FRED HUTCH
Hutchinson Institute for
Cancer Outcomes Research

ANNUAL REPORT

2020

From the Directors

Scott Ramsey
MD, Ph.D.
Director

Veena Shankaran
MD, MS
Co-Director

2020 was an extraordinarily challenging year for our community of cancer patients, family members, healthcare providers and public health representatives. HICOR investigators devoted significant time and resources to face these challenges, with new studies and reports aimed at addressing the SARS COV-2 pandemic, and the healthcare inequities and racism that so deeply affect the health of our patients and our society.

In Washington State, HICOR was charged by the Department of Health to collect statewide data to assess the impact of COVID-19 on cancer care, with specific emphasis on underserved populations. This effort is funded by the Washington State CARE Fund. On the national front, Dr. Gary Lyman was involved in early efforts to monitor the clinical impact of the pandemic through his leadership in the COVID-19 and Cancer Consortium.

This year, we expanded our cancer care quality measurement program to compare quality measures between the Medicaid and commercially insured populations with the goal of understanding disparities in care. We continue to collaborate with our stakeholders to develop actionable, meaningful performance measures.

The economic stress of the pandemic has only highlighted the critical need to directly address the financial burden of cancer on patients and families. We are delighted that this year, Dr. Veena Shankaran launched an NCI-funded national trial to evaluate a proactive financial navigation program.

Our early career investigators are making their voices heard across the country. In July, Dr. Rachel Issaka shared a powerful perspective in the Journal of the American Medical Association outlining the multi-level actions necessary to dismantle structural racism in medicine, including recognition of racism as a public health emergency, training healthcare professionals to recognize and respond to racism, and building a diverse healthcare workforce.

HICOR faculty and staff sincerely hope that our colleagues and patient communities throughout the nation are healthy and safe. We approach 2021 with hope, purpose, and a commitment to continue collaborating with our community to improve outcomes for all cancer patients.

Scott Ramsey

Veena Shankaran

COVID-19

Tackling the Pandemic

Understanding the Clinical Impact of COVID-19 on Cancer Patients

As the pandemic emerged in early 2020, **Dr. Gary Lyman** along with colleagues at Fred Hutch and around the U.S. swiftly mobilized to form the **COVID-19 and Cancer Consortium (CCC19)**, a national grassroots registry that aims to understand the unique effects of COVID-19 on patients with cancer. Over 120 cancer centers participated by sharing treatment pathways and clinical information for cancer patients diagnosed with COVID-19. Now with data on more than 8,000 patients with cancer and confirmed COVID-19, CCC19 has reported several key findings:

- Among patients with cancer and COVID-19, 30-day all-cause mortality was high, and associated with both universal risk factors and those unique to patients with cancer.
- There was no survival benefit from treatment with hydroxychloroquine or high-dose corticosteroids, alone or in combination.
- Black patients were approximately half as likely as white patients to receive remdesivir, a drug that may lessen disease severity or reduce the duration of infection, raising concerns about disparities in access to treatment.

Tracking the SARS-CoV-2 Virus in Washington State

Dr. Scott Ramsey is leading an effort to create a statewide database—known as the **Washington state COVID-19 and Cancer Research Data Repository**—containing information about the impact of COVID-19 on cancer patients with a focus on underserved groups. Initial analyses highlighted differences in telehealth use between the commercially insured versus Medicaid populations. In the commercially insured population, in-person physician visits decreased in the pandemic period but were replaced by telehealth visits. Among the Medicaid population, however, the decrease in physician visits was not replaced by telehealth visits, suggesting a need to investigate access to telehealth in this population. This project is funded by the Washington State Andy Hill Cancer Research Endowment (CARE) Fund.

Ensuring community access to COVID-19 testing and vaccination

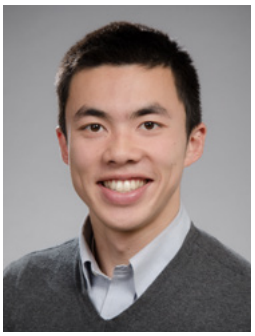
Washington State has developed a **COVID-19 testing program** in community pharmacies located in regions with high COVID-19 infection rates. **Dr. Parth Shah** is leading a project to rapidly evaluate program implementation, including measuring the rate of uptake and program cost in participating pharmacies. The goal is to understand if the program can facilitate increased access to testing for community members, especially in rural and remote areas. Dr. Shah is also collaborating with the **COVID-19 Prevention Network** to improve community awareness and engagement with Phase 3 COVID-19 vaccine trials. The overarching goal is to ensure greater access to cancer vaccines, particularly in disadvantaged communities.

