



Cancer Research Center

Highlights of 2022

Our Cancer Research Center continues to make great strides in our mission to benefit patients through innovative cancer care that integrates clinical research and quality improvement into routine care close to home. Trial enrollment is robust, thanks to a diversified trial portfolio that is tailored to the needs of our patients. Additional core Investigators have joined our Center leadership, heightening our expertise in various cancers. We are building a foundation of leading-edge practices by employing artificial intelligence research technology not available elsewhere in the Twin Cities. Our cannabis research and patient reported outcomes work continues to flourish, providing real-world data that have a positive impact on our community. Through collaborations with other HealthPartners Institute research centers, we are advancing our knowledge of how various health factors, such as diabetes, affect cancer care. These partnerships drive research excellence by creating Institute-wide initiatives on research training and mentorship to ensure our clinical investigators are second to none.

As the African Proverb states, "If you want to go fast, go alone; if you want to go far, go together." The dedication and hard work of our staff, the support from leaders and cancer providers throughout our cancer program, and our many collaborations with researchers both within and outside of our organization have enhanced our successes. We look forward to what we will accomplish together in the year ahead.



Dylan Zylla, MD, MS
Medical Director



Joanna Hill, MBA, CCRP
Administrative Director

Ensuring our patients receive the best care experience

Our mission is to benefit patients through innovative cancer care that seamlessly integrates clinical research and quality improvement into routine care close to home.

Since our Center's inception in 2019, we have grown at an exponential rate. Such growth requires engagement in an increasing number of clinical research studies which require careful consideration of eligibility criteria to ensure that we are best serving our patients. However, as study entry criteria are becoming more complex and eligible tumor types are largely based on a variety of genetic mutations, determining the best patient-to-study fit is often difficult.

That is why we are pursuing the purchase of a software platform that uses natural language processing (NLP) and artificial intelligence (AI) techniques to better match patients to clinical trials. This system will allow us to extract tens of thousands of clinical data points – symptoms, diagnoses, treatments, genomics, lifestyle data and more – turning fragmented medical documents into unified patient graphs that contain all the concepts needed to match complex clinical trial criteria. This software program will better match our patients to our available trials, offering more patients more options.



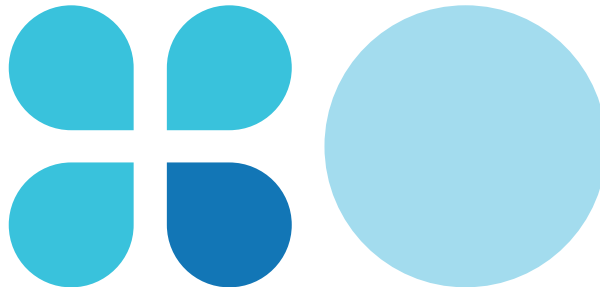
State-wide survey study informs cannabis use patterns

Despite the growing popularity of cannabis, there is limited knowledge on the prevalence of use, types of cannabis used, and long-term safety for people who have cancer. To help answer these questions, Dylan Zylla, MD, and HealthPartners Institute Center for Evaluation and Survey Research teamed up with investigators at the University of Minnesota to complete a state-wide survey study. It is funded by a National Cancer Institute (NCI) Cancer Center support grant. The team mailed over 3,000 surveys to two different cohorts in Minnesota. Cohort 1 surveyed Minnesota patients with a cancer diagnosis. Cohort 2 surveyed patients enrolled in the Minnesota State Cannabis Program for a cancer-related condition and with a recent cannabis purchase. Surveys were collected through January 2022.

Results from Cohort 2 were presented in abstract and poster sessions at the 2022 American Society of Clinical Oncology (ASCO) annual meeting. Of the 797 adults invited, 225 completed the survey that included questions on cancer history, cannabis use, symptoms and financial status. Seventy-five percent of respondents reported at least daily cannabis use. Most patients felt cannabis improved their symptoms, including 83% reporting improvement in both insomnia and pain. Thirty-one percent of patients reported spending more than \$200 per month on cannabis products. Our next steps include analyzing data from Cohort 1 surveys and preparing a manuscript.

