCSF Health, she serves as a bridge between the two health care systems. Because of her expertise in lung cancer, she knows the nuances of new treatments and what clinical trials and studies are available." "I'm proud that we get molecular testing for everyone, and can implement things like neoadjuvant immunotherapy," she said."

Collaboration is essential. "Good communication, trust, and a lot of buy-in have been key," said Dr. Hudson. "We're all trying to unburden one another as much as we can, and I'm very grateful for the working relationships I've developed with other tumor board members." Seeing the way we impact patient care and ensuring our patients get adequate workups and treatment in a timely way has been the most rewarding aspect for me as a physician," said Dr. Velázquez Mañana.

Improving Colorectal Cancer Screening

Colorectal cancer is the second leading cause of cancer-related deaths in the U.S. The good news is that it is highly preventable with screening and highly treatable when caught early.

Emily Wistar, MD

"Colorectal cancer screening is one of our driver metrics, and it can be challenging to get to goal," said Emily Wistar, MD, Medical Director of the Richard Fine People's Clinic (RFPC). "At RFPC, all our quality improvement work is laser-focused on equity. We thought not just about how we can improve colorectal cancer screening levels for our whole patient population, but specifically how we could improve them for our Black/African American patients, who experience higher colorectal cancer mortality rates. We wanted to right that equity gap."

According to the U.S. Preventive Services Task Force guidelines, everyone should start testing for colorectal cancer starting at age 45. Within the San Francisco Health Network (SFHN), most

Emily Wistar's QI Analyst, Ghezal Saffi, during their FIT challenge kickoff

patients start by taking a fecal immunochemical test (FIT), a simple at-home test that patients send in to check for blood in the stool. If the FIT is positive, their doctor then refers them for a colonoscopy. "There are a number of steps from when a patient is due for a test to when cancer screening is completed, and there is attrition at every step," said Dr. Wistar. "We've been doing work on every step to improve overall screening rates."

Internal medicine residents from the Class of 2024 chose improving colorectal cancer screening rates as their residency quality improvement (QI) project. They conducted a root cause analysis, developing a one-page step-by-step guide with photos for completing and returning a FIT. They also translated the guide into Chinese and Spanish.

With grant support from the San Francisco Cancer Initiative (SF CAN), RFPC also focused their QI efforts on improving colorectal cancer screening rates in March 2025, coinciding with Colorectal Cancer Awareness Month. Led by RFPC Clinical QI Lead Andreas Mitchell, MD, MPP, and RFPC QI Analysts Ghezal Saffi, MS, and Ivet Avila Gonzalez, the clinic launched a monthlong incentive project.

The QI team shared the project goals with clinic staff: If they got 160 FITs returned by the end of March, exceeding any monthly total from the preceding year, the clinic would get a cupcake celebration. Similarly, if they collected 17 FITs from Black/African American patients, breaking the previous monthly record, the clinic would celebrate with croissants. The QI team created a poster with "thermometers," providing feedback to show progress towards these FIT return goals.

"There were already a lot of things built into our clinic structure to help people get FIT tests when they need them," said Dr. Wistar. If they are due for a FIT, it is listed as a care gap in their chart, and medical assistants are trained to give patients a FIT. Medical assistants received additional coaching to ensure they felt comfortable teaching patients about how to complete and return FITs. "Capacity building and assessing staff comfort levels really matters," said Dr. Wistar. The clinical team also reminded patients that returning their FIT would automatically enter them in a quarterly raffle for a $50 gift card, which was reinforced by MyChart messages.

RFPC's efforts were successful: by the end of March, 199 FITs had been returned – 39 more than their overall goal. That included 23 FITs from Black/African American patients, which was 6 more than their equity goal. "Andreas sent out an email saying, 'Congratulations, everyone! We crushed our goal!'" said Dr. Wistar. The clinic celebrated with both cupcakes and croissants. "Everyone responded with such excitement and energy," she said. "One piece of feedback our staff always shares is that recognition is really important. This was one way we could recognize hard work and spotlight the things we're doing well."

Helping Patients Get to the Finish Line

Of course, getting FITs returned is just the first stage of completing screening. Patients who have a positive FIT need to have a colonoscopy to take a closer look at the colon and remove any polyps. Research shows that missing a colonoscopy after a positive FIT doubles the risk of colorectal cancer-related death.

But this involves a complex chain of events, which loses patients at each step: a patient's provider must refer them for a colonoscopy, the colonoscopy must be scheduled through the ZSFG Division of Gastroenterology, and patients must properly prepare for and complete the colonoscopy. Currently, only about half of SFHN patients with a positive FIT make it all the way through this process.