7TH ANNUAL

Value in Cancer Care Summit

HICOR's annual summit took up the most important issues impacting the cancer care community in 2020: COVID-19 and healthcare disparities. Over 175 attendees joined the virtual annual event on Monday, November 9, 2020. The Summit featured a comparison of quality measures between the commercially insured and Medicaid populations, discussed the impact of COVID-19 on cancer care in Washington state, and resulted in calls to action to achieve health equity in cancer care.

Ensuring Quality Cancer Care for Vulnerable Populations



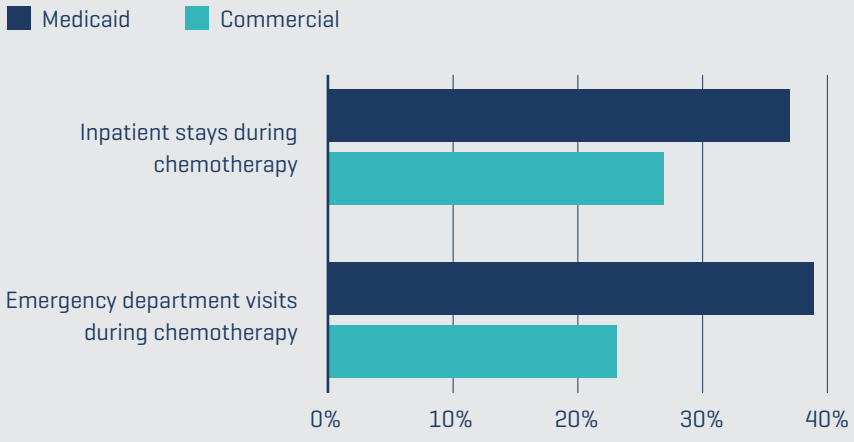
Dr. Christopher Chen, MD, MBA
Medical Director, Medicaid
Washington State Health Care Authority

The focus on Medicaid-insured cancer patients in Washington state is an important first step in understanding key elements of cancer care and outcomes for a population with significant economic, social, and medical challenges. Our aim was to highlight system-wide issues that may be impacting performance and outcomes.

One key finding: Medicaid-insured patients undergoing chemotherapy have a significantly and substantially higher rate of emergency department visits and hospitalizations than similar patients enrolled in commercial health plans. Future research will examine the drivers of this higher rate of emergency department visits.

Dr. Christopher Chen, Medical Director for Medicaid at the Washington State Health Care Authority, collaborated on the interpretation and presentation of results. "HICOR's performance measures provide key insight into aspects of care that we can target for quality improvement," said Dr. Chen "Our next step is to design interventions to improve care delivery."

Hospitalization During Chemotherapy



COVID-19 Pandemic Widening Disparities in End-of-Life Care

The COVID-19 pandemic dramatically reduced family access to hospitals and created new barriers to home hospice care, raising concerns about how the pandemic has impacted cancer patients' place of death and end-of-life home hospice support. **Dr. Laura Panattoni**, HICOR's performance measurement expert, found that Medicaid patients were significantly more likely to die at home without hospice care after the onset of the pandemic, compared to pre-COVID care. Further analyses by the Health Care Authority found that the trend of increased numbers of patients dying at home without hospice was not reflected more broadly across deaths from any cause.

Laura Panattoni, PhD
Senior Staff Scientist

"The disparity in home hospice use raises concerns that the pandemic disproportionately worsened end of life experience for low income patients with cancer," said Panattoni. "These preliminary results suggest a need to further investigate how health systems can improve home-based end-of-life care for low-income patients during pandemics."

FINANCIAL TOXICITY

A Prescription for Relief From Cancer-related Financial Hardship

In spring of 2021 HICOR Co-Director Dr. Veena Shankaran will partner with the SWOG Cancer Network to test a novel program designed to curb cancer-related financial hardship. The five-year randomized study will examine whether offering free financial navigation services to patients diagnosed with late-stage cancer and their spouse caregivers can prevent or reduce household financial hardship. The study will take place within the NCI Community Oncology Research Program (NCORP), a national network of community-based oncology practices that partner with researchers to conduct efficient and high-quality clinical research studies in local settings.

CREDIT is the progression of nearly a decade of HICOR research documenting the incidence of financial hardship in cancer patients and its devastating outcomes. "It's a problem that is all too common for families facing a cancer diagnosis. This will be the first randomized trial testing an intervention that aims to directly alleviate the financial burden on patients and their families," said Dr. Shankaran. "If successful, CREDIT will provide evidence for financial navigation as part of high-quality cancer care in the United States and highlight the need for interventions at the system and policy levels."

> "Why does cancer-related financial toxicity exist in the first place? Can't we do better? If we show the system is so broken that people need all this assistance just to get appropriate cancer care, shouldn't we change the system?"
>
> **— Dr. Veena Shankaran**

Dr. Shankaran is hopeful that by targeting family financial wellbeing the intervention will have a greater chance of success. "Given the interrelatedness of patient and spouse financial status, we hypothesize that interventions that can be implemented at the household level may have the best chance of improving financial outcomes." The study will also compare the program's effects on patient and spouse financial worry, quality of life, and the number of hospital and emergency department visits during treatment between couples receiving financial navigation and a control group. "The hypothesis is that patients in the intervention group may have less hospital and ER use, better access to therapies and that caregivers will be less burdened," Shankaran said.