Reducing drug interference with the HER2 biomarker test in breast cancer patients

Human epidermal growth factor receptor 2 (HER2) is a gene that makes a protein on the surface of breast cells. In breast cancer, the HER2 gene changes and makes extra copies of the HER2 gene. When the HER2 gene makes too much of the protein, the breast cancer cells will divide. A blood test can tell patients if their cancer has high levels of the HER2 protein. If it does, the cancer is “HER2-positive.” HER2-positive breast cancer tends to grow and spread faster than other breast cancers. Although treatments that target HER2-positive breast cancer can be very effective, evidence suggests these treatments alter the results of HER2 testing. This can affect other treatments patients may need to receive if their cancer continues to grow. Our Center partnered with Martell Diagnostics to further test a commercial HER2 blood test, called HERTEST®. The goal was to assess the HER2 blood levels in patients scheduled to receive a treatment for HER2 positive breast cancer, called pertuzumab. Breast cancer patients consented to having blood drawn before they started treatment and after one dose of their treatment. Our last patient completed the study in November 2022 and samples are being analyzed.



Advancing quality measurement with patient-reported outcomes

The collection of patient symptoms and quality-of-life measures in the form of Patient-Reported Outcomes (PROs) is becoming increasingly common in cancer care. However, studies assessing the use of PROs as performance metrics for quality of cancer care are limited. In collaboration with experts at University of North Carolina at Chapel Hill, we are conducting a study to evaluate the feasibility of collecting and adjusting symptom questionnaires as quality metrics for patients with cancer undergoing chemotherapy and immunotherapy.

The initial wave of this study was completed by our team in 2018 with recruitment of 105 participants who completed the study. Enrollment to the second wave began in November 2022 and will recruit an additional 110 participants to this observational, survey study. Results from this study will help show how useful PRO measures are as metrics for quality of care in the future.

Supporting investigator-initiated trials

Over the past year, we maintained our commitment to supporting our own clinical investigators in the development of novel, homegrown trial concepts. Grant applications for a variety of study proposals were submitted to federal, industry and foundation funding sources in 2022. Additionally, we look forward to opening enrollment to a new study that, in collaboration with HealthPartners Institute International Diabetes Center, will use continuous glucose monitors to improve management of hyperglycemia for patients receiving alpelisib, a PIK3CA inhibitor used to treat metastatic breast cancer in combination with fulvestrant.

As we wait to hear on a number of these awards, our team looks ahead to new funding mechanisms for our investigator-initiated trials. Trials of particular interest include those looking at the safety of cannabis use in routine cancer care and its effect on the burden of symptoms on patients. With our growing portfolio of cannabis research and in collaboration with the HealthPartners Institute Development Team, our center is poised to lead the way in cannabis-related research.

Developing the next generation of clinical investigators

As our Center has grown, so has our need to engage additional clinician investigators. Several of our HealthPartners clinicians, including Advanced Practice Clinicians, have expanded their practice to incorporate leading and championing clinical trials. However, being a clinician investigator requires specialized training to uphold HealthPartners' reputation for research excellence. Our Center has partnered with other HealthPartners Institute Centers, research teams and leadership to develop a comprehensive new clinician investigator training. This training will not only include federal and state regulations, it will also show how to apply such regulations into everyday practice. The training will soon be available to all new and current clinician investigators throughout our organization.

BY THE NUMBERS

40

The number of studies reviewed at the Cancer Research Review Committee

20

Number of studies currently available to patients

292

Number of patients pre-screened to participate in clinical trials

3

Average number of months to activate a study within the Cancer Research Center

60

Number of patients newly enrolled in our studies in 2022

11

Number of studies endorsed by the Cancer Research Review Committee

Generous giving from individuals and community partners enables us to conduct research that improves health and well-being in our community and beyond. We recognize the crucial role of giving in furthering research and discovery. We are grateful to the Engdahl Family Foundation and the many patients, families and community organizations who make this work possible.

Growing our Cancer Research Center team

This year we added two additional members to the Cancer Research Center research team:



Jordan Cowger, research coordinator, primarily assists with patient screening, enrollment to our registry and biospecimen trials, laboratory assessments and data management. Prior to this role, Jordan worked as the oncology research intern at HealthPartners for over two years, while also working as an emergency department technician in Owatonna, Minnesota. She is a current graduate student at St. Mary's University working on a Master of Public Health degree.



Bridget Veldman, PharmD is a graduate of Butler University College of Pharmacy. She completed a PGY-1 Pharmacy Residency at Methodist Hospital in 2018, then stayed as a clinical pharmacist, working in internal medicine, cardiology and emergency medicine. In September 2022, Bridget took on the new role of research pharmacist for the Cancer Research Center and Critical Care Research Center on the west campus. She manages inventory for investigational drug trials, coordinates admixture/dispensing of study drugs, and facilitates Epic and Beacon builds for new study protocols.