To address this challenge, Anne Rosenthal, MD, Professor in the ZSFG Division of General Internal Medicine, led an RFPC workgroup of residents, a fellow, and an RFPC QI analyst. Together they developed a positive FIT workflow in partnership with Ma Somsouk, MD, MAS, Professor in the ZSFG Division of Gastroenterology. The team studied the length of time between positive FIT to referral and then completion of colonoscopy.

They also conducted a patient survey focusing on Black/African American patients with a positive FIT. Most reported that talking with a doctor

The patient education table at the Zero In on Colon Cancer event at ZSFG

or nurse in person or by phone about their FIT results and next steps would be more helpful than just getting a MyChart message or letter in the mail. "Most patients wanted someone to explain the meaning of a positive FIT, the importance of a colonoscopy, and how to do the bowel prep, along with written instructions," said Dr. Wistar. Interestingly, fewer patients identified transportation to the procedure or needing to take time off work as obstacles.

RFPC enlisted one of their licensed vocational nurses, Eileen David, LVN, to serve as a FIT navigator. She runs monthly reports of patients with a positive FIT who still need to complete a colonoscopy. If a patient's primary care physician has not yet ordered one for them, she reminds them that their patient had a positive FIT and asks if they want to make a referral. She also talks with the patient about their FIT results and the need for a colonoscopy.

RFPC is exploring other ways to improve colonoscopy completion rates, including whether they can directly schedule a colonoscopy during a patient visit or via the FIT navigator when she calls patients. RFPC is also training providers to add the positive FIT to a patient's problem list so it stands out in a patient's chart rather than getting buried in the notes, and is working to consistently share the recently developed FIT and colonoscopy educational materials.

ZSFG has also held public awareness events. Shreya Patel, MD, MPH, Assistant Professor of Medicine in the ZSFG Division of Gastroenterology, and Edgar Corona, MD, MPH, UCSF Gastroenterology Fellow, led the Zero In on Colon Cancer event on March 19, 2025 (#ZSFGColonHealthHero). It featured a giant inflatable model of a colon which people could walk through to learn more about the risks, prevention, and early detection of colon cancer, as well as patient education information in English, Spanish, and Chinese, free T-shirts, and refreshments.

"It's been so important to turn our focus to one driver metric at a time, doing a deep dive to think through it, communicate clearly with the clinic why it's important, and work concertedly on it," said Dr. Wistar. "Andreas has been an amazing leader of these efforts. He's really taught me how to break down all the steps required for a patient to get from Point A to Point B, and to develop countermeasures at each step. It's so rewarding to set a goal, meet it, and celebrate our work to keep our population healthy. That's what primary care is about, and the excitement around that has been wonderful."

-Elizabeth Chur

Editors: Neil Powe, Leonard Telesca, Ali Cunningham

Key members of the ZSFG Gastroenterology team with the large, inflatable colon to help educate patients about the importance of colon cancer screening (left to right): Lakshmi Subbaraj, GI fellow; Pooja Dharwadkar, GI attending; Justin Sewell, GI attending, Shreya Patel, GI attending, Edgar Corona, GI fellow.

SPOTLIGHT

Honors, Awards, & Appointments

Mike Reid, MD, MPH, MA, HIV/ID & GM, has been awarded the UCSF Chancellor Award for Public Service. This award recognizes outstanding individuals for their local or global community contributions and service involvement beyond the scope of their individual functions at UCSF

Angela Suen, MD, Pulmonary, is a recipient of a Watson Scholar Fund award for 2025. The intent of this grant is to support her long-term career development and to invest in her success as a faculty member.

Jonathan Davis, MD, Cardiology, was recognized with this year's ZSFG Exceptional Physician Award at the ZSFG Annual Medical Staff Meeting on June 4th in recognition of his outstanding work in medicine.

Christy Camp, RN, MS, has been awarded the Spirit of DOM Award. The SPIRIT of DOM Award is designed to recognize staff members who exemplify the UCSF PRIDE Values and make the Department of Medicine (DOM) and UCSF a better place to work.

2025 SOM STAR Achievement Individual Awards

We would like to congratulate the following winners from ZSFG DOM:

- Ivet Avila Gonzales (General Internal Medicine)
- Ali Cunningham (Health, Equity, and Society)
- Ellie Gladstone (Health, Equity, and Society)
- Adriana Najmabadi (Nephrology)
- Jessica Osorio (Health, Equity, and Society)
- Kenny Perez (Health, Equity, and Society)
- Viva Tai (HIV, ID, and Global Medicine)