CREDIT Financial Navigation Program

Financial literacy training

- Video series about cancer costs and financial concerns during treatment

Offered to all study participants

Financial counseling

- Financial and legal planning
- Budgeting, medical expense management

Nonmedical cost assistance

- Employment, disability
- Debt management
- Food, transportation, housing, utilities

Medical cost and healthcare coverage assistance

- Copay assistance
- Insurance navigation

Services provided monthly for 6 months to participants randomized to receive the study intervention

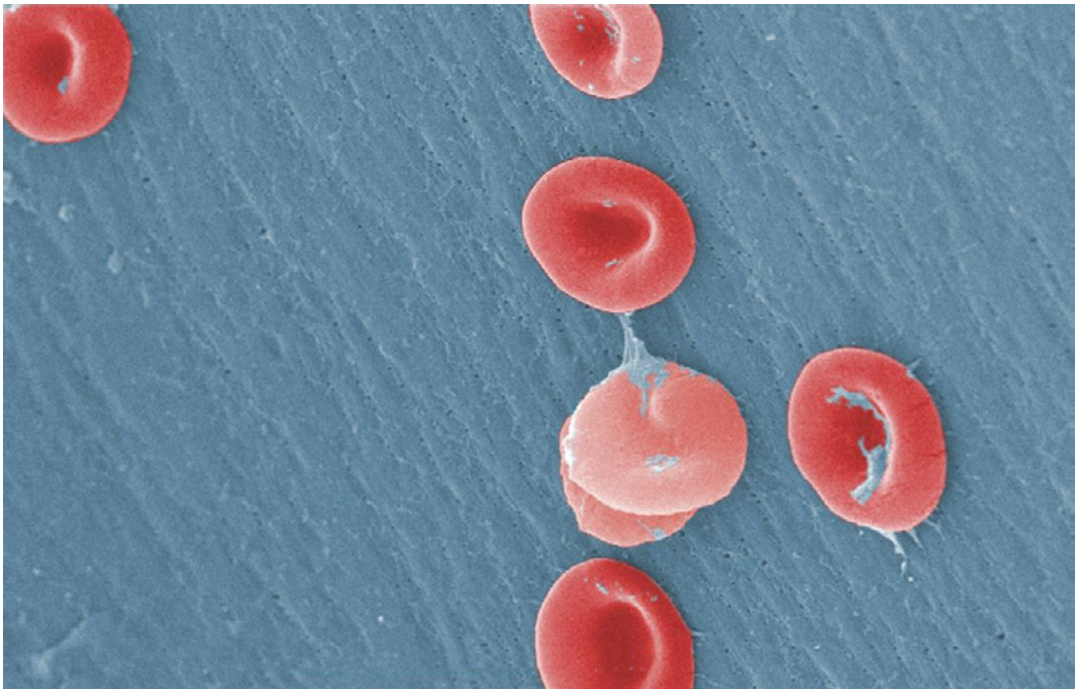
ON THE HORIZON

Accelerating Development of Genetic Therapies to Cure Sickle Cell Disease

ABOUT 100,000 PEOPLE IN THE U.S. ARE AFFECTED BY SICKLE CELL DISEASE (meaning two sickle cell genes or one sickle cell gene and another abnormal gene), a disproportionate percentage of which are Black or Hispanic. About one in 13 Black or African Americans have sickle cell trait (one sickle cell gene) and are at risk for having a child with the disease. The inherited blood disorder leads to many medical complications and shortens the life spans of people affected by about 20-30 years.

The disease can lead to episodes of excruciating pain, stroke, heart, lung, and kidney damage. The trauma of the pain and repeat hospitalizations for young children can cause stigmatization, depression, and social isolation. For people living with the disease, early intervention and access to care are vital for their long-term prognosis, physically and psychologically.

The National Institutes of Health's National Heart, Lung, and Blood Institute (NHLBI) has funded The Sickle Cell Clinical and Economic Impact Analysis (CEIA) Consortium to identify and support the most promising genetic therapies to cure sickle cell disease. The CEIA Consortium brings together HICOR, the CHOICE Institute at the UW School of Pharmacy, NHLBI, and The Emmes Corporation.



A microscopic image of red blood cells from a boy with sickle cell disease. Image courtesy of CDC/Sickle Cell Foundation of Georgia: Jackie George, Beverly Sinclair

The teams at HICOR, led by Dr. Scott Ramsey, and the CHOICE Institute, led by Dr. Anirban Basu, are tasked with developing models that will estimate the clinical and economic benefits of cures for sickle cell disease over the lifetime of the patients. The goal is to clarify the potential long-term benefits of promising new curative therapies.