Leadership team

Joanna Hill, MBA, CCRP, Center Administrative Director

Dylan Zylla, MD, MS, Center Medical Director

Daniel Anderson, MD, MPH, Core Investigator and MMCORC Principal Investigator

Kurt Demel, MD, PhD, Core Investigator

Arkadiusz Dudek, MD, PhD, Early Phase Therapeutics Program (EPTP), Medical Director

Grace Gilmore, Program Operations Supervisor

Yan Ji, MD, PhD, Core Investigator

Rachel Lerner, MD, MS, Core Investigator

Jayanthi Vijayakumar, MBBS, Core Investigator



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Visit healthpartnersinstitute.org to learn more.

Select publications

Each year, our authors contribute to science and improvements in care by disseminating their research findings. In 2022, our authors published 13 peer-reviewed papers, books and book chapters. Here's a selection of that work.

Agarwal N, Tangen CM, Hussain MHA, Gupta S, Plets M, Lara PN, Harzstark AL, Twardowski PW, Paller CJ, **Zylla DM**, Zibelman MR, Levine E, Roth BJ, Goldkorn A, Vaena DA, Kohli M, Crispino T, Vogelzang NJ, Thompson IM, Jr., Quinn DI. Orteronel for metastatic hormone-sensitive prostate cancer: a multicenter, randomized, open-label phase III trial (SWOG-1216). *J Clin Oncol*. 2022 Oct 1;40(28):3301-9.

Basch E, Schrag D, Henson S, Jansen J, Ginos B, Stover AM, Carr P, Spears PA, Jonsson M, Deal AM, Bennett AV, Thanarajasingam G, Rogak LJ, Reeve BB, Snyder C, Bruner D, Cella D, Kottschade LA, Perlmutter J, Geoghegan C, Samuel-Ryals CA, Given B, Mazza GL, Miller R, Strasser JF, **Zylla DM**, Weiss A, Blinder VS, Dueck AC. Effect of electronic symptom monitoring on patient-reported outcomes among patients with metastatic cancer: a randomized clinical trial. *JAMA*. 2022 Jun 28;327(24):2413-22.

Danciu OC, Holdhoff M, **Peterson RA**, Fischer JH, Liu LC, Wang H, Venepalli NK, Chowdhery R, Nicholas MK, Russell MJ, Fan TM, Hergenrother PJ, Tarasow TM, **Dudek AZ**. Phase I study of procaspase-activating compound-1 (PAC-1) in the treatment of advanced malignancies. *Br J Cancer*. 2022 Dec 5.

Guggisberg JM, Schumacher M, Gilmore GE, Zylla DM. Cannabis as an anticancer agent: a review of clinical data and assessment of case reports [review]. *Cannabis Cannabinoid Res*. 2022 Feb;7(1):24-33.

Jax SE, Schmiechen KG, Zylla DM. Holy smokes! Developing a cannabis clinic for patients with cancer. *Oncol Issues*. 2022 Jul;37(4):26-31. PMID: Cancer Research Center (CRC).

Johnson M, **Dudek AZ**, Sukari A, Call J, Kunk PR, Lewis K, Gainor JF, Sarantopoulos J, Lee P, Golden A, Harney A, Rothenberg SM, Zhang Y, Goldman JW. ARRY-382 in combination with pembrolizumab in patients with advanced solid tumors: results from a phase 1b/2 study. *Clin Cancer Res*. 2022 Jun 13;28(12):2517-26.

Tyler LC, Le AT, Chen N, Nijmeh H, Bao L, Wilson TR, Chen D, Simmons B, Turner KM, Perusse D, Kasibhatla S, Christiansen J, **Dudek AZ**, Doebele RC. MET gene amplification is a mechanism of resistance to entrectinib in ROS1+ NSCLC. *Thorac Cancer*. 2022 Nov;13(21):3032-41.

Zylla DM, Jax SE, Schmiechen KG, Jelle K, Gilmore GE. A novel cannabis education clinic for patients with cancer: patient characteristics from initial visit [abstract]. *J Clin Oncol*. 2022 Oct;40(28 Suppl):298. [Poster at the American Society of Clinical Oncology (ASCO) Quality Care Symposium, Chicago, IL, Oct 2022.]

Zylla DM, Parsons HM, Ziegenfuss JY, Lindgren BR, Park S, Blaes AH. Self-reported efficacy and usage of cannabis among patients with cancer within the Minnesota Cannabis Program [abstract]. *J Clin Oncol*. 2022 Jun;40(16 Suppl):12122. [Presented at the American Society of Clinical Oncology (ASCO) 2022 Annual Meeting, Chicago, IL, Jun 2022.]