The two teams will develop health economic models that simulate the outcomes of new sickle cell therapies. The models will investigate comorbidities and complications, quality of life, health care utilization, and costs over a lifetime horizon for a cohort of patients. The investigators will conduct extensive literature review and use datasets from both public and private sources, which will likely make these models the most comprehensive ever to be built around sickle cell disease in the United States.

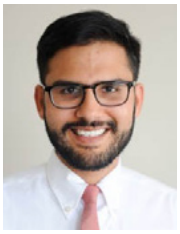
> "Our findings can help optimize strategies to use gene therapy to treat patients with severe sickle cell disease with the objectives of reducing disease complications, extending survival, and improving quality of life. Our team is very excited to apply our expertise in economic modeling to address these important issues."
>
> **— Dr. Scott Ramsey**

TRAINEES

Developing the Next Generation of Cancer Care Delivery Researchers

HICOR is committed to advancing high quality research that drives clinical practice and policy change, and to developing the next generation of leaders in cancer outcomes research.

Hematology-Oncology Fellow Spotlight



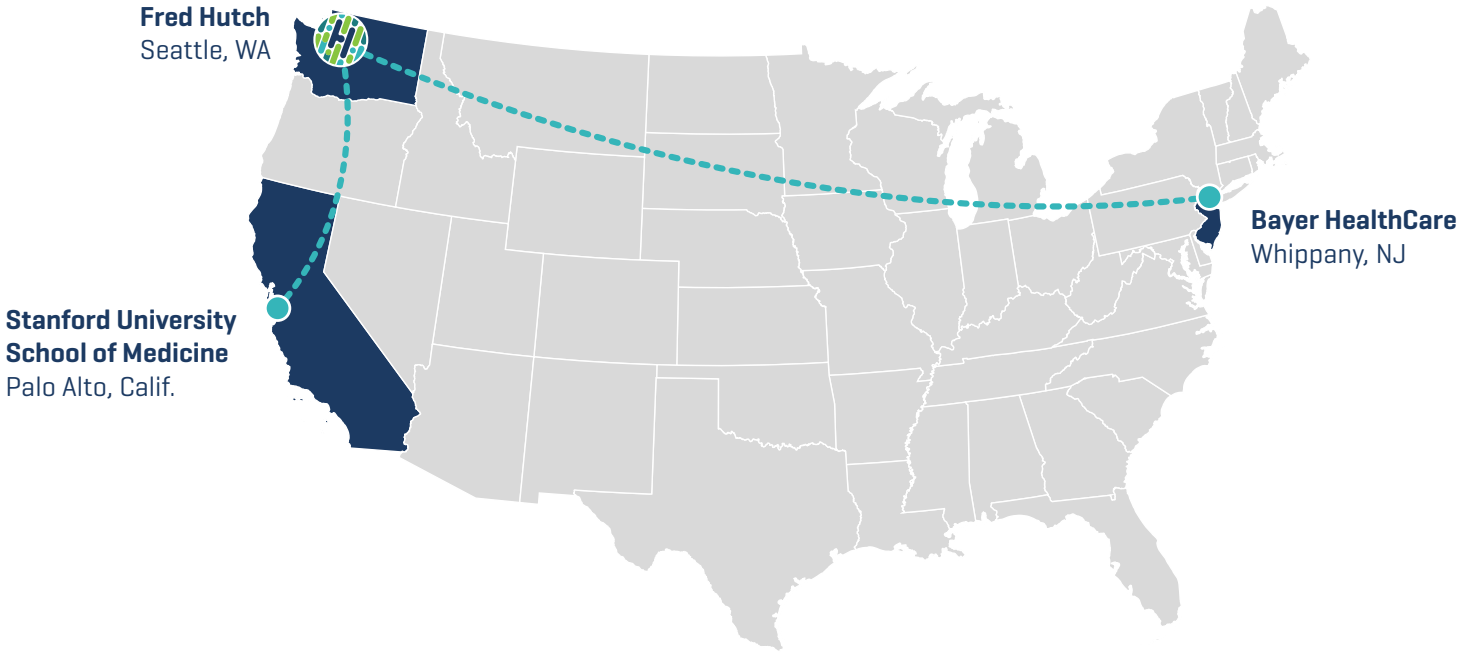
HICOR collaborates closely with the Fred Hutch Hematology-Oncology Fellowship Program to identify clinical trainees with interest in health outcomes, comparative effectiveness, and cancer care delivery research, and provide mentorship and training to two clinical fellows annually.

Dr. Ali Khaki completed his hematology-oncology fellowship at Fred Hutch and the University of Washington in December 2020. As a fellow, he devoted his research to treatment outcomes in patients with urothelial cancers and solid tumors, and worked closely with Drs. Veena Shankaran, Gary Lyman, and Petros Grivas studying health care utilization and costs for patients with advanced cancer. He was invited to present a poster on "Real-world prognostic model for overall survival in patients with advanced urothelial cancer treated with immune checkpoint inhibitors" at the American Society of Clinical Oncology's 2020 conference. In February 2021, Dr. Khaki will join the Stanford University School of Medicine faculty as Assistant Professor in the Division of Medical Oncology, with a focus on genitourinary malignancies.

Bayer Fellow Spotlight

HICOR has partnered with Bayer Healthcare on a health economics and outcomes research (HEOR) fellowship to develop leaders in HEOR research. Trainees are mentored in advanced techniques pertaining to HEOR evaluation of cancer pharmaceuticals and related health care technologies. The fellowship combines one year of academic research experience in the Public Health Sciences Division of Fred Hutch with one year of industry experience at Bayer HealthCare in New Jersey.

Dr. Yuxian Du is a health economist and health services researcher focusing on improving access and quality of patient care. He recently completed the final year of a joint research fellowship with Fred Hutch and Bayer, and is currently a Manager of Research Strategy at Bayer Pharmaceuticals. During his fellowship Dr. Du undertook research on the cost-effectiveness of CAR-T cell therapy, the financial effects of cancer diagnosis, and the development of psychometric measures of financial anxiety and clinical relevance for cancer patients.



Selected Publications

Yezefski TA, Le D, Chen L, Speers CH, **Chennupati S**, Snider J, Gill S, **Ramsey SD**, Kennecke HF, **Shankaran V**. Comparison of Treatment, Cost, and Survival in Patients With Metastatic Colorectal Cancer in Western Washington, United States, and British Columbia, Canada. JCO Oncol Pract. 2020 Apr 16;JOP1900719.

Goulart BHL, Unger JM, **Chennupati S, Fedorenko CR, Ramsey SD**. Out-of-pocket costs for tyrosine kinase inhibitors and patient outcomes in EGFR- and ALK-positive advanced non-small-cell lung cancer. JCO Oncol Pract. 2020 Dec 7:OP2000692.

Issaka RB, Rachocki C, Huynh M, Chen E, Somsouk M. Standardized workflows improve colonoscopy follow-up after abnormal fecal immunochemical tests in a safety-net system. Dig Dis Sci. 2020 Mar 31:10.1007/s10620-020-06228-z.

Issaka RB. Good for us all. JAMA. 2020;324(6):556-557. 2020 July 9.

Issaka RB, Somsouk M. Colorectal Cancer Screening and Prevention in the COVID-19 Era. JAMA Health Forum. 2020 May 13.

Issaka RB, Li L, Fedorenko C, Ko CW, Inadomi JM, **Ramsey SD**. Racial disparities in colorectal cancer mortality: the role of endoscopy wait-time and stage at diagnosis. J Racial Ethn Health Disparities. 2020 Oct;7(5):967-974.

Balzora S, **Issaka RB**, Anyane-Yeboa A, Gray DM 2nd, May FP. The impact of COVID-19 on colorectal cancer disparities and the way forward. Gastrointest Endosc. 2020;S0016-5107(20)34468-0.

Lee B, Patel S, Rachocki C, **Issaka RB**, Vittinghoff E, Shapiro JA, Ladabaum U, Somsouk M. Advanced notification calls prior to mailed fecal immunochemical test in previously screened patients: a randomized controlled trial. J Gen Intern Med. 2020 Oct;35(10):2858-2864.

Khaki AR, Li A, Diamantopoulos LN, Bilen MA, Santos V, Esther J, Morales-Barrera R, Devitt M, Nelson A, Hoimes CJ, Shreck E, Assi H, Gartrell BA, Sankin A, Rodriguez-Vida A, Lythgoe M, Pinato DJ, Drakaki A, Joshi M, Isaacsson Velho P, Hahn N, Liu S, Alonso Buznego L, Duran I, Moses M, Jain J, Murgic J, Baratam P, Barata P, Tripathi A, Zakharia Y, Galsky MD, Sonpavde G, Yu EY, **Shankaran V, Lyman GH**, Grivas P. Impact of performance status on treatment outcomes: a real-world study of advanced urothelial cancer treated with immune checkpoint inhibitors. Cancer. 2020 Mar 15;126(6):1208-1216.

FEATURED PUBLICATION

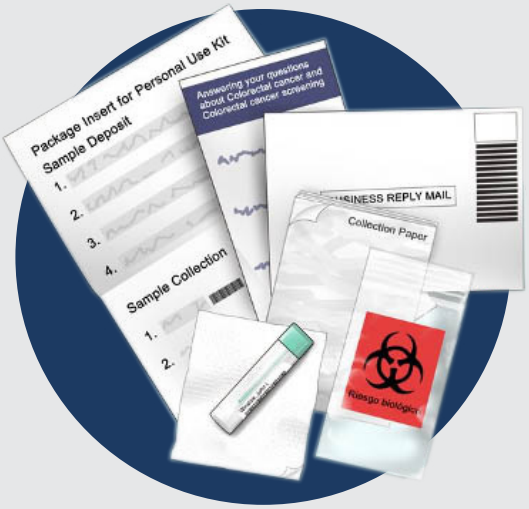
A Multilevel intervention to improve colorectal cancer screening

Issaka RB, Akinsoto NO, Strait E, Chaudhari V, Flum DR, Inadomi JM. Effectiveness of a mailed fecal immunochemical test outreach: a Medicare Advantage pilot study. Therap Adv Gastroenterol. 2020 Sep 9;13:1756284820945388.

This pilot study examined the use of fecal immunochemical tests (FIT) for colorectal cancer (CRC) screening when offered to patients by mail. 945 Medicare Advantage enrollees aged 50-79 years old who were overdue for CRC screening were mailed information about screening and a FIT kit. Over the 12-month follow-up period CRC screening rates increased by 5% and 29% of patients completed screening after receiving FIT by mail. These results suggest that mailed FIT outreach in a Medicare Advantage population is feasible, effective, and worth considering along with other system-level strategies to improve overall CRC screening participation.

This study is part of a larger effort by Dr. Issaka and fellow HICOR faculty to develop and test multilevel interventions that address barriers to screening and improve CRC outcomes, especially for medically underserved and underrepresented communities. Dr. Issaka is conducting additional research studies aimed at reducing barriers to diagnostic colonoscopy after abnormal FIT results, including investigating how a ride share program could be optimized for patients that require procedural sedation. "Screening is a way to not only prevent disease but reduce racial and economic disparities," said Dr. Issaka. "We need to close that gap so that every citizen can benefit from the advances in cancer care and prevention."

Fecal Immunochemical Test (FIT)



Selected Publications *(continued)*

Khaki AR, Xu Y, Cheung WY, Li L, **Fedorenko C**, Grivas P, **Ramsey S, Shankaran V**. Comparison of health care utilization at the end of life among patients with cancer in Alberta, Canada, versus Washington State. JCO Oncol Pract. 2020 Aug 17:OP2000217.

Kuderer NM, Choueiri TK, Shah DP, Shyr Y, Rubinstein SM, Rivera DR, Shete S, Hsu CY, Desai A, de Lima Lopes G Jr, Grivas P, Painter CA, Peters S, Thompson MA, Bakouny Z, Batist G, Bekaii-Saab T, Bilen MA, Bouganim N, Larroya MB, Castellano D, Del Prete SA, Doroshow DB, Egan PC, Elkrief A, Farmakiotis D, Flora D, Galsky MD, Glover MJ, Griffiths EA, Gulati AP, Gupta S, Hafez N, Halfdanarson TR, Hawley JE, Hsu E, Kasi A, **Khaki AR,** Lemmon CA, Lewis C, Logan B, Masters T, McKay RR, Mesa RA, Morgans AK, Mulcahy MF, Panagiotou OA, Peddi P, Pennell NA, Reynolds K, Rosen LR, Rosovsky R, Salazar M, Schmidt A, Shah SA, Shaya JA, Steinharter J, Stockerl-Goldstein KE, Subbiah S, Vinh DC, Wehbe FH, Weissmann LB, Wu JT, Wulff-Burchfield E, Xie Z, Yeh A, Yu PP, Zhou AY, Zubiri L, Mishra S, **Lyman GH**, Rini BI, Warner JL. Clinical impact of COVID-19 on patients with cancer (CCC19): a cohort study. Lancet. 2020 Jun 20;395(10241):1907-1918.

Rivera DR, Peters S, Panagiotou OA, Shah DP, Kuderer NM, Hsu CY, Rubinstein SM, Lee BJ, Choueiri TK, de Lima Lopes G, Grivas P, Painter CA, Rini BI, Thompson MA, Arcobello J, Bakouny Z, Doroshow DB, Egan PC, Farmakiotis D, Fecher LA, Friese CR, Galsky MD, Goel S, Gupta S, Halfdanarson TR, Halmos B, Hawley JE, **Khaki AR**, Lemmon CA, Mishra S, Olszewski AJ, Pennell NA, Puc MM, Revankar SG, Schapira L, Schmidt A, Schwartz GK, Shah SA, Wu JT, Xie Z, Yeh AC, Zhu H, Yu Shyr Y, **Lyman GH**, Warner JL. Utilization of Covid-19 treatments and clinical outcomes among patients with cancer: a COVID-19 and Cancer Consortium (CCC19) cohort study. Cancer Discov. 2020 Oct;10(10):1514-1527.

Lee CI, Raoof S, Patel SB, Pyatt RS Jr., Kirsch DS, Mossa-Basha M, Recht M, Carlos R. Coronavirus disease 2019 (COVID-19) and your radiology practice: case triage, staffing strategies, and addressing revenue concerns. J Am Coll Radiol.2020;S1546-1440(20)30421-X.

Lee CI, Lee JM. Identifying effective supplemental screening strategies for women with a personal history of breast cancer. Radiology. 2020 Apr;295(1):64-65.

Liao GJ, Hippe DS, Chen LE, **Lee JM**, Liao JM, **Ramsey SD, Lee CI**. Physician ordering of screening ultrasound: national rates and association with state-level breast density reporting laws. J Am Coll Radiol. 2020 Jan;17(1 Pt A):15-21.

Lowry KP, Coley RY, Miglioretti DL, Kerlikowske K, Henderson LM, Onega T, Sprague BL, **Lee JM**, Herschorn S, Tosteson ANA, Rauscher G, **Lee CI**. Screening performance of digital breast tomosynthesis vs digital mammography in community practice by patient age, screening round, and breast density. JAMA Netw Open. 2020 Jul 1;3(7):e2011792.

Lyman GH, Nguyen A, Snyder S, Gitlin M, Chung KC. Economic evaluation of chimeric antigen receptor T-cell therapy by site of care among patients with relapsed or refractory large B-cell lymphoma. JAMA Netw Open. 2020 Apr 1;3(4):e202072.

Crawford J, Denduluri N, Patt D, Jiao X, Morrow PK, Garcia J, Barron R, **Lyman GH**. Relative dose intensity of first-line chemotherapy and overall survival in patients with advanced non-small-cell lung cancer. Support Care Cancer. 2020 Feb;28(2):925-932.

Panattoni L, Phelps CE, Lieu TA, Alexeeff S, O'Neill S, Mandelblatt JS, **Ramsey SD**. Feasibility of measuring preferences for chemotherapy among early-stage breast cancer survivors using a direct rank ordering multicriteria decision analysis versus a time trade-off. Patient. 2020 Oct;13(5):557-566.

Jones SM, Henrikson NB, **Panattoni L**, Syrjala KL, **Shankaran V.** A theoretical model of financial burden after cancer diagnosis. Future Oncol. 2020 Dec;16(36):3095-3105.

Ramsey SD, Adamson BJ, Wang X, Bargo D, Baxi SS, Ghosh S, Meropol NJ. Using electronic health record data to identify comparator populations for comparative effectiveness research. J Med Econ. 2020 Nov 10:1-5.

Fiorenza S, Ritchie DS, **Ramsey SD**, Turtle CJ, **Roth JA**. Value and affordability of CAR T-cell therapy in the United States. Bone Marrow Transplant. 2020 Sep;55(9):1706-1715.

Veenstra DL, Mandelblatt J, Neumann P, Basu A, Peterson JF, **Ramsey SD**. Health economics tools and precision medicine: opportunities and challenges. Forum Health Econ Policy. 2020 Mar 5;23(1).

Shah PD, Calo WA, Gilkey MB, Boynton MH, Alton Dailey S, Todd KG, Robichaud MO, Margolis MA, Brewer NT. Questions and concerns about HPV vaccine: a communication experiment. Pediatrics. 2019 Feb;143(2):e20181872.

Calo WA, **Shah PD**, Gilkey MB, Vanderpool RC, Barden S, Doucette WR, Brewer NT. Implementing pharmacy-located HPV vaccination: findings from pilot projects in five U.S. states. Hum Vaccin Immunother. 2019;15(7-8):1831-1838.

Shankaran V, Unger JM, Darke AK, Hershman DL, **Ramsey SD**. Design, data linkage, and implementation considerations in the first cooperative group led study assessing financial outcomes in cancer patients and their informal caregivers. Contemp Clin Trials. 2020 May 30;95:106037.

Abraham P, Gricar J, Zhang Y, **Shankaran V**. Real-world treatment patterns and outcomes in patients receiving second-line therapy for advanced/metastatic esophageal squamous cell carcinoma. Adv Ther. 2020 Jul;37(7):3392-3403.

Watabayashi K, Steelquist J, Overstreet KA, Leahy A, Bradshaw E, Gallagher KD, Balch AJ, Lobb R, Lavell L, Linden H, **Ramsey SD, Shankaran V**. A pilot study of a comprehensive financial navigation program in patients with cancer and caregivers. J Natl Compr Canc Netw. 2020 Oct 1;18(10):1366-1373.

LEADERSHIP

Faculty Profiles

Aasthaa Bansal, Ph.D., M.S.

Assistant Professor, Public Health Sciences Division, Fred Hutch; Assistant Professor, HICOR; Associate Professor, School of Pharmacy, UW

Statistical Methods for Biomarker-Guided Decision-Making; Prediction Modeling; Treatment Sequencing; Comparative Effectiveness Research

abansal@uw.edu

Rachel Issaka, M.D., M.S.

Assistant Professor, Clinical Research & Public Health Science Divisions, Fred Hutch; Assistant Professor Internal Medicine, UW

Colorectal Cancer Screening; Healthcare Disparities and Outcomes Research; Population Health; Comparative Effectiveness Research

rissaka@fredhutch.org

Gary Lyman, M.D., M.P.H.

Senior Lead, Healthcare Quality and Policy, HICOR; Professor, Public Health Sciences & Clinical Research Divisions, Fred Hutch; Professor, Medicine, Public Health & Pharmacy, UW

Clinical Oncology Research; Clinical Practice Guidelines; Cancer Policy

glyman@fredhutch.org

Janie M. Lee, M.D., M.Sc.

Associate Professor, Department of Radiology, UW; UWMC Director of Breast Imaging, Affiliate Investigator, HICOR

Breast Cancer Screening; Surveillance, Imaging Technology Performance and Outcomes Assessment

jmlee58@uw.edu

Evan Hall, M.D. M.Phil.

Assistant Professor, Clinical Research Division, Fred Hutch; Assistant Professor, School of Medicine, UW

Medical Oncology; Patient-centered Treatment; Cancer Health Economics

evanh@seattlecca.org

Christoph Lee, M.D., M.S.

Health Services UW; Radiologist, SCCA; Affiliate Investigator, HICOR

Breast Cancer Screening; Comparative Effectiveness Research; Imaging Technology Assessment

stophlee@uw.edu

Parth Shah, Pharm.D., Ph.D.

Assistant Professor, Public Health Sciences Division, Fred Hutch

Health Behavior and Behavioral Medicine; Health Services Research; Implementation Science; Pharmacy; Cancer Prevention and Control

pshah@fredhutch.org

Laura Panattoni, Ph.D.

Senior Staff Scientist, HICOR

Cancer Care Delivery Research; Performance Measurement; Implementation Costs; Health Economics

lpanatto@fredhutch.org

Cristina Merkhofer, M.D. M.H.S.

Medical Oncologist, SCCA; Acting Instructor, Division of Medical Oncology, UW

Patient-centered care; Healthcare Policy; Patient Outcomes Research

cmerkhof@fredhutch.org

Bernardo Goulart, M.D., M.S.

Associate Professor, Clinical Research Division, Fred Hutch; Associate Professor, UW; Attending Physician, SCCA

Thoracic and Head and Neck Malignancies; Cancer Outcomes Research and Health Economic Evaluations

bhg@uw.edu

LEADERSHIP

External Advisory Board

Peter Bach, MD, MAAP

Director, Center for Health Policy and Outcomes, Memorial Sloan Kettering Cancer Center

Arnold Milstein, MD, MPH

Clinical Excellence Research Center Director, Stanford University School of Medicine

Alan Balch, PhD, MS

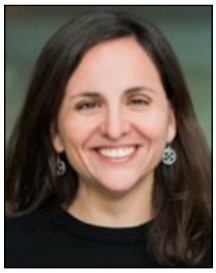
CEO, Patient Advocate Foundation and National Patient Advocate Foundation

Peter Neupert, MBA

Advisor and board member of public and private companies in the health sector

Diana Brixner, PhD, RPh

Professor, Department of Pharmacotherapy; Executive Director, Outcomes Research Center, College of Pharmacy, University of Utah



Jennifer Temel, MD

Professor, Department of Medicine, Harvard Medical School; Clinical Director, Thoracic Oncology, Massachusetts General Hospital

Thomas W. Feeley, MD

Senior Fellow, Institute of Strategy and Competitiveness, Harvard Business School

Stephanie Wheeler, PhD, MPH

Professor, Health Policy and Management, Association Director of Community Outreach and Engagement, UNC Gillings School of Public Health

Jennifer Malin, MD, PhD

Senior Medical Director, Oncology and Genetics, UnitedHealth Group

Peter Yu, MD

Physician-in-Chief, Hartford HealthCare Cancer Institute

Hutchinson Institute for Cancer Outcomes Research team

The HICOR team, from left to right: Judy Nelson, Kate Watabayashi, Kat Egan, Debbie Delaney, Scott Ramsey, Kristy Drury, Amy Harper, Hayley Sanchez, Laura Panattoni, Catherine Fedorenko, Sarah Shirley, Winona Wright, Qin Sun, Jordan Steelquist, Lily Li, Shasank Chennupati, Ari Bell-Brown, Yuxian Du, Andrea Tate, Parth Shah, Karma Kreizenbeck, Bernardo Goulart, Veena Shankaran

FRED HUTCH

FRED HUTCHINSON CANCER RESEARCH CENTER
1100 Fairview Avenue N. | Seattle, WA 98109

fredhutch